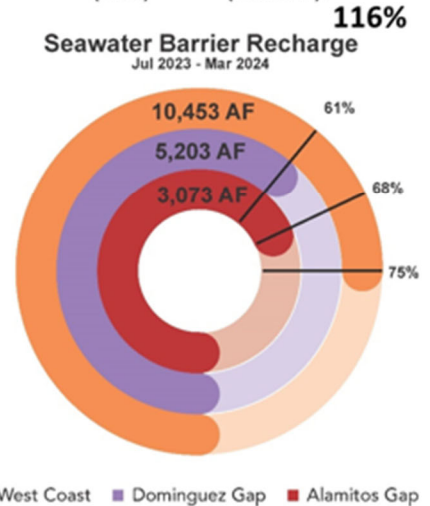
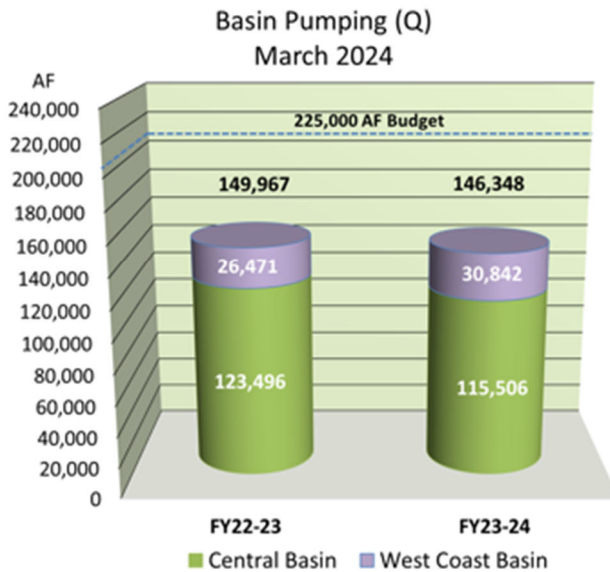
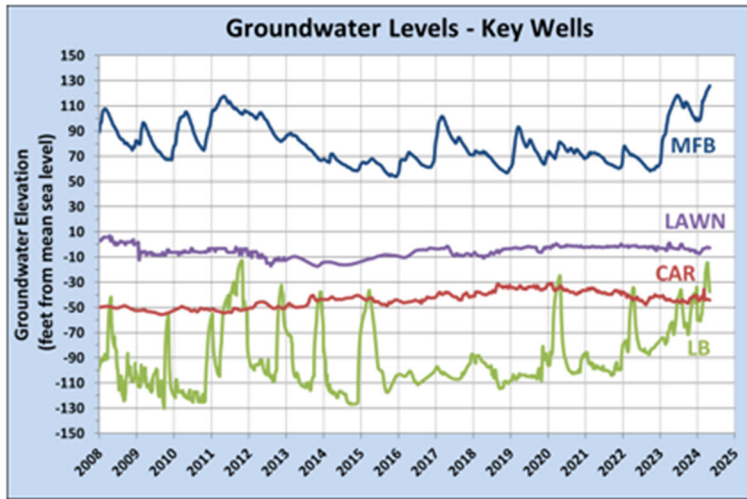
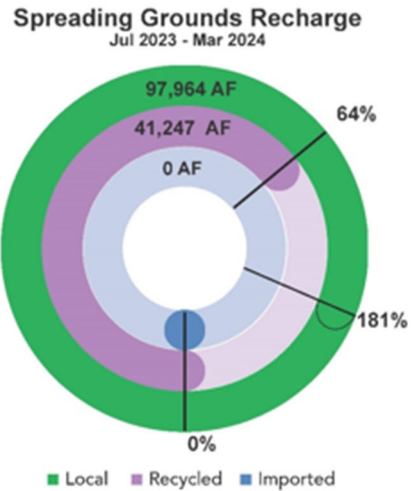
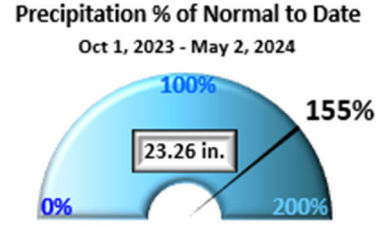
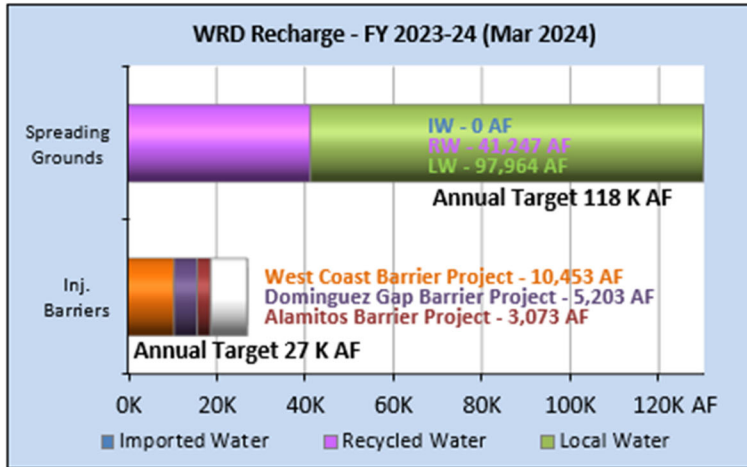


# GROUNDWATER BASIN UPDATE FOR MAY 2024

## GROUNDWATER BASINS AT A GLANCE\*



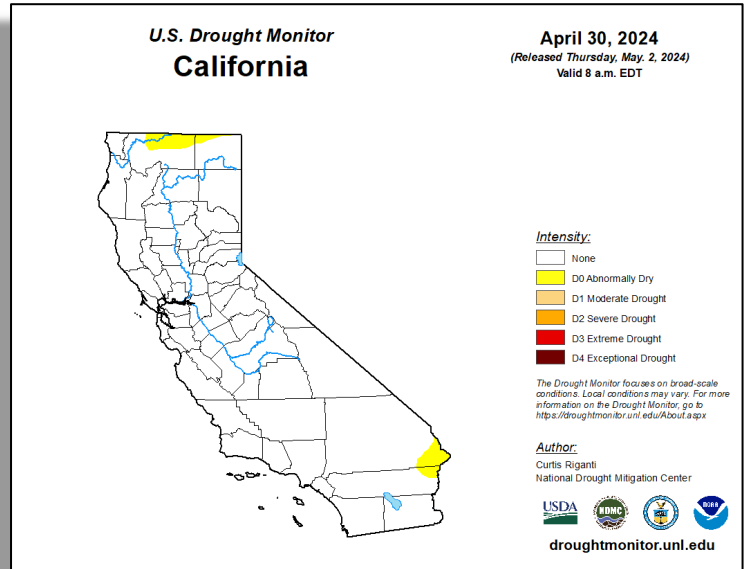
\* - Preliminary numbers, subject to change.

**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, 2023 – May 2, 2024)**

The WRD precipitation index reports that for the 2023-24 Water Year, there has been above average rainfall (23.26 inches) through May 2, 2024. The normal rainfall for this time period is 14.96 inches, so the District is 155% of normal. As of April 30, 2024, the U.S. Drought Monitor is reporting 3% of the State is abnormally dry (down 2%), 0% under moderate (same) 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.



**Snowpack (Snow Water Content [SWE] as of May 6, 2024)**

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 courses being the original courses established in the early 1900’s. The average snow course is 1,000 feet long and consists 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.

NORTH	
Data For: 06-May-2024	
Number of Stations Reporting	26
Average snow water equivalent	21.7"
Percent of April 1 Average	76%
Percent of normal for this date	119%

CENTRAL	
Data For: 06-May-2024	
Number of Stations Reporting	48
Average snow water equivalent	17.6"
Percent of April 1 Average	66%
Percent of normal for this date	96%

SOUTH	
Data For: 06-May-2024	
Number of Stations Reporting	26
Average snow water equivalent	10.9"
Percent of April 1 Average	51%
Percent of normal for this date	79%

STATEWIDE SUMMARY	
Data For: 06-May-2024	
Number of Stations Reporting	100
Average snow water equivalent	16.9"
Percent of April 1 Average	66%
Percent of normal for this date	99%

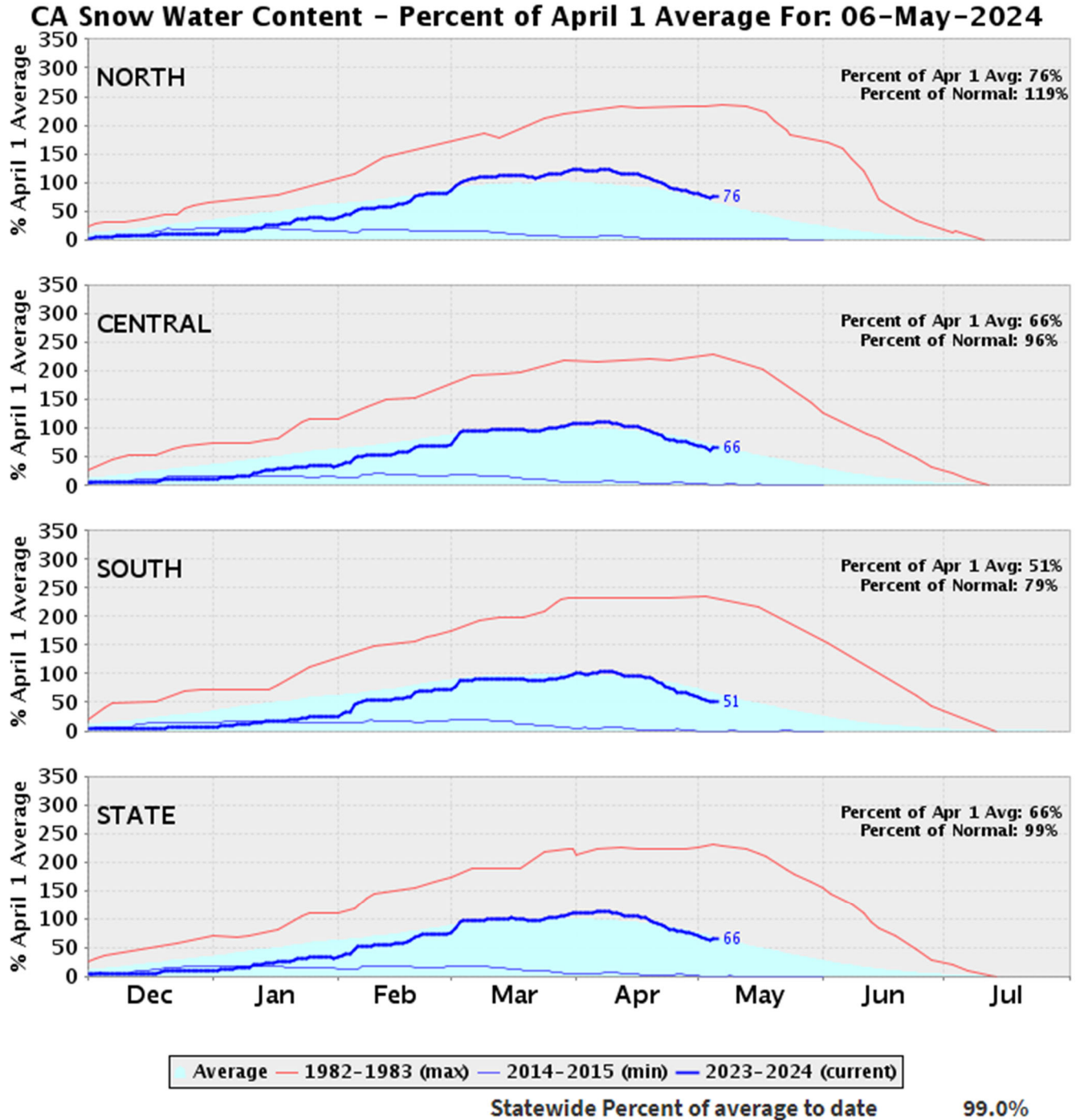
Snow Water Equivalent (SWE):

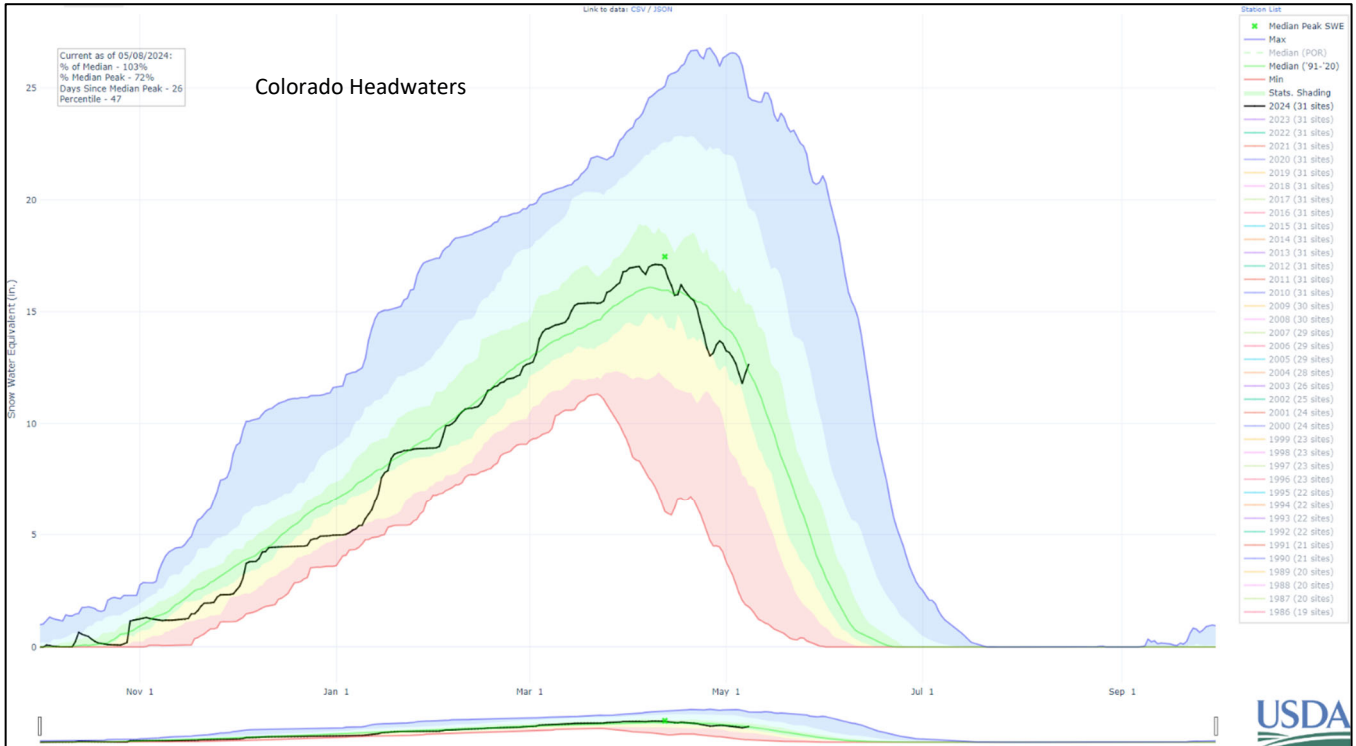
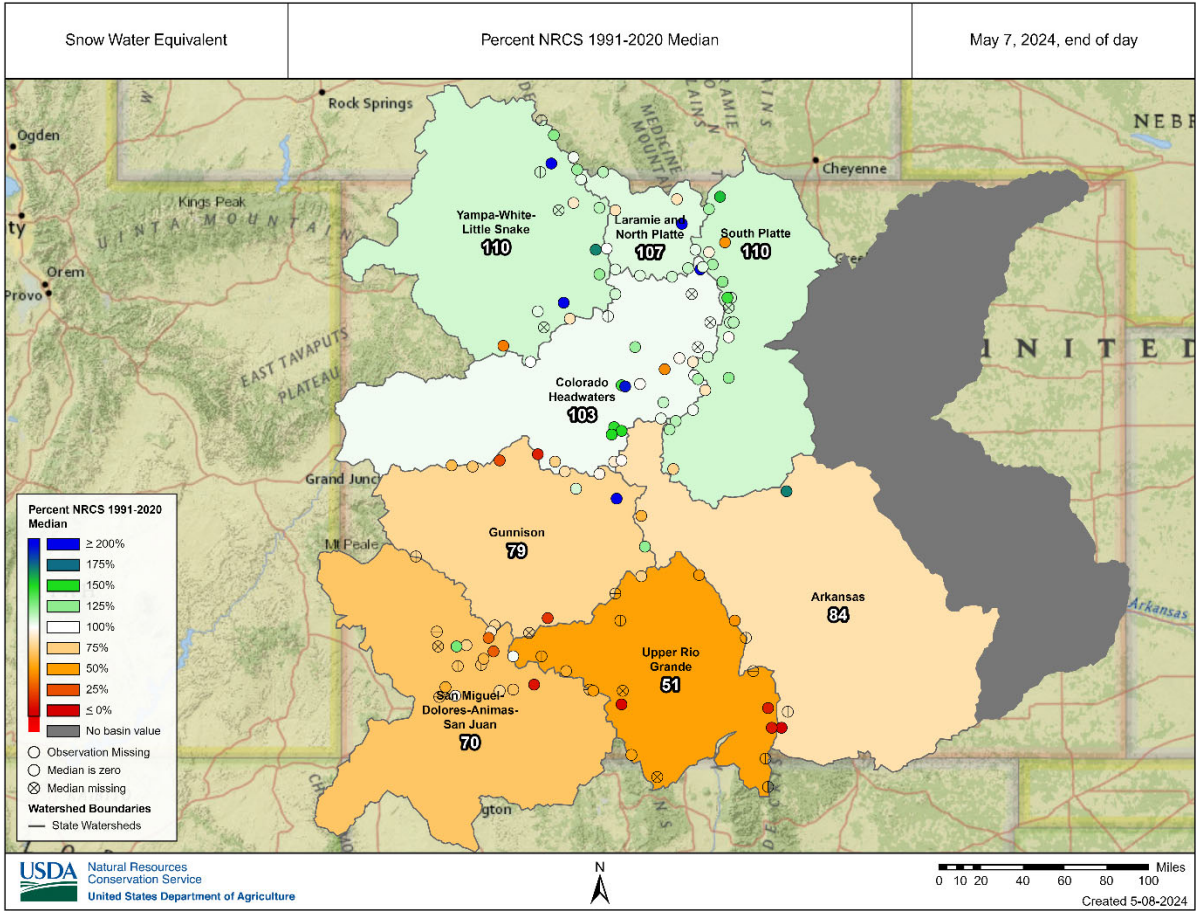
**Northern Sierra Nevada** – 21.7 in., 76% of April 1<sup>st</sup> average and 119% of normal to date

**Central Sierra Nevada** – 17.6 in., 66% of April 1<sup>st</sup> average and 96% of normal to date

**Southern Sierra Nevada** – 10.9 in., 51% of April 1<sup>st</sup> average and 79% of normal to date

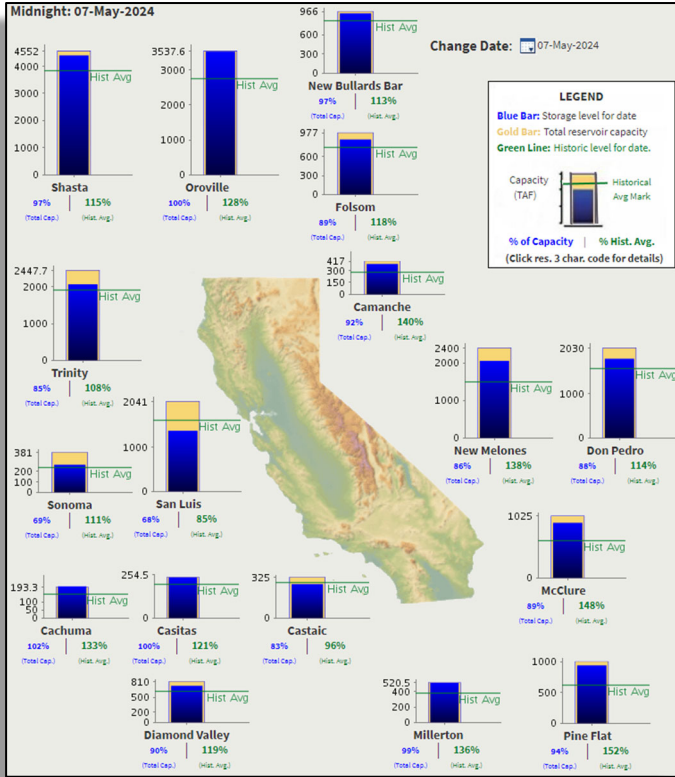
**Statewide Summary** – 16.9 in., 66% of April 1<sup>st</sup> average and 99% of normal to date





## Reservoirs (as of May 7, 2024)

For the 21 reservoirs reported monthly to the committee, water levels have increased in 17 of 21 reservoirs. The largest increase occurred at Lake Oroville (0.38 million acre feet, MAF). The smallest increase occurred at Lakes Cachuma, Perris, and Silverwood (<0.01 MAF). The largest decrease (-0.25 MAF) occurred at Lake Mead. The smallest decrease (<-0.01 MAF) occurred at Lakes Sonoma and Diamond Valley.



### MWD Reservoirs (SWP) Storage in Million Acre Feet

Reservoir	Capacity	Storage	% Full	Change
Trinity Lake (CLE)	2.45	2.07	85%	0.06
Lake Shasta (SHA)	4.55	4.40	97%	0.07
Lake Oroville (ORO)	3.54	3.53	100%	0.38
New Bullards Bar (BUL)	0.97	0.94	97%	0.08
Folsom Lake (FOL)	0.98	0.87	89%	0.12
Camanche Lake (CMN)	0.42	0.38	92%	0.02
New Melones L. (NML)	2.40	2.06	86%	0.04
Don Pedro Res (DNP)	2.03	1.79	88%	0.09
Lake McClure (EXC)	1.02	0.91	89%	0.18
Lake Sonoma (WRS)	0.38	0.26	69%	0.00
San Luis Res (SNL)	2.04	1.38	68%	-0.13
Millerton Lake (MIL)	0.52	0.52	99%	0.07
Pine Flat Res. (PNF)	1.00	0.94	94%	0.12
Cachuma Lake (CCH)	0.19	0.20	102%	0.00
Castaic Lake (CAS)	0.33	0.27	83%	0.01
Casitas Lake (CSI)	0.25	0.24	100%	0.01
Perris Lake (PRR)	0.13	0.10	76%	0.00
L. Silverwood (SLW)	0.08	0.07	92%	0.00

### MWD Reservoirs (CRA) Storage in Million Acre Feet

Reservoir	Capacity	Storage	% Full	Change
Lake Powell	23.31	7.85	34%	0.17
Lake Mead	26.12	9.32	36%	-0.25
Diamond Valley L (DVL)	0.81	0.73	90%	0.00

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 53% capacity (38.83 MAF) which is up 1.03 MAF (+1.4%) from the prior month (+1.11 MAF State Water Project [SWP] and -0.09 MAF Colorado River Aqueduct [CRA]).

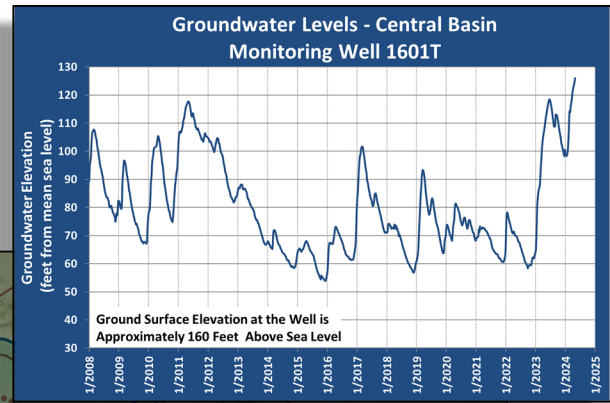
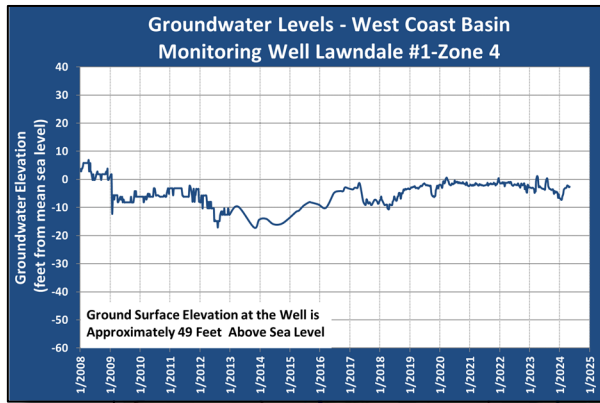


### Did you know?

The Ogallala Aquifer, the nation's largest aquifer, underlies about 175,000 square miles from Texas to South Dakota. It would take about 6,000 years to naturally refill the Ogallala Aquifer if it was ever completely depleted.

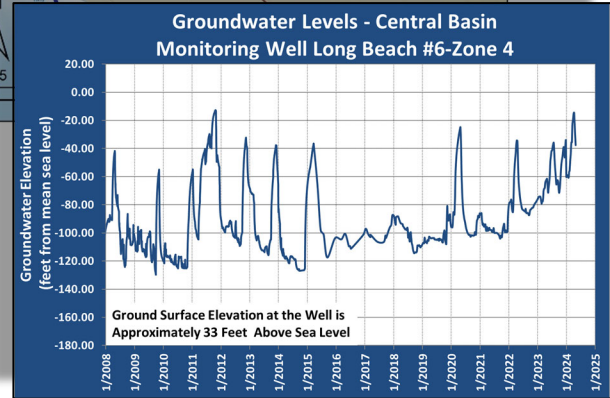
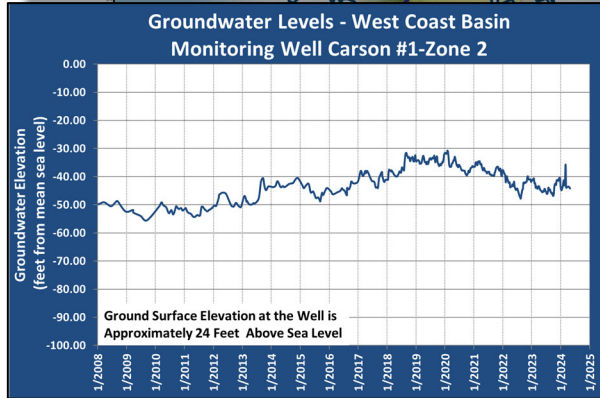
## Groundwater Levels (through May 2, 2024)

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	Increased 4.2 feet	Increased 15.1 feet
Central Basin Key Well Long Beach #6 4	<b>Decreased 22.1 feet</b>	Increased 24.0 feet
West Coast Basin Key Well Lawndale #1 4	Increased 0.1 foot	Decreased 0.2 foot
West Coast Basin Key Well Carson #1 2	Decreased 0.5 foot	<b>Increased 0.8 foot</b>

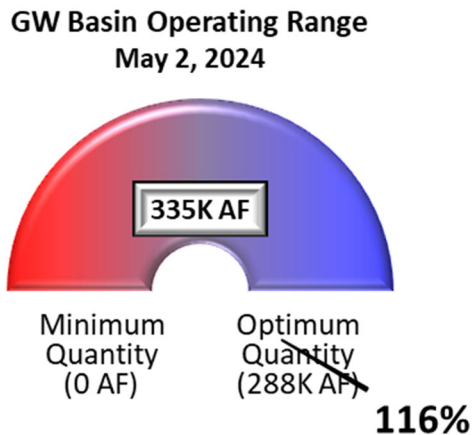
**Bold** indicates a change in direction (decreasing or increasing) since the last report.

Optimum and Minimum Groundwater Quantity (May 2, 2024)

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 May 2, 2024, has been estimated at 565,199 acre feet (subject to change), which is 334,801 acre feet above the Minimum Quantity and 46,801 acre feet above Optimum Quantity. The Basin is at 116% of Optimum Quantity which is 5% higher than what was reported last month (~16,000 AF higher).



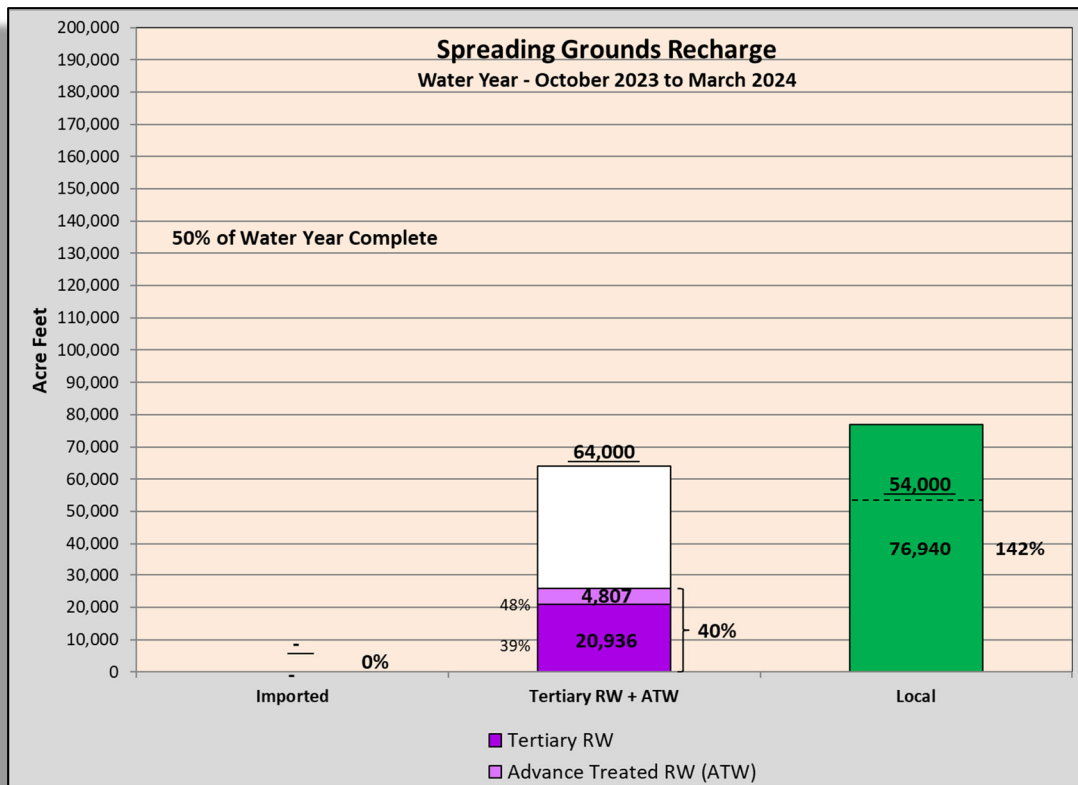
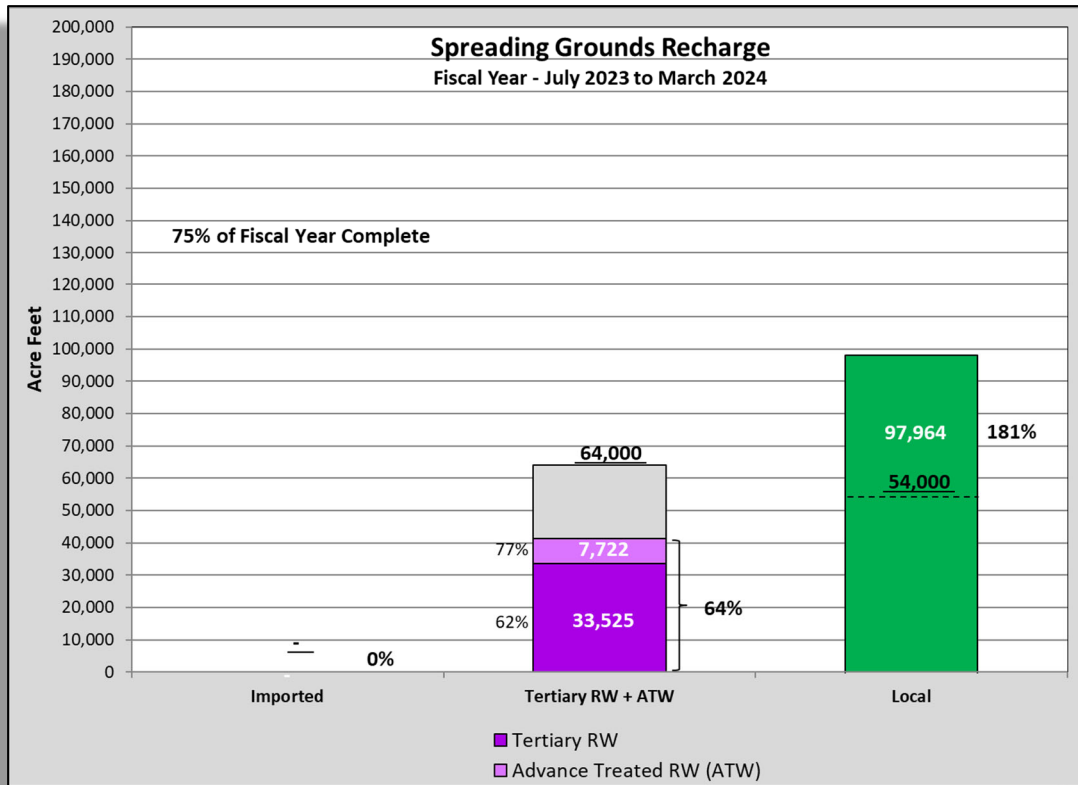
**FACT:**

*If spread across the entire U.S., the groundwater in the Ogallala Aquifer would cover all 50 states with 1.5 feet of water. Talk about your giant wading pool!*



Montebello Forebay Spreading Grounds (July 2023 – March 2024)

The following Charts shows the preliminary spreading grounds replenishment water for the current Fiscal Year (2023-24; 9 months) and Water Year (2023-24; 6 months):



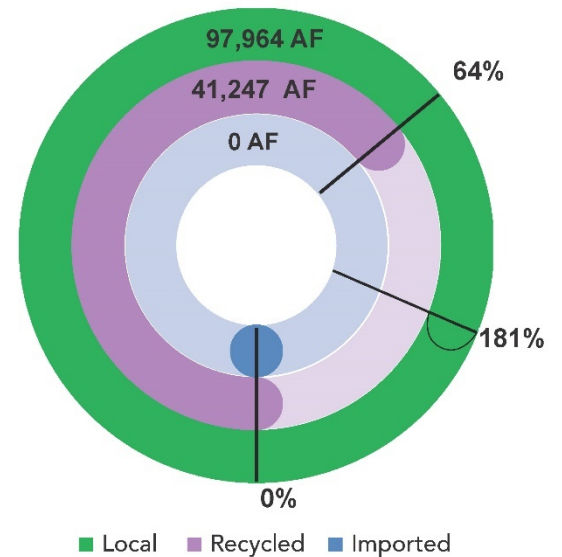


No imported water purchases were planned for Fiscal Year 2023-24.

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 water conserved at the spreading grounds less the imported and recycled water deliveries. For the 2023-24 Fiscal Year, 97,964 acre feet of local water capture have been reported by the LACPW.

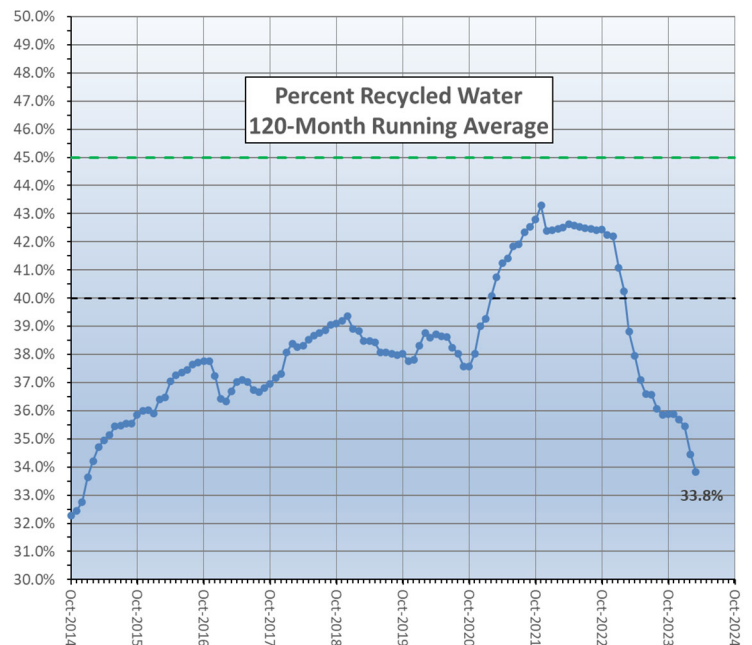
Preliminary numbers for the 2023-24 Fiscal Year show that approximately 41,247 acre feet of recycled water has been recharged with 7,722 acre feet consisting of advanced treat water from the ARC AWTF and 33,525 acre feet of tertiary recycled water. Presuming the advanced treated water as “Null Water”, the 120-month running average of the recycled water contribution in the Montebello Forebay is 33.8% and the regulatory maximum is 45%, with additional monitoring being required once 40% is reached.

**Spreading Grounds Recharge**  
Jul 2023 - Mar 2024



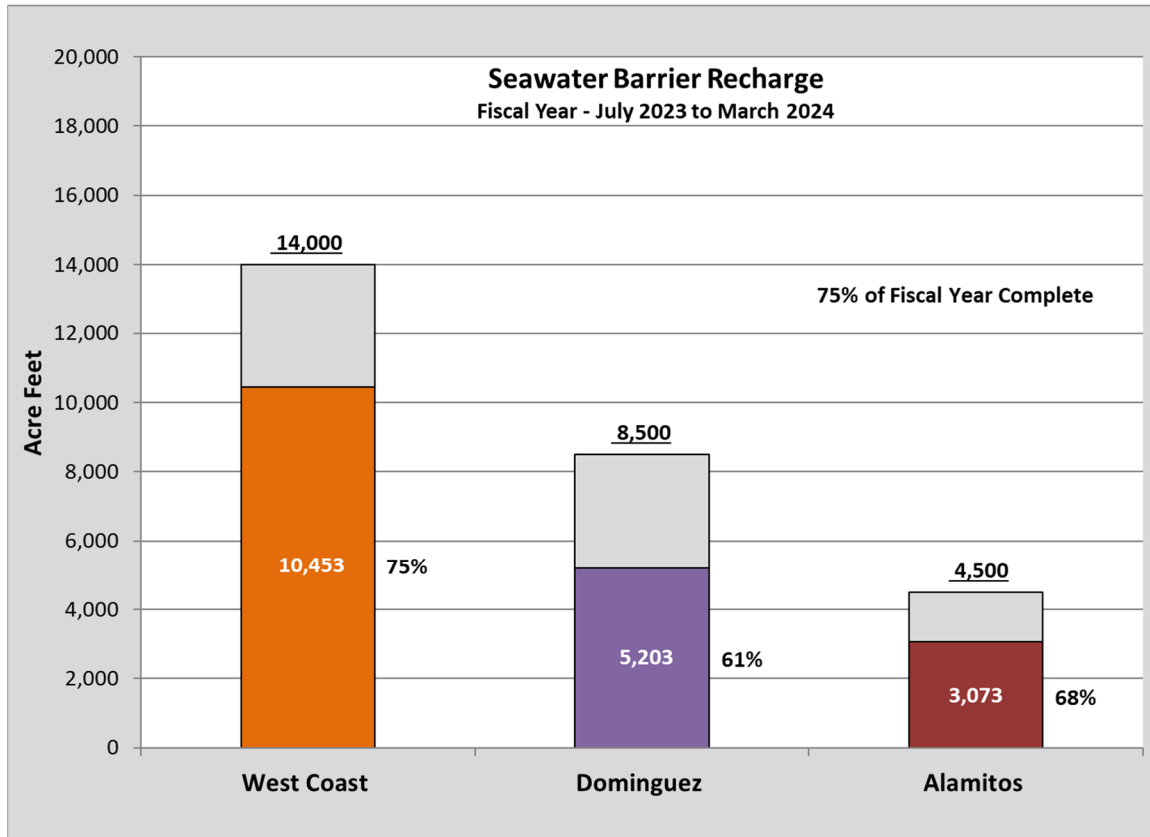
Tertiary Recycle Water Permit Update

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 2024 to have the new Title 22 Engineering Report submitted, including the requests to increase the recycled water contribution percentage to 50% and reclassify the advanced treated water as diluent.

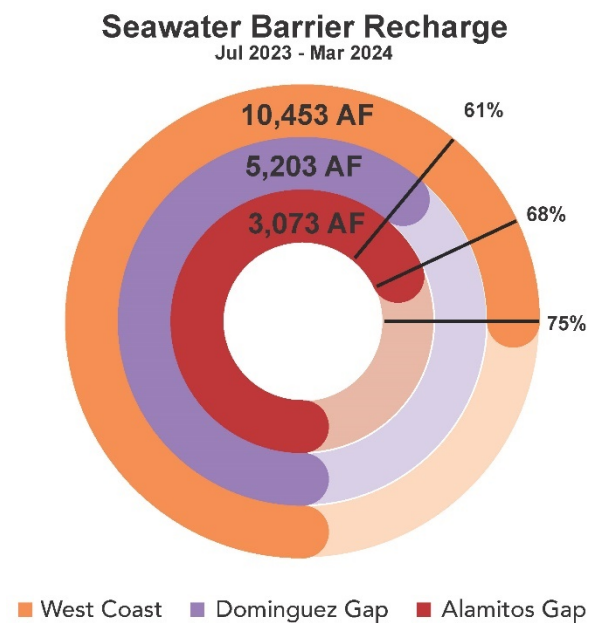


## Seawater Barrier Well Injection and Replenishment (July 2023 – March 2024)

The following Chart shows the barrier water injection:

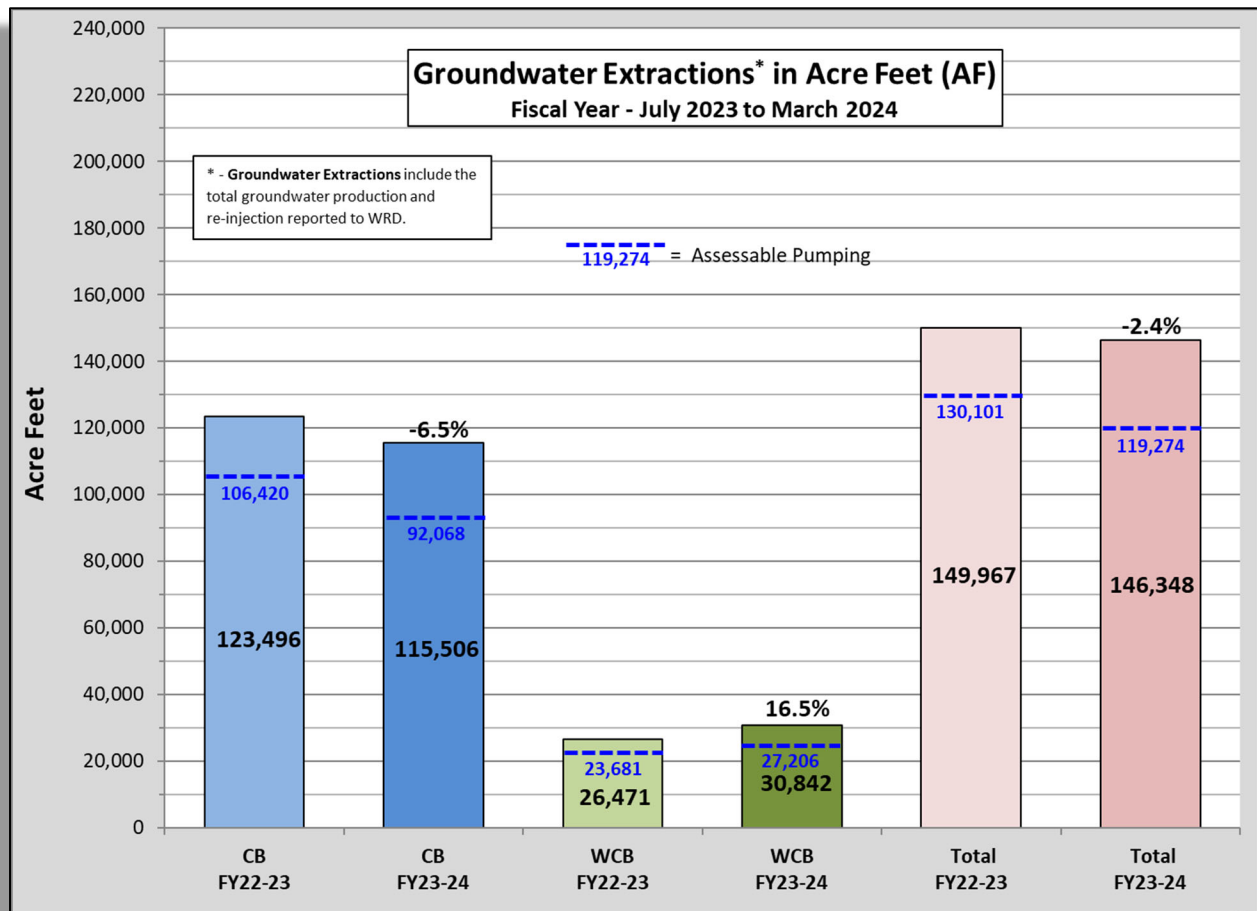


Preliminary numbers for the 2023-24 Fiscal Year show that the West Coast Barrier has used 10,453 acre feet of the total 14,000 acre feet planned for injection, 75% of total for the Fiscal Year. The Dominguez Gap Barrier used 5,203 acre feet of the total 8,500 acre feet planned for injection, 53% of the total for the Fiscal Year. The Alamitos Gap Barrier, on the WRD side, used 3,073 acre feet of the total 4,500 acre feet planned for injection, 62% of the total for the Fiscal Year. Advanced Treated Recycled Water (ATW) usage at the three barriers for the Fiscal Year is 51% at the West Coast Barrier (-6%), 71% at the Dominguez Gap Barrier (+1%), and 67% Alamitos Gap Barrier (same). The combined ATW usage at all three barriers is 59% (-4%).



Total Pumping (Fiscal Year 2023-24, July 2023 – March 2024)

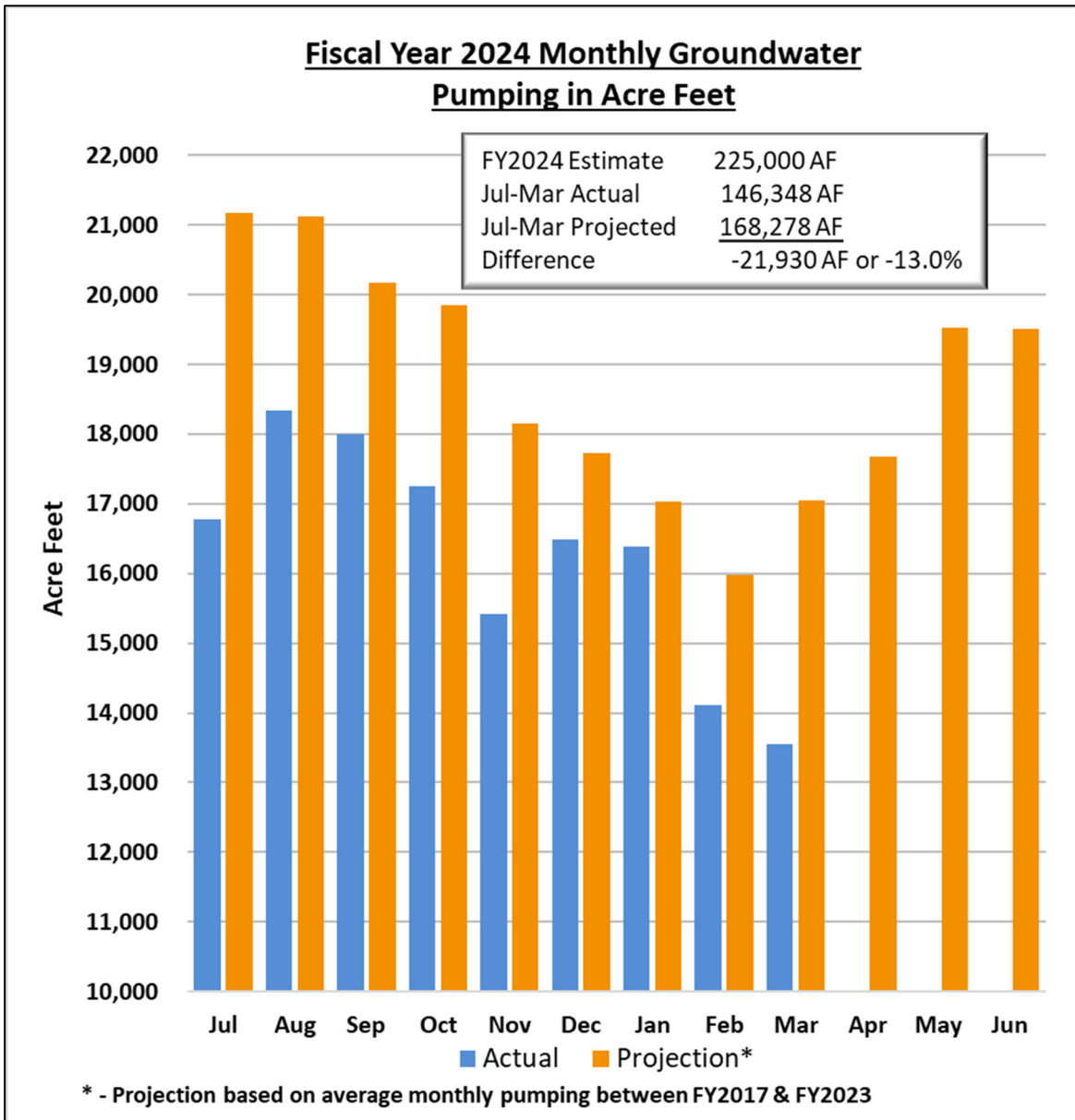
Preliminary numbers for groundwater production in the District for the Fiscal Year 2023-24 (July - March) indicate total pumping in the Central Basin was down 7,990 acre feet from the same time of the previous fiscal year (-6.5%) and the West Coast Basin total pumping was 4,371 acre feet higher than the previous fiscal year (+16.5%). The total pumping is 146,348 acre feet compared to 149,967 acre feet during the same time the previous year for a decrease of 3,619 acre feet, or -2.4%. The current pumping data does not include five (5) Central Basin pumpers and four (4) West Coast Basin Pumpers, who have not yet reported, for an estimated 2 additional acre feet.



Interesting...

90% of the groundwater from the Ogallala Aquifer is used for agricultural irrigation, which constitutes one-third of U.S. irrigated agriculture.

Preliminary numbers indicate 146,348 acre feet have been pumped this fiscal year and is 13.0% below the projected fiscal year to date goal of 168,278 acre feet (or -21,930 acre feet). Monthly actual production versus the 7-year average monthly production projections (FY 2017 through 2023) are included in the chart below.



"Still waters run deep. Shallow waters run dry frequently." - *Thomas County Cat*, June 5, 1890, Pg 3



For the Fiscal Year 2023-24 (July 2023 – March 2024), 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 data for all the pumpers can be found in the attached Exhibit A (Central Basin) and Exhibit B (West Coast Basin).

<b>Production Trends - Central Basin</b>				
<b>Top 5 Producing <u>by Volume</u> (AF)</b>	Jul 2023 - Mar 2024	Jul 2023 - Mar 2024	Difference	% Change
Whittier, City	3,437.25	4,943.29	1506.04	30.47
Commerce, City	367.70	1,167.86	800.16	68.52
Suburban Water Systems	843.64	1,559.56	715.92	45.91
Cal. American Water Co. Alpha 0679	1,013.44	1,489.20	475.76	31.95
Signal Hill, City	550.80	978.24	427.44	43.69
<b>Bottom 5 Producing <u>by Volume</u> (AF)</b>	Jul 2023 - Mar 2024	Jul 2023 - Mar 2024	Difference	% Change
Long Beach, City - CB	21,955.07	15,383.35	-6571.72	-42.72
Los Angeles, City - CB	3,294.02	12.29	-3281.73	-26,702.4
Vernon, City	4,284.96	3,546.30	-738.66	-20.83
Santa Fe Springs, City	1,259.58	652.82	-606.76	-92.94
Golden State Water Co. - CB	13,671.77	13,101.99	-569.78	-4.35

<b>Production Trends – West Coast Basin</b>				
<b>Top 5 Producing <u>by Volume</u> (AF)</b>	Jul 2023 - Mar 2024	Jul 2023 - Mar 2024	Difference	% Change
Golden State Water Co. - WB	4,203.59	6,690.66	2487.07	37.17
Cal. Water Service Co. Dominguez - WB	2,559.71	5,010.84	2451.13	48.92
Cal. Water Service Co./Hawthorne Lease	233.11	532.99	299.88	56.26
Eco Services Operations	248.64	444.21	195.57	44.03
Torrance, City	956.64	1,112.76	156.12	14.03
<b>Bottom 5 Producing <u>by Volume</u> (AF)</b>	Jul 2023 - Mar 2024	Jul 2023 - Mar 2024	Difference	% Change
Tesoro Refining	7,945.50	6,527.82	-1417.68	-21.72
Phillips 66 Co. - Alpha 7093	3,897.85	3,402.73	-495.12	-14.55
Manhattan Beach, City	343.71	107.19	-236.52	-220.65
L.A. County Department of Parks	207.78	109.02	-98.76	-90.59
Inglewood, City	1,406.94	1,309.19	-97.75	-7.47

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](mailto:eferguson@wrd.org).

**Central Basin Production Trends**

Central Basin	July 2022 - March 2023	July 2023 - March 2024	Difference	%Change
ABC USD	13.84	9.21	-4.63	-50.27
American Text. M.	41.95	45.33	3.38	7.46
Artesia, City	7.34	1.26	-6.08	-482.54
Atlas Iron and Metal Co.	0.27	0.27	.00	0.00
Bell Gardens, City	0.00	0.00	.00	0.00
Bellflower Home Garden	0.00	0.00	.00	0.00
Bellflower, City	231.98	0.00	-231.98	-100.00
Bellflower-Somerset MWC	3,516.80	3,523.53	6.73	0.19
Boeing Co.	29.90	95.32	65.42	68.63
Boeing, Compton Site	36.30	53.07	16.77	31.60
Cal. American Water Co. Alpha 0679	1,013.44	1,489.20	475.76	31.95
Cal. Water Service Co. (East LA)	8,005.16	8,348.40	343.24	4.11
Cal. Water Service Co. Dominguez - CB	552.42	826.60	274.18	33.17
Caltrans	4.11	10.17	6.06	59.59
Central Basin MWD	0.00	0.00	.00	0.00
Cerritos, City	5,382.21	5,191.23	-190.98	-3.68
Coast Packing Co.	104.43	98.55	-5.88	-5.97
Commerce, City	367.70	1,167.86	800.16	68.52
Compton, City	5,032.01	4,913.96	-118.05	-2.40
Darling-Delaware Co.	0.00	0.00	.00	0.00
Defense Logistic Agency	2.36	3.52	1.16	32.95
Demunno Kerdoon	1.22	2.13	.91	42.72
Downey, City	9,921.34	9,931.46	10.12	0.10
El Rancho Unified School District	0.00	0.00	.00	0.00
Furr, Nancy J.	0.04	0.00	-.04	-100.00

Central Basin	July 2022 - March 2023	July 2023 - March 2024	Difference	%Change
Golden State Water Co. - CB	13,671.77	13,101.99	-569.78	-4.35
Huntington Park, City - Alpha 2378	2,032.70	1,898.34	-134.36	-7.08
L.A. County Department of Parks	0.00	0.00	.00	0.00
LA County Rancho Los Amigos	138.63	156.55	17.92	11.45
La Habra Heights County WD	1,673.78	1,555.39	-118.39	-7.61
Lakewood - City	4,752.63	4,796.86	44.23	0.92
Liberty Utilities - CB	3,378.72	3,150.78	-227.94	-7.23
Lincoln Memorial Park	6.51	0.00	-6.51	-100.00
Little Lake Cemetery District	1.36	0.00	-1.36	-100.00
Long Beach, City - CB	21,955.07	15,383.35	-6571.72	-42.72
Los Angeles, City - CB	3,294.02	12.29	-3281.73	-26,702.44
Lunday-Thagard	0.00	0.00	.00	0.00
Lynwood Park Mutual Water Co.	56.84	18.96	-37.88	-199.79
Lynwood, City	3,294.74	3,440.00	145.26	4.22
Maywood Mutual No. 1	437.72	471.86	34.14	7.24
Maywood Mutual No. 2	655.37	684.14	28.77	4.21
Maywood Mutual No. 3	1,037.96	1,004.02	-33.94	-3.38
Montebello Land and Water Co.	2,113.39	2,131.20	17.81	0.84
Montebello, City	0.00	0.00	.00	0.00
Newark Group, Inc.	120.15	116.29	-3.86	-3.32
Northrop Grumman	2.72	0.00	-2.72	-100.00
Norwalk, City	379.20	245.12	-134.08	-54.70
Omega OU1/OU3 LLC	0.00	4.83	4.83	100.00
Orchard Dale Water District	1,288.14	1,283.22	-4.92	-0.38
PABCO Building Products	0.00	0.00	.00	0.00
Paradise Memorial Park	5.54	5.80	.26	4.48
Paramount USD	2.42	0.81	-1.61	-198.77
Paramount, City	2,018.22	2,105.11	86.89	4.13

Central Basin	July 2022 - March 2023	July 2023 - March 2024	Difference	%Change
Pico Rivera, City	2,942.94	2,843.56	-99.38	-3.49
Pico Water District	1,886.95	1,856.35	-30.60	-1.65
Rockview Dairies	63.10	22.00	-41.10	-186.82
Roman Catholic Archbishop - CB	97.99	163.26	65.27	39.98
Rowland Water District	0.00	0.00	.00	0.00
San Gabriel Valley Water Co.	1,806.80	2,194.76	387.96	17.68
Santa Fe Springs, City	1,259.58	652.82	-606.76	-92.94
Sativa Water District	1.50	0.00	-1.50	-100.00
Scantlebury, Robert P.	0.30	0.19	-.11	-57.89
SFPP L.P.	0.00	0.00	.00	0.00
Signal Hill, City	550.80	978.24	427.44	43.69
South Gate, City	6,072.54	5,826.62	-245.92	-4.22
South Montebello Irrigation Dist	1,233.87	1,199.98	-33.89	-2.82
Southern California Edison Co. - CB	2.35	0.53	-1.82	-343.40
St. John Bosco School	21.64	7.34	-14.30	-194.82
Suburban Water Systems	843.64	1,559.56	715.92	45.91
Tract 180 Water Co.	908.18	908.42	.24	0.03
Tract 349 Mutual Water Co.	458.30	465.39	7.09	1.52
Tucker, William M.	0.26	0.02	-.24	-1,200.00
Vernon, City	4,284.96	3,546.30	-738.66	-20.83
Virginia Country Club	236.50	203.57	-32.93	-16.18
Walnut Park Mutual	762.75	774.61	11.86	1.53
Whittier Union HSD	17.44	14.79	-2.65	-17.92
Whittier, City	3,437.25	4,943.29	1506.04	30.47
WRD	24.12	66.79	42.67	63.89
Yamamoto, Alice	0.07	0.00	-.07	-100.00



**West Coast Basin Production Trends**

West Basin	July 2022 - March 2023	July 2023 - March 2024	Difference	%Change
ABC Nursery	9.00	0.00	-9.00	-100.00
Cal. Water Service Co. Alpha 7050	627.13	758.03	130.90	17.27
Cal. Water Service Co. Dominguez - WB	2,559.71	5,010.84	2451.13	48.92
Cal. Water Service Co./Hawthorne Lease	233.11	532.99	299.88	56.26
Eco Services Operations	248.64	444.21	195.57	44.03
Golden State Water Co. - WB	4,203.59	6,690.66	2487.07	37.17
Hillside Memorial Park	79.28	67.79	-11.49	-16.95
Honeywell International	0.00	0.00	.00	0.00
Inglewood, City	1,406.94	1,309.19	-97.75	-7.47
Kinder Morgan Liquids Terminals	26.93	25.62	-1.31	-5.11
L.A. County Department of Parks	207.78	109.02	-98.76	-90.59
L.A. County Sanitation Districts-JWPCP	0.00	0.00	.00	0.00
Lomita, City	0.00	0.00	.00	0.00
Long Beach, City - WB	0.00	31.16	31.16	100.00
Manhattan Beach, City	343.71	107.19	-236.52	-220.65
Montrose Chemical Corp.	-1.04	-0.82	.22	-26.83
Myron Z. Chalavin	0.00	0.00	.00	0.00
Pacific Crest Cemetery Co.	27.40	0.00	-27.40	-100.00
Phillips 66 Co. - Alpha 7093	3,897.85	3,402.73	-495.12	-14.55
Rolling Hills Country Club	145.00	150.00	5.00	3.33
Roman Catholic Archbishop - WB	113.17	67.09	-46.08	-68.68
SCI Funeral Services	0.00	21.81	21.81	100.00
Shell Oil Co NCWUP	78.82	44.91	-33.91	-75.51
Southern California Edison Co. - WB	11.47	15.48	4.01	25.90
Tesoro Refining	7,945.50	6,527.82	-1417.68	-21.72

<b>West Basin</b>	<b>July 2022 - March 2023</b>	<b>July 2023 - March 2024</b>	<b>Difference</b>	<b>%Change</b>
Torrance Refining	708.44	842.43	133.99	15.91
Torrance, City	956.64	1,112.76	156.12	14.03
West Basin Brewer Desalter	0.00	0.00	.00	0.00