



**WACO**  
*Water Advisory Committee of Orange County*

## Water Supply Report

May 7, 2021

# WATER RESOURCES SUMMARY

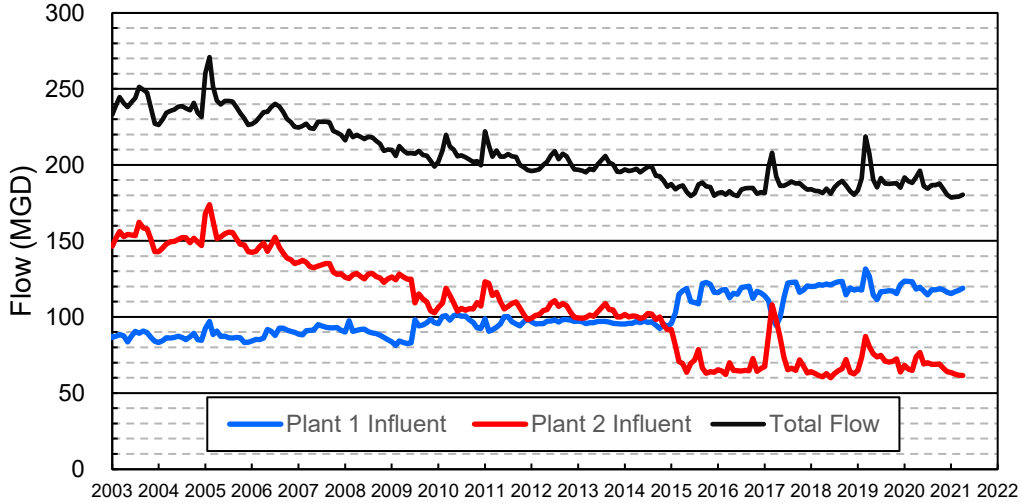
March 2021

INFLOWS & OUTFLOWS (acre-feet)	Total for Month	Year to Date - This Year    Last Year	
<b>BASIN SUPPLIES</b>			
Water Purchases from MWD (excludes In Lieu)	0	0	18,098
Water into MWD Storage Account (excludes In Lieu)	0	0	0
SAR & Santiago Creek Flows (accounts for storage to/from recharge facilities)	16,352	89,296	111,240
GWRS Water to Forebay	5,723	45,721	56,487
GWRS Water to Mid-Basin Injection Wells	835	8,173	1,623
GWRS Water to Talbert Barrier	1,963	20,269	19,171
OC-44 Water to Talbert Barrier	1	15	0
Alamitos Barrier Water	165	2,080	1,597
Incidental Recharge (estimated)	5,000	27,700	32,500
Evaporation from Recharge Basins	(215)	(2,406)	(2,407)
River Flow Lost to Ocean	<u>(179)</u>	<u>(1,218)</u>	<u>(5,450)</u>
Total Groundwater Recharge	29,645	189,629	232,859
<b>WATER PRODUCTION</b>			
Groundwater Production	20,474	212,099	213,893
MWD Storage Program Withdrawals	<u>0</u>	<u>0</u>	<u>0</u>
Total Groundwater Production	20,474	212,099	213,893
<b>BASIN BALANCE</b>			
Change in Groundwater Storage	9,171	(22,470)	18,967
Change in Groundwater Storage excluding MWD Stored Water	9,171	(22,470)	18,967
Accumulated Overdraft	-----	222,470	217,032
Accumulated Overdraft excluding MWD Storage	-----	222,470	217,032
<b>IN LIEU WATER</b>			
OCWD In Lieu Purchases (MWD Cyclic Storage)	0	0	9,355
MWD In Lieu Storage	<u>0</u>	<u>0</u>	<u>0</u>
Total In Lieu	0	0	9,355
<b>OTHER KEY INFORMATION</b>			
1. MWD Water Deliveries to Producers	6,682	71,738	66,117
2. Basin Production Percentage	75.4%	74.7%	79.7%
3. Total Water Demand	28,633	297,168	292,372
4. Total GWRS Production	8,525	74,213	77,354
5. Green Acres Project Water	247	2,922	3,087
6. SAR Water Quality			
- Total Dissolved Solids (TDS) of SAR below Prado Dam (ppm)	513	-----	672
- Total Nitrogen of SAR below Prado Dam (ppm)	2.4	-----	5.4
7. Month-End Water Storage Behind Prado Dam	3,605	-----	15,681
8. Month-End Water Storage in Recharge Facilities	12,510	-----	18,533
9. Water Storage Change in Recharge Facilities	123	(3,229)	1,750
10. Total Artificial Recharge	24,645	161,929	200,361
11. Monthly Mean Temperature at Santa Ana Fire Station (°F)	59.4	-----	60.3
12. Rainfall at FHQ (inches)	1.30	5.73	10.87

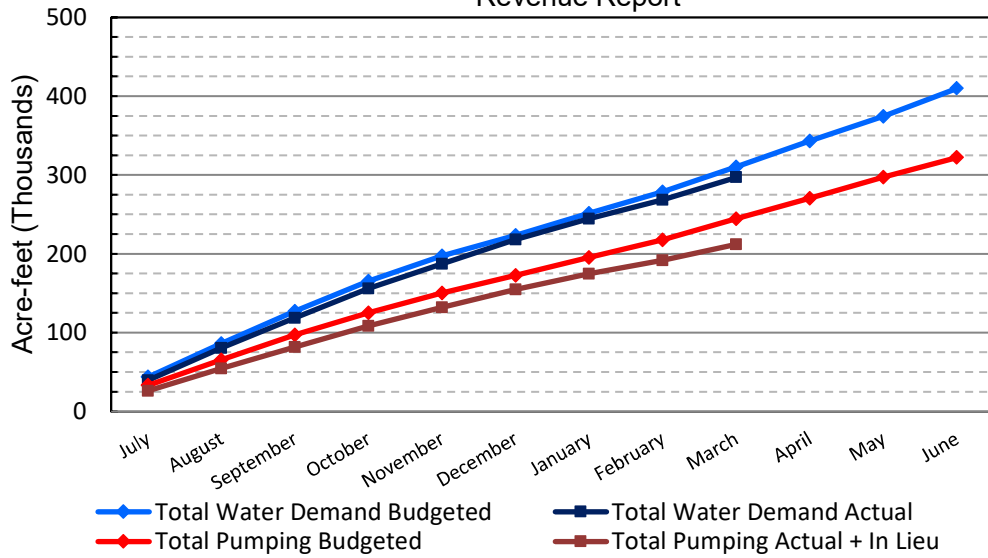
\*\*\* Note: Data are preliminary, subject to change

4/14/2021

### Orange County Sanitation District Influent Flows Report

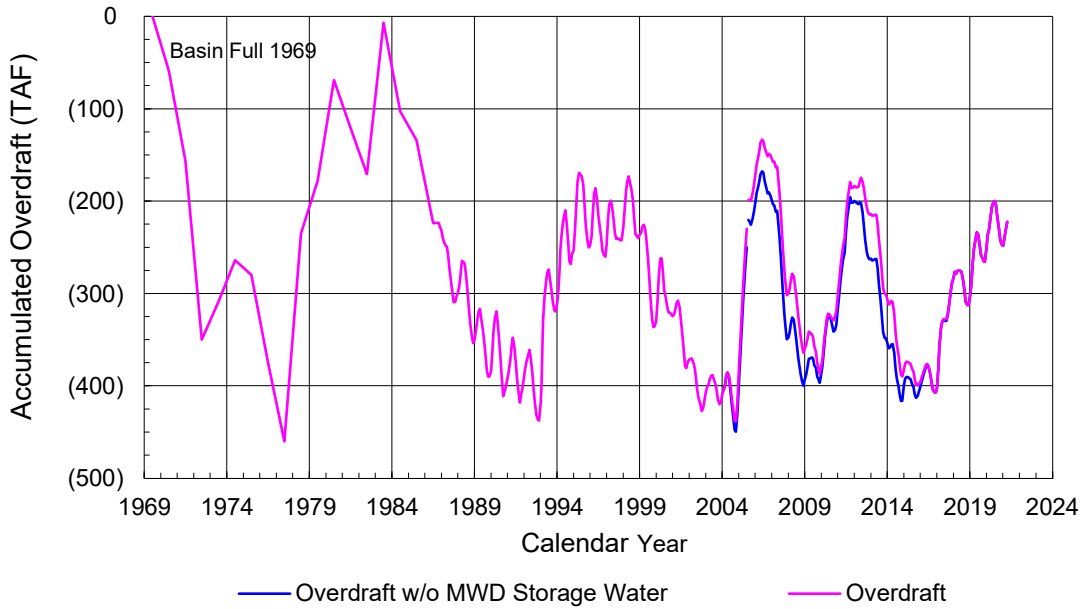


### 2019-20 Water Demands/Groundwater Pumping + In Lieu/RA Revenue Report

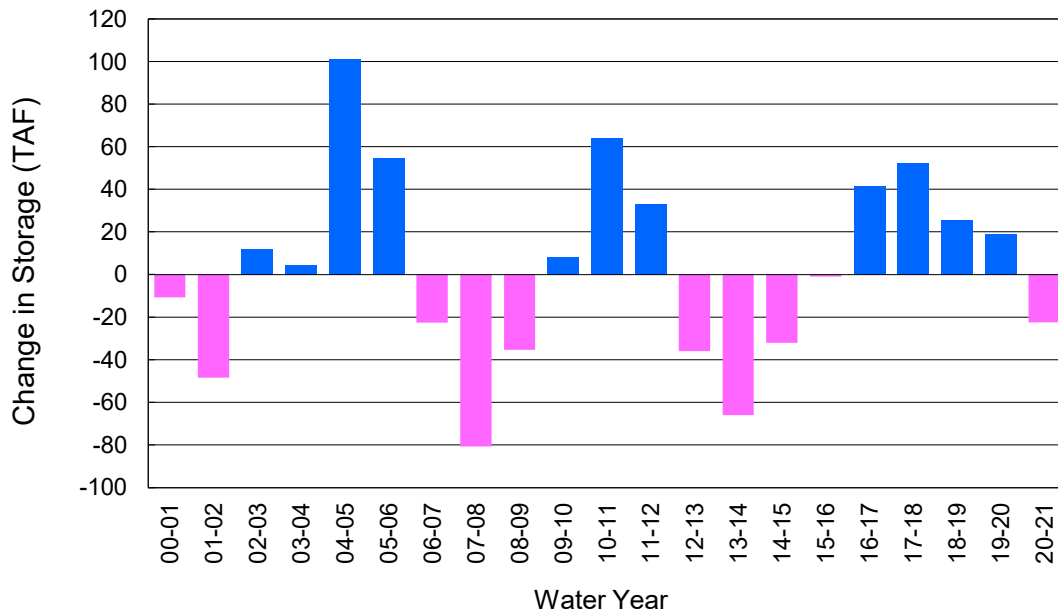


	Monthly		Accumulated Total for the Year			
	Budget	Actual	Budget	Actual	Difference	Percent
Total Water Demand	32,000	28,633	310,400	297,168	-13,232	95.74%
Total Pumping + In Lieu	26,500	20,474	244,400	212,099	-32,301	86.78%
RA Revenue	\$12,243,000	\$9,459,004	\$112,912,800	\$97,989,923	-\$14,922,877	86.78%

### Accumulated Overdraft



### YTD Change in Groundwater Storage in OCWD



## PRODUCERS WATER USAGE SUMMARY

**March 2021**

(AF except BPP)

WATER AGENCY	Ground-water (1)	In Lieu	Reclaimed Water	Total Import (2)	Total Demand	2020-21 YTD Demand	2019-20 YTD Demand	YTD % Diff Demand	MAR 2021 BPP	2020-21 YTD BPP	2019-20 YTD BPP
Anaheim	1,111	0	0	2,859	3,970	42,718	43,479	98%	28.0%	26.4%	69.8%
Buena Park	957	0	0	13	970	9,763	9,873	99%	98.7%	89.1%	75.4%
East Orange County	1	0	0	43	44	739	592	125%	2.0%	9.6%	0.7%
Fountain Valley	649	0	100	0	748	7,550	7,479	101%	100.0%	100.0%	100.0%
Fullerton	1,049	0	0	641	1,690	17,950	17,923	100%	62.1%	71.4%	79.4%
Garden Grove	1,607	0	0	69	1,676	17,040	16,488	103%	95.9%	75.1%	54.1%
Golden State	1,151	0	0	524	1,675	17,905	17,092	105%	68.7%	71.6%	80.4%
West OC System	1,055	-	-	2	1,057	10,758	10,232	105%	na	na	na
East OC System	96	-	-	522	618	7,147	6,860	104%	na	na	na
Huntington Beach	1,551	0	0	112	1,663	20,163	19,246	105%	93.3%	83.6%	84.0%
Irvine Ranch	3,781	0	1,278	7	5,066	46,157	46,028	100%	99.8%	99.5%	99.8%
DRWF Clear	2,030	-	-	-	2,030	21,044	15,846	133%	na	na	na
DRWF Color	710	-	-	-	710	6,275	6,415	98%	na	na	na
Laguna Beach	131	0	0	133	264	2,682	2,669	na	49.5%	18.5%	63.1%
La Palma	148	0	0	0	148	1,482	1,459	102%	100.0%	100.0%	100.0%
Mesa Water (MW)	1,185	0	56	8	1,248	12,797	12,747	100%	99.4%	99.9%	97.4%
MW Clear	883	-	-	-	883	9,444	9,046	104%	na	na	na
MW Amber	302	-	-	-	302	2,686	2,194	122%	na	na	na
Newport Beach	1,052	0	26	1	1,079	11,328	11,049	103%	99.9%	96.0%	60.2%
Orange	1,819	0	0	79	1,898	20,650	20,336	102%	95.8%	80.9%	80.2%
OCWD (GAP)	127	0	0	0	127	1,214	1,124	108%	100.0%	100.0%	100.0%
Santa Ana	2,104	0	15	493	2,612	25,688	25,054	103%	81.0%	76.0%	79.0%
Seal Beach	233	0	0	1	233	2,538	2,425	105%	99.7%	65.9%	63.5%
Serrano	0	0	0	174	174	2,070	1,863	111%	0.0%	0.2%	74.5%
Tustin	498	0	0	258	755	8,311	7,793	107%	65.9%	91.1%	96.1%
Westminster	810	0	0	0	810	8,135	7,969	102%	100.0%	100.0%	76.1%
Yorba Linda	<u>1</u>	<u>0</u>	<u>0</u>	<u>1,259</u>	<u>1,259</u>	<u>14,901</u>	<u>14,464</u>	<u>103%</u>	<u>0.1%</u>	<u>72.1%</u>	<u>69.7%</u>
SUBTOTAL:	19,963	0	1,475	6,674	28,112	291,781	287,152	102%	75.4%	74.7%	79.7%
Other Producers (Est ~3% of Subtotal)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>5,387</u>	<u>5,220</u>	<u>103%</u>			
<b>TOTAL:</b>	<b>19,963</b>	<b>0</b>	<b>1,475</b>	<b>6,682</b>	<b>28,121</b>	<b>297,168</b>	<b>292,372</b>		<b>75.4%</b>	<b>74.7%</b>	<b>79.7%</b>
OCWD (Talbert Barrier)	0		1,963	1	1,964	20,285	19,172				
OCSA (GAP)	na		49	na	49	888	926				

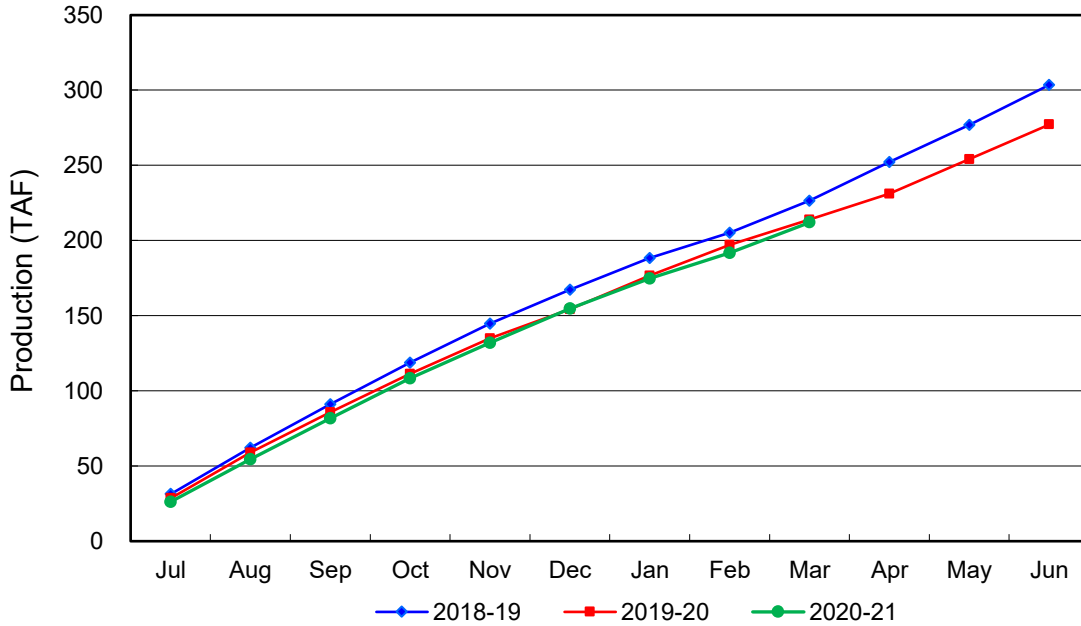
Estimated

(1) Excludes MWD CUP Withdrawals

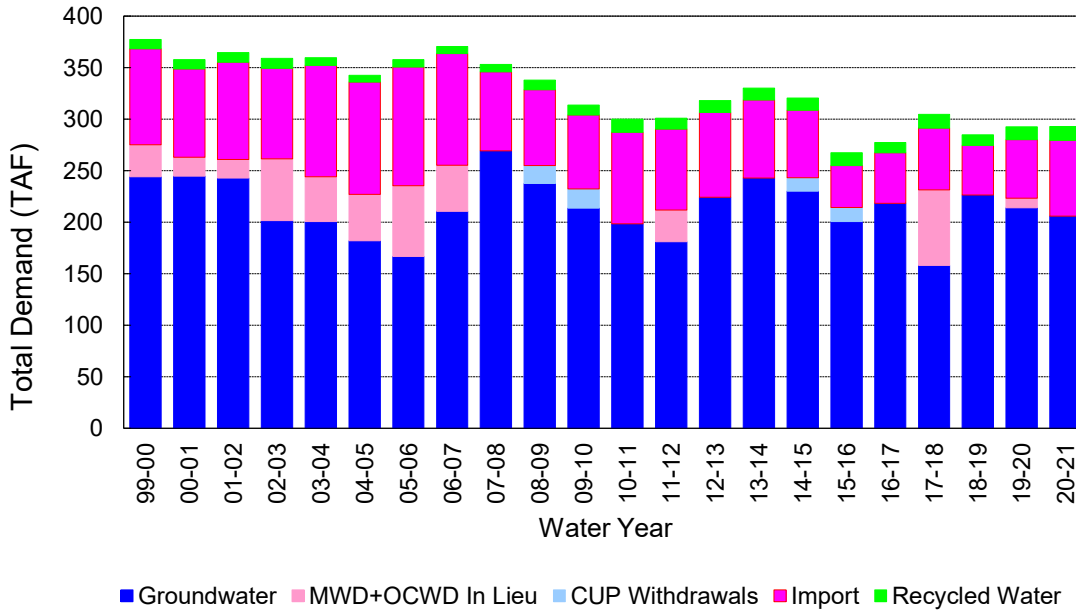
(2) Includes MWD CUP Withdrawals & In Lieu Water

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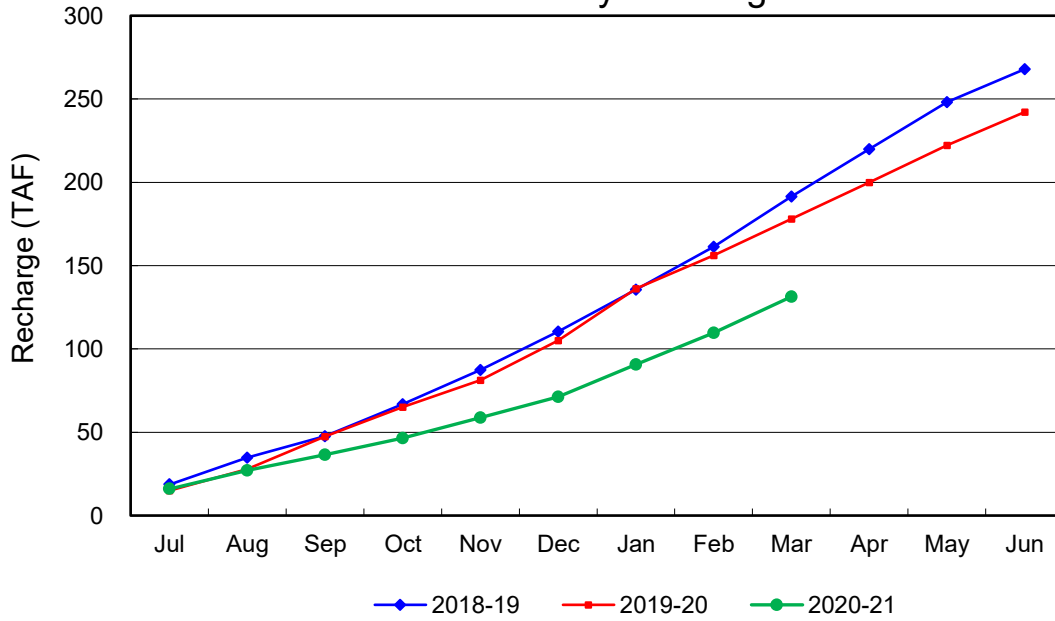
### Annual Groundwater Production



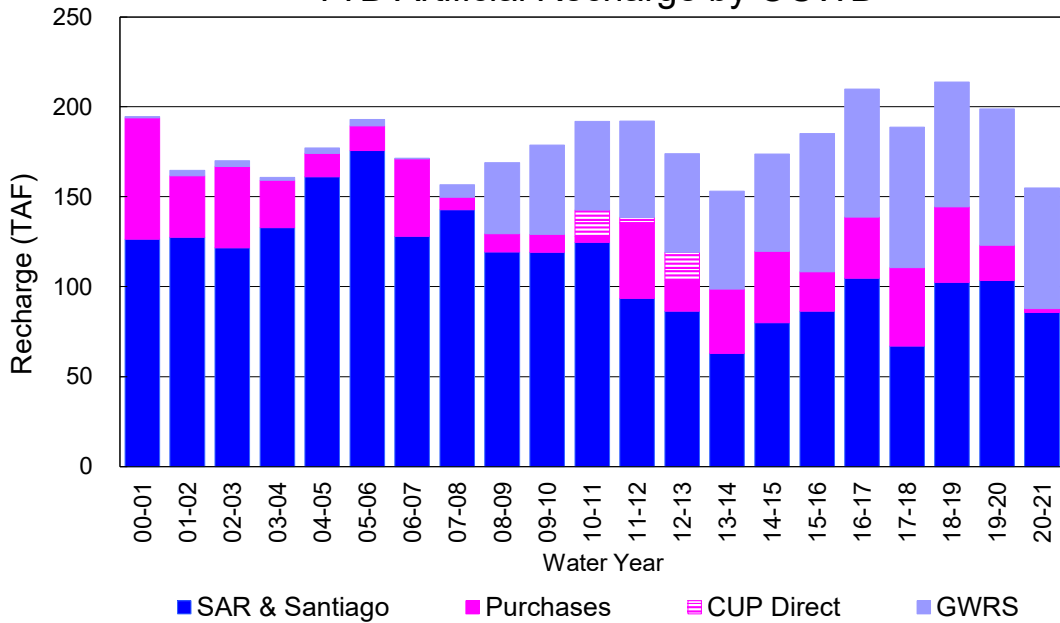
### YTD Total Demand in OCWD



### Annual Forebay Recharge



### YTD Artificial Recharge by OCWD



## RECHARGE AREAS REPORT

March 2021

	Percolation (AF)	Remarks
RIVER SYSTEM	4,889	80 cfs per day average
DESILTING SYSTEM	na	SAR
OFF-RIVER SYSTEM	998	
WARNER SYSTEM	561	SAR
OLIVE BASIN	na	Passive System
ANAHEIM LAKE	2,689	SAR
MINI-ANA LAKE	222	
MILLER BASIN	1,903	SAR
KRAEMER BASIN	2,455	SAR
LA PALMA BASIN	4,383	GWRS
MIRA LOMA	1,324	GWRS
LA JOLLA BASIN	149	Cleaned, SAR
PLACENTIA BASIN	na	
RAYMOND BASIN	201	SAR
FIVE COVES BASIN	na	
BURRIS BASIN	922	SAR
RIVER VIEW BASIN	412	Cleaned
FLETCHER BASIN	20	
SANTIAGO BASINS	0	
SANTIAGO CREEK	556	
<b>TOTALS</b>	<b>21,684</b>	
<b>5-YR AVERAGE</b>	<b>24,358</b>	

FLOWS TO RECHARGE AREAS (AF)	
Imperial Headgates (estimated)	16,026
GWRS	5,725
OC-28 (MWD)	0
OC-28a (MWD)	0
OC-59	0
Est'd local Forebay inflow below Imperial	226
Est'd local Santiago inflow (estimated)	147
Irvine lake releases (OC-13 MWD)	0
Villa Park Dam releases (estimated)	0
Precip at Warner Basin (inches)	1.30
Precip direct to open water surfaces	76
<b>TOTAL INFLOW</b>	<b>22,200</b>

LOSSES FROM RECHARGE AREAS (AF)	
Est'd SAR flow past Chapman Ave.	100
Est'd Santiago Cr. flow to SAR	79
Est'd flows past Raymond Basin	0
Calc'd evap (inches) Estimated	3.68
Est'd evaporative losses	215
<b>TOTAL LOSSES</b>	<b>394</b>

STORAGE CHANGES (AF)			
Facility	Begin	End	Net
Deep basins	9,331	10,317	986
Santiago Pits	3,056	2,193	-863
River			0
Off-river			0
Irvine Lake			
<b>TOTAL</b>	<b>12,387</b>	<b>12,510</b>	<b>123</b>

SUMMARY (AF)	
TOTAL INFLOW	22,200
TOTAL LOSSES	394
STORAGE CHANGE	123
CALC'D PERCOLATION	21,684



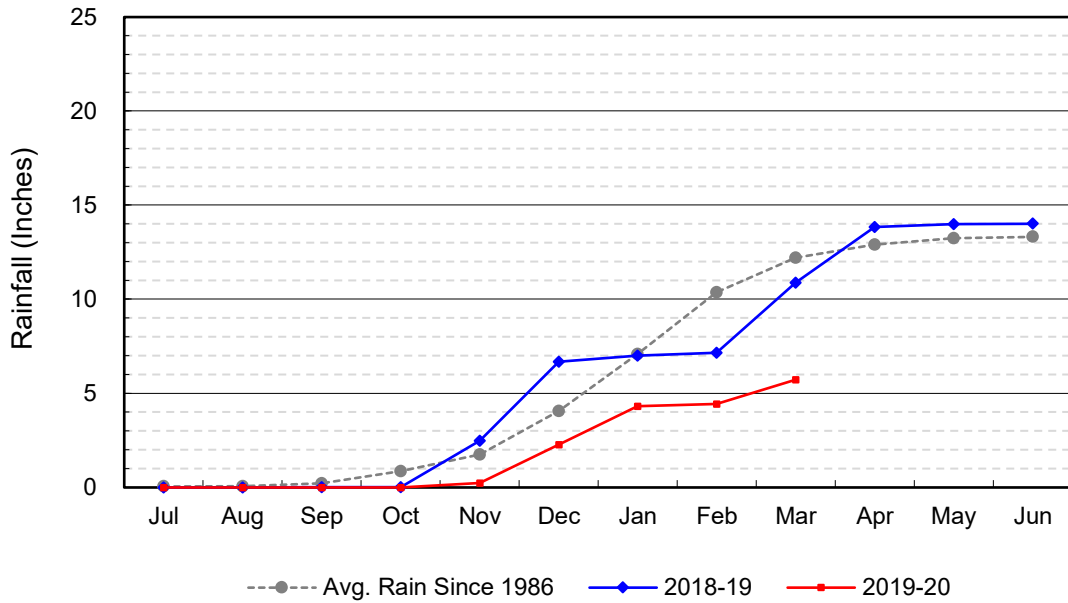
## DEEP BASINS MONTHLY STATUS

**March 2021**

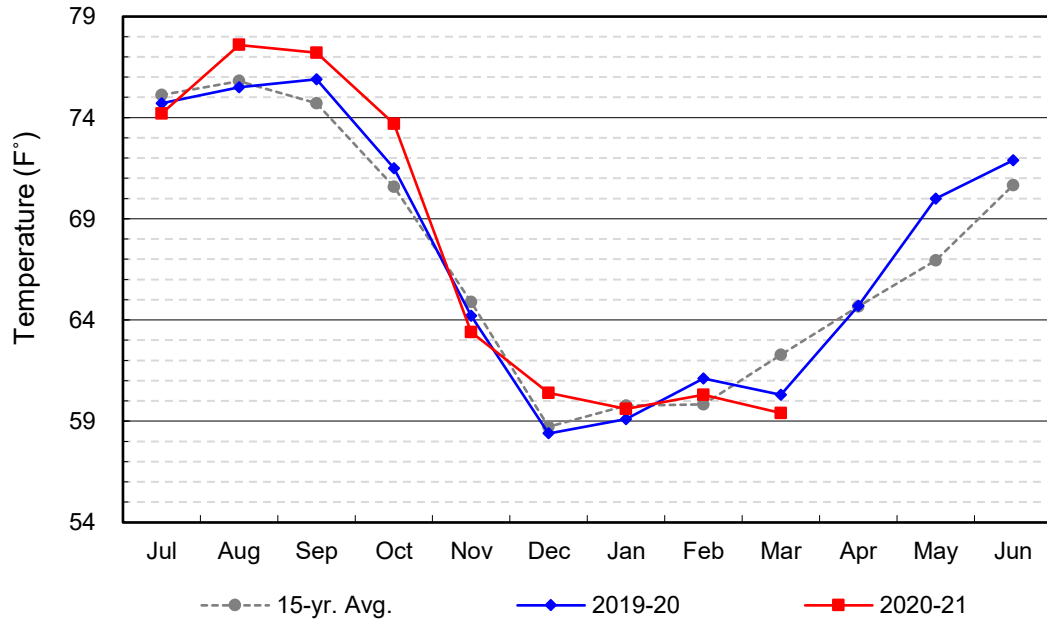
(values in acre-feet)

<i>Facility</i>	<i>Storage Start</i>	<i>Storage End</i>	<i>Maximum Storage</i>	<i>Total Perc</i>	<i>Max Perc</i>	<i>Avg Perc</i>	<i>Avg W.S. Elev</i>
Desilting Ponds	230	230	252	na	na	na	na
Fos-Huckleberry	564	570	628	na	na	na	na
Conrock Basin	598	605	661	na	na	na	na
Warner Basins	2,852	2,858	2,900	561	na	na	238
Olive Pit	32	50	95	na	na	na	210
Anaheim Lake	1,671	2,013	2,300	2,689	107	87	217
Mini-Anaheim Lk	8	7	10	222	11	7	224
Miller Basin	83	178	350	1,903	71	61	211
Kraemer Basin	392	797	1,055	2,455	108	79	201
La Palma Basin	85	89	101	4,383	154	141	219
Mira Loma	5	16	53	1,324	56	43	215
La Jolla Basin	18	7	20	149	30	5	199
Placentia Basin	0	0	200	na	0	0	na
Raymond Basin	75	75	200	201	na	na	na
Five Coves Basins	214	316	329	na	0	0	na
Burris Pit	2,501	2,506	2,500	922	34	30	172
River View Basin	3	0	8	412	20	13	187
Fletcher Basin	0	0	15	20	4	1	185
Santiago (Bond)	2,175	1,313	8,312	0	0	0	194
Santiago (Blu Dia)	881	880	5,259	-	-	-	-
<b>Totals</b>	<b>12,387</b>	<b>12,510</b>	<b>25,247</b>	<b>15,241</b>			
Prado Dam	5,737	3,605	25,000				

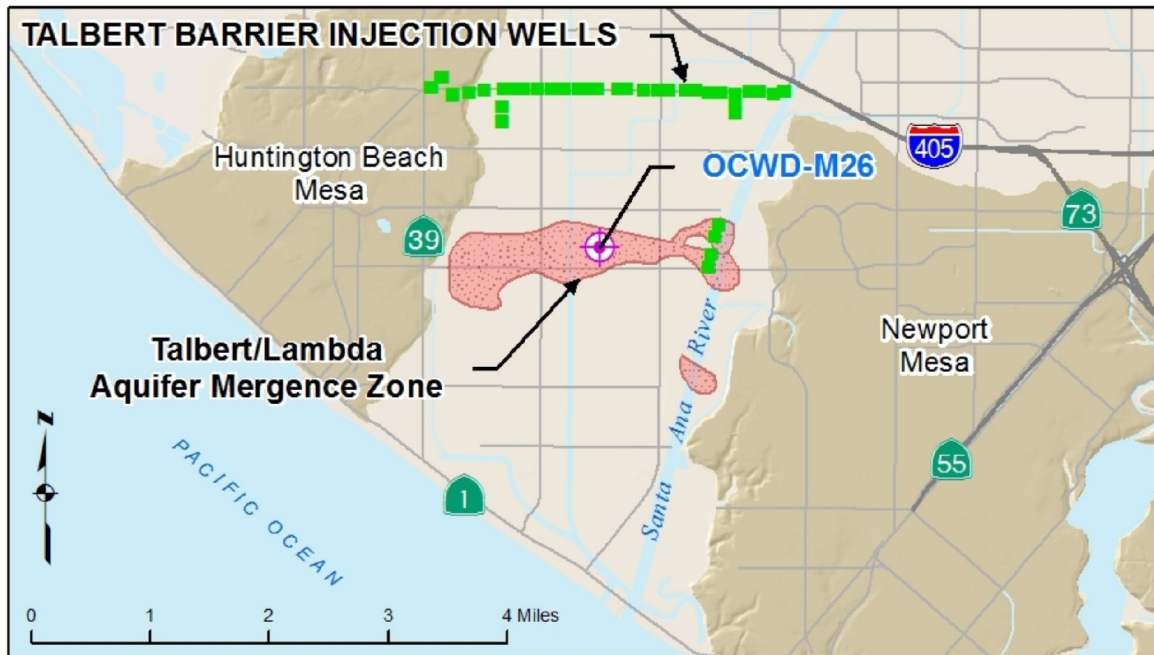
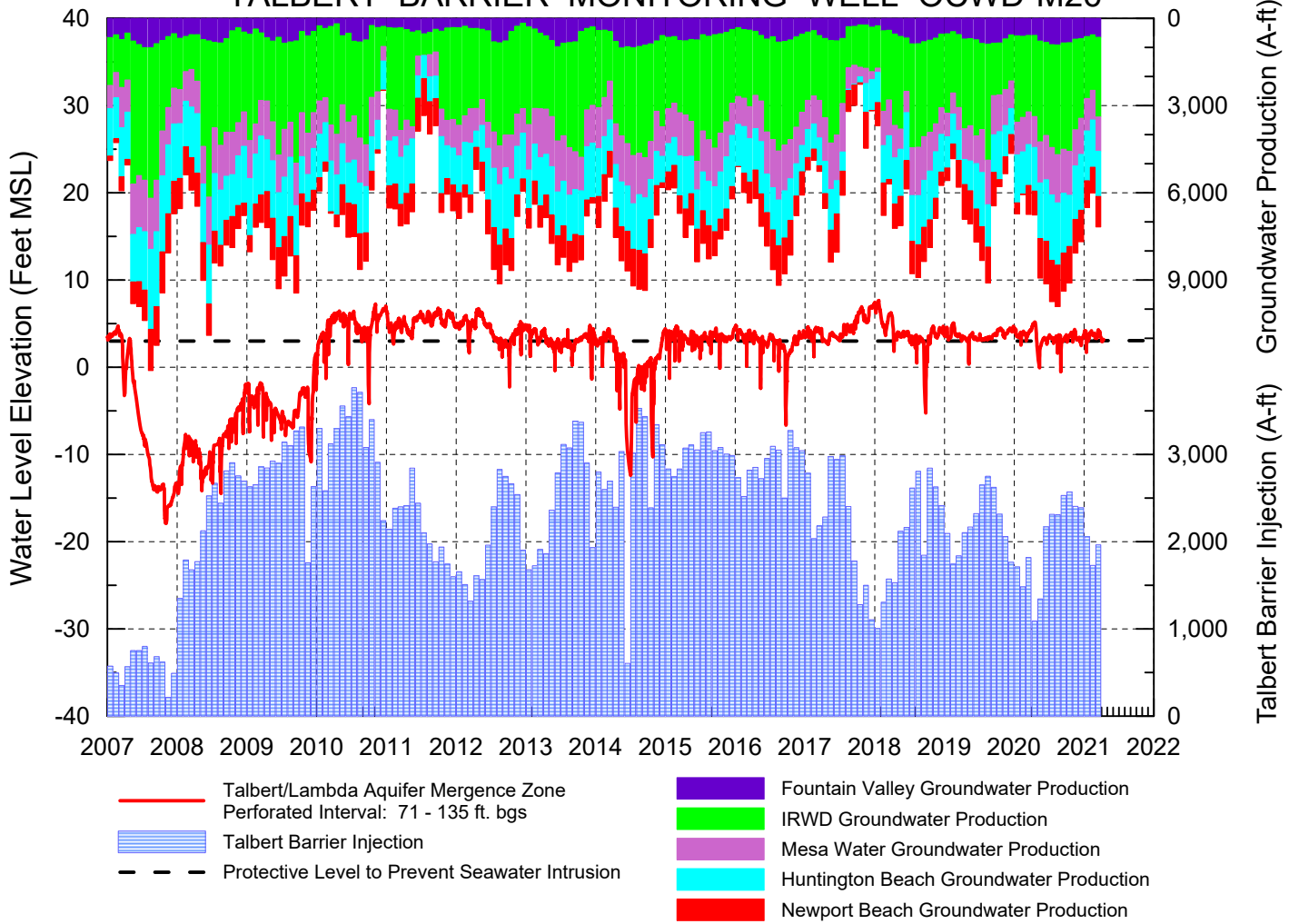
### Cumulative Anaheim Field HQ Rainfall

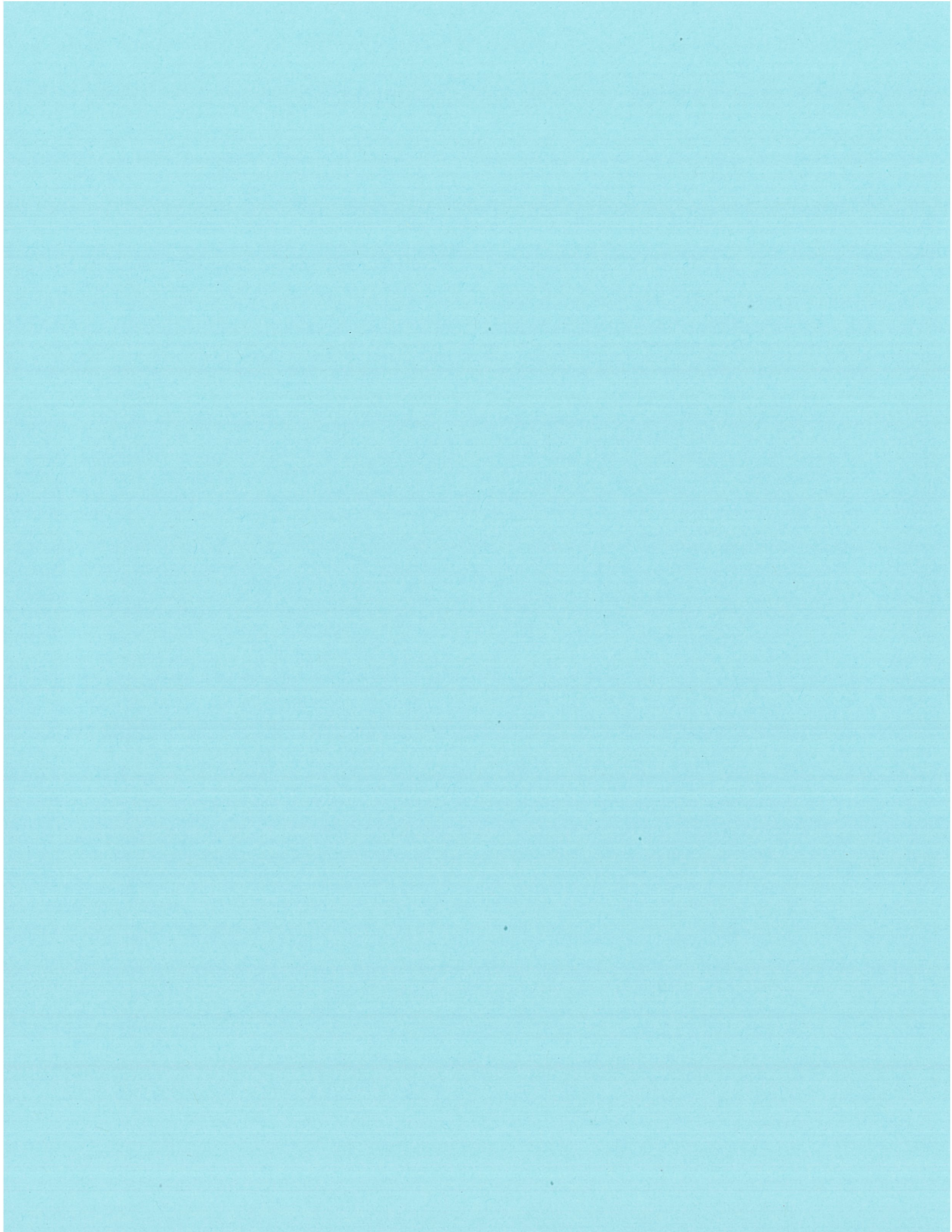


### Temperature at Santa Ana Fire Station



# TALBERT BARRIER MONITORING WELL OCWD-M26





# Executive Update

## Hydrologic Conditions in California (02/01/2019)

### Northern Sierra Precipitation Accumulation (1)

<b>Rainfall &amp; Snow Water Content (in inches)</b>	
Water Year Amount to Date (since Oct. 1, 2018):	26.10
Average to Date:	27.90
Percent of Average to Date:	94 %
Average for the Water Year (Oct. 1 through Sep. 30)	51.80
Percent of Average for the Water Year (Oct. 1 through Sep. 30)	50 %

(1) Northern Sierra (Sacramento, Feather, Yuba, and American River Basins)

### Snowpack Water Content

Region	Water Content (in inches)	% Avg to Date	% April 1 Avg (2)
Northern Sierra	18.00	100	63
Central Sierra	19.20	102	63
Southern Sierra	14.20	97	56
Statewide	17.50	100	61

(2) April 1 is the date of normal maximum accumulation for the season.

### Forecast of Regional Water Supply Indices (3)

Index	Value	Year Type
8 River Index for January (in 1000 AF)	2,860	n/a
Sacramento Valley Water Year Type Index (40-30-30) @ 50%	6.9	Below Normal
Sacramento Valley Water Year Type Index (40-30-30) @ 90%	6.0	Dry
San Joaquin Valley Water Year Type Index (60-20-20) @ 50%	3.0	Below Normal
San Joaquin Valley Water Year Type Index (60-20-20) @ 75%	2.8	Below Normal

(3) For more information see Sacramento & San Joaquin Valley Water Year Type Index forecast: [Latest](#) | [Previous](#)  
(Issued monthly from December 1 through May 1)

### Key Reservoir Storage As of 02/01/2019 midnight

Reservoir	River	Storage (in 1000 AF)	Avg Storage (in 1000 AF)	% Average	Capacity (in 1000 AF)	% Capacity	Flood Control (4) Encroachment (in 1000 AF)
Trinity Lake	Trinity	1,590	1,733	92	2,448	65	---
Shasta Lake	Sacramento	2,925	3,081	95	4,552	64	-774
Lake Oroville	Feather	1,413	2,323	61	3,538	40	-1,540
New Bullards Bar Res	Yuba	652	585	111	966	68	-144
Folsom Lake	American	526	509	103	977	54	-51
New Melones Res	Stanislaus	1,872	1,424	131	2,400	78	-98
Don Pedro Res	Tuolumne	1,501	1,393	108	2,030	74	-189
Lake McClure	Merced	614	491	125	1,025	60	-61
Millerton Lake	San Joaquin	320	334	96	520	61	-115
Pine Flat Res	Kings	386	472	82	1,000	39	-357
Isabella	Kern	77	173	44	568	14	-115
San Luis Res	(Offstream)	1,750	1,612	109	2,041	86	---

(4) Temporary encroachment into seasonally reserved flood storage space; requirements can vary considerably on a daily basis due to numerous variables: rainfall amounts, anticipated snowmelt, time of year, soil moisture, etc.

### Daily Precipitation (in inches) for Selected Stations as of 02/01/2019

Station	Oct 1 to Date 2018 - 2019	% Average	Season to Date 2017 - 2018	% Average	% Average Oct 1 - Sep 30
Mount Shasta	19.30	85	9.69	43	44
Eureka	16.22	72	18.60	82	40
Redding	17.07	90	10.51	55	49
South Lake Tahoe	8.47	79	8.19	77	42
Sacramento Executive Airport	9.01	90	7.09	71	49
Santa Rosa (Sonoma Co AP)	17.88	85	12.43	59	49
San Francisco	11.09	82	8.50	63	47
Stockton	7.89	104	3.99	53	56
Yosemite	16.75	86	8.40	43	44
Monterey	8.38	100	5.23	62	52
Paso Robles	6.74	104	2.31	36	53
Fresno	4.48	78	1.64	29	39
Bakersfield	2.37	75	1.10	35	37
Death Valley	0.58	60	0.47	49	25
Los Angeles	10.18	140	1.86	26	68
Riverside	5.82	100	1.58	27	47
Palm Springs	2.96	103	1.45	51	52
San Diego	7.20	140	1.87	36	70

### Updated Information and Data

- [Hydrologic Regional Summary \(table & map\) as of 1st of month \(Feb - May\)](#)
- [Daily Statewide Hydrologic Update\(Interactive\)](#)
- [Forecast of April to July Unimpaired Runoff as of 1st of Month \(Feb - May\)](#)
- [Weekly Update to Unimpaired Runoff Forecast \(Feb - Jun\)](#)
- [Unimpaired Forecast Discussion \(Weekly/Monthly, Dec - June\)](#)
- [Bulletin 120, Water Conditions in California \(Monthly, Feb - May\)](#)

**Statewide Hydrologic Conditions (As of February 1, 2019)**

As of February 1, 2019, statewide hydrologic conditions were as follows: precipitation, 96 percent of average to date; runoff, 68 percent of average to date; and reservoir storage, 100 percent of average to date.

**Unimpaired Runoff**

<http://cdec.water.ca.gov/reportapp/javareports?name=FLOWOUT>

**Northern Sierra 8-Station Precipitation Index**

[http://cdec.water.ca.gov/cgi-progs/products/PLOT\\_ESI.pdf](http://cdec.water.ca.gov/cgi-progs/products/PLOT_ESI.pdf)

**San Joaquin 5-Station Precipitation Index**

[http://cdec.water.ca.gov/cgi-progs/products/PLOT\\_FSI.pdf](http://cdec.water.ca.gov/cgi-progs/products/PLOT_FSI.pdf)

**Tulare Basin 6-Station Precipitation Index**

[http://cdec.water.ca.gov/cgi-progs/products/PLOT\\_TSI.pdf](http://cdec.water.ca.gov/cgi-progs/products/PLOT_TSI.pdf)

**Long-Range Weather Forecast**

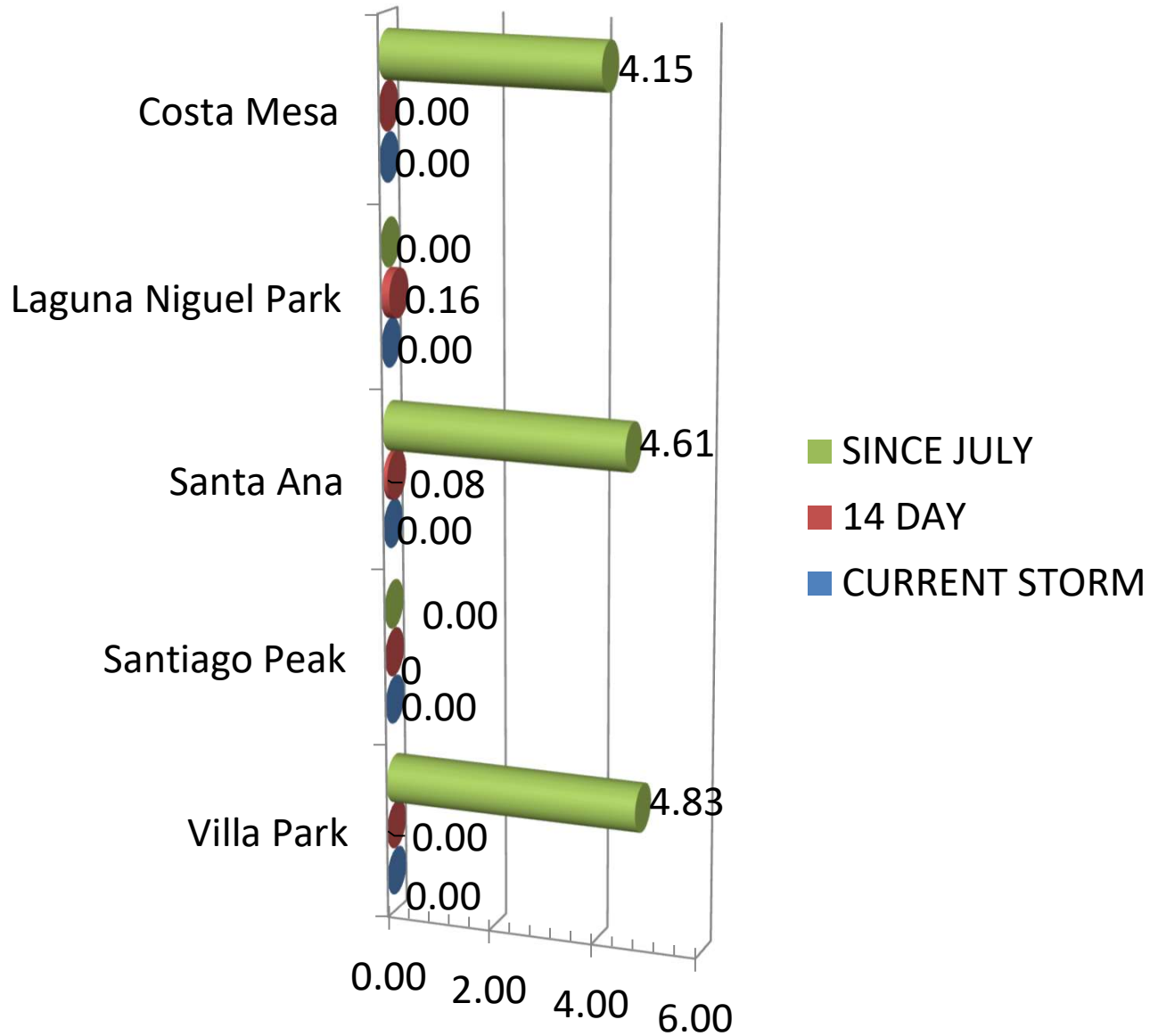
The latest National Weather Service Climate Prediction Center (CPC) long-range, 1-month precipitation outlook for February 2019, issued January 31, 2019, suggests above normal precipitation for Southern California and normal precipitation for Northern California.

**Next Update**

This product is updated mid-month, for conditions at the beginning of the month. The next update will be about March 15, 2019, for conditions on March 1, 2019.

# Orange County Rainfall Report

April 29, 2021

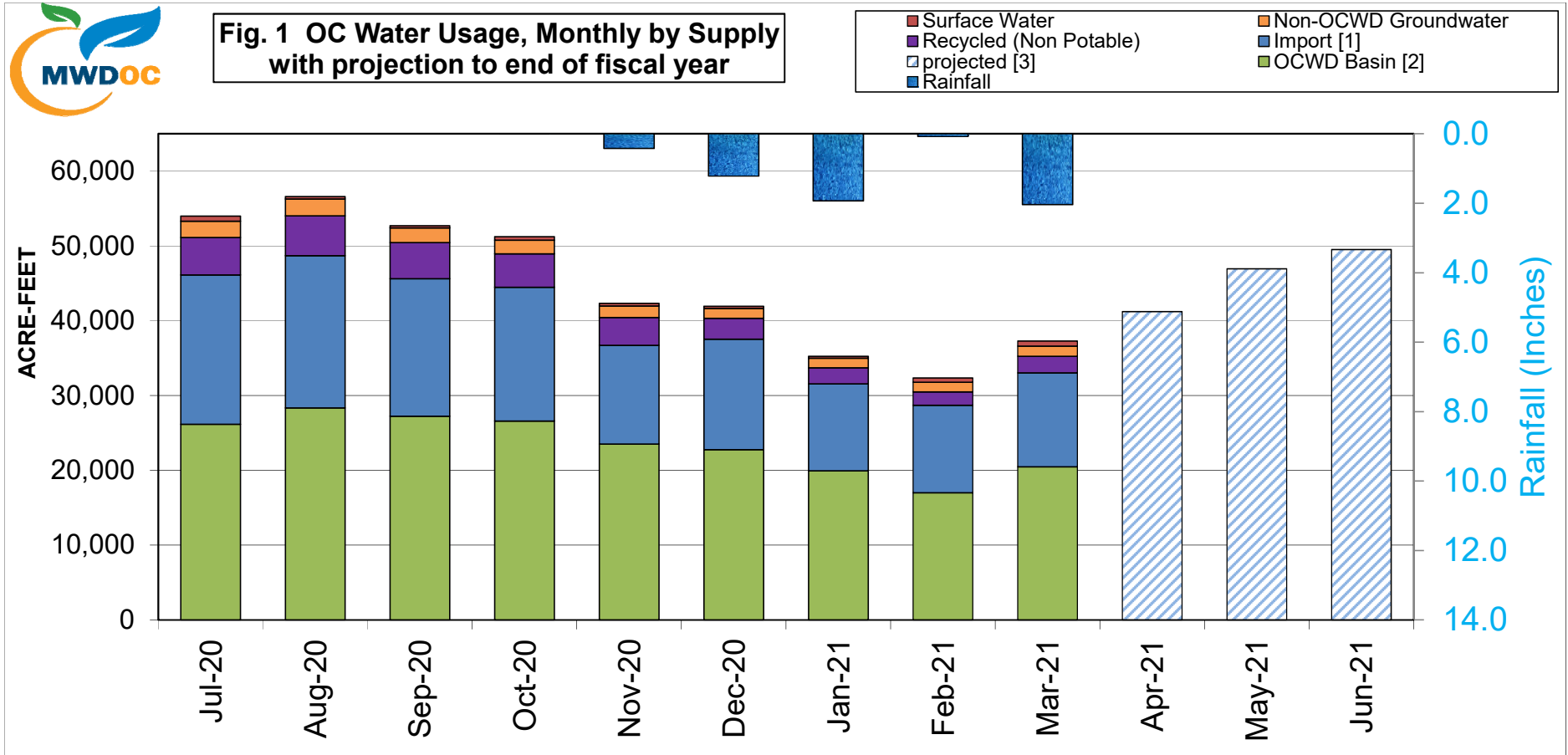


# **MWDOC WATER SUPPLY DATA**





**Fig. 1 OC Water Usage, Monthly by Supply with projection to end of fiscal year**



[1] Imported water for consumptive use. Includes "In-Lieu" deliveries and CUP water extraction. Excludes "Direct Replenishment" deliveries of spreading water and deliveries into Irvine Lake.

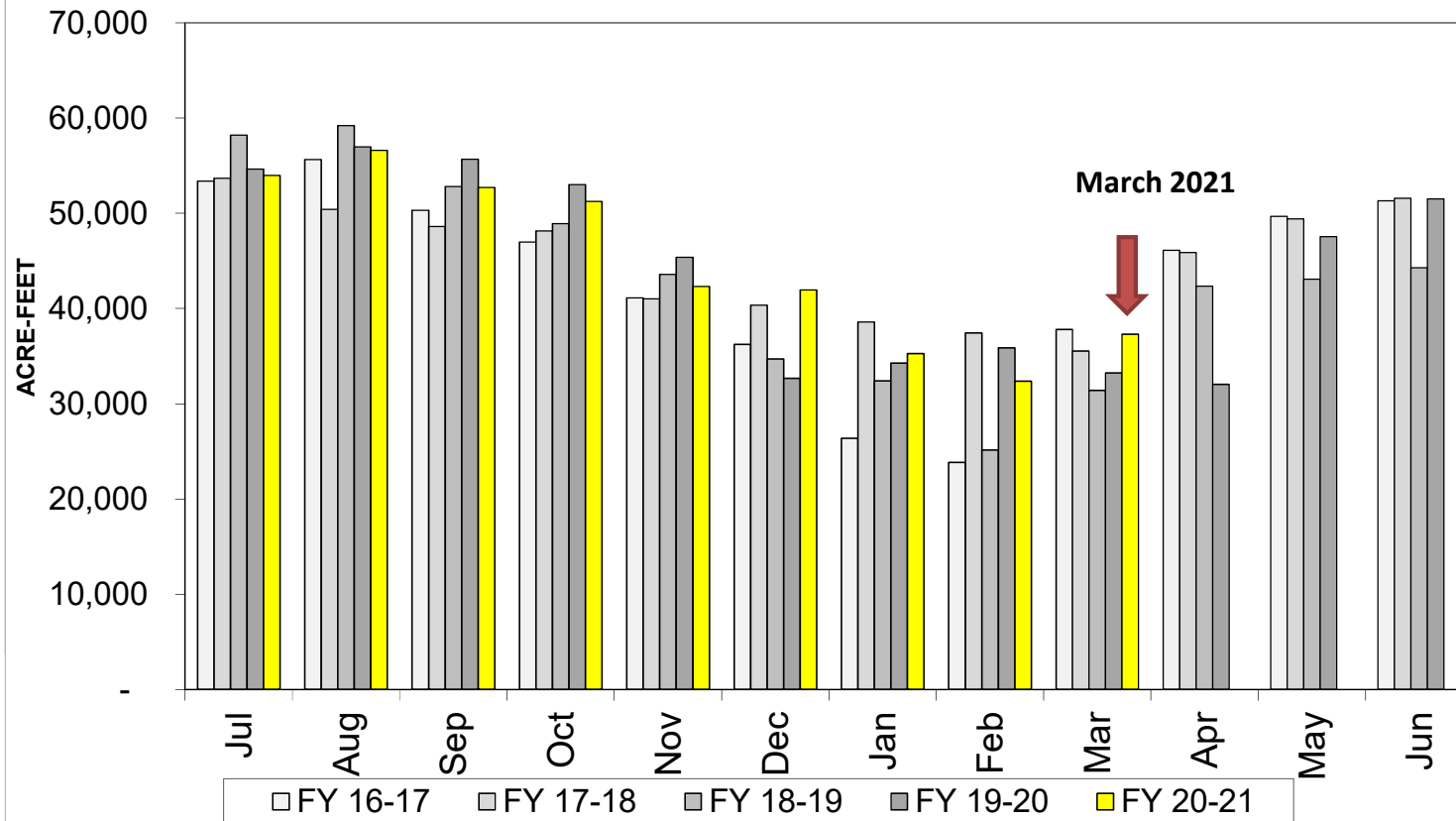
[2] GW for consumptive use only. Excludes In-Lieu water deliveries and CUP water extraction that are counted with Import. BPP in FY '20-21 is 77%.

[3] MWD OC's estimate of monthly demand is based on the projected 5 Year historical retail water demand and historical monthly demand patterns.

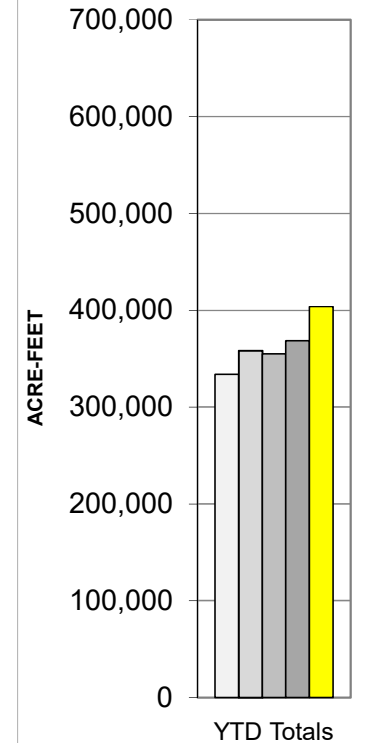
[4] Total water usage includes IRWD groundwater agricultural use and usage by non-retail water agencies.



**Fig. 2 OC Monthly Water Usage [1]: Comparison to Last 4 Fiscal Years**

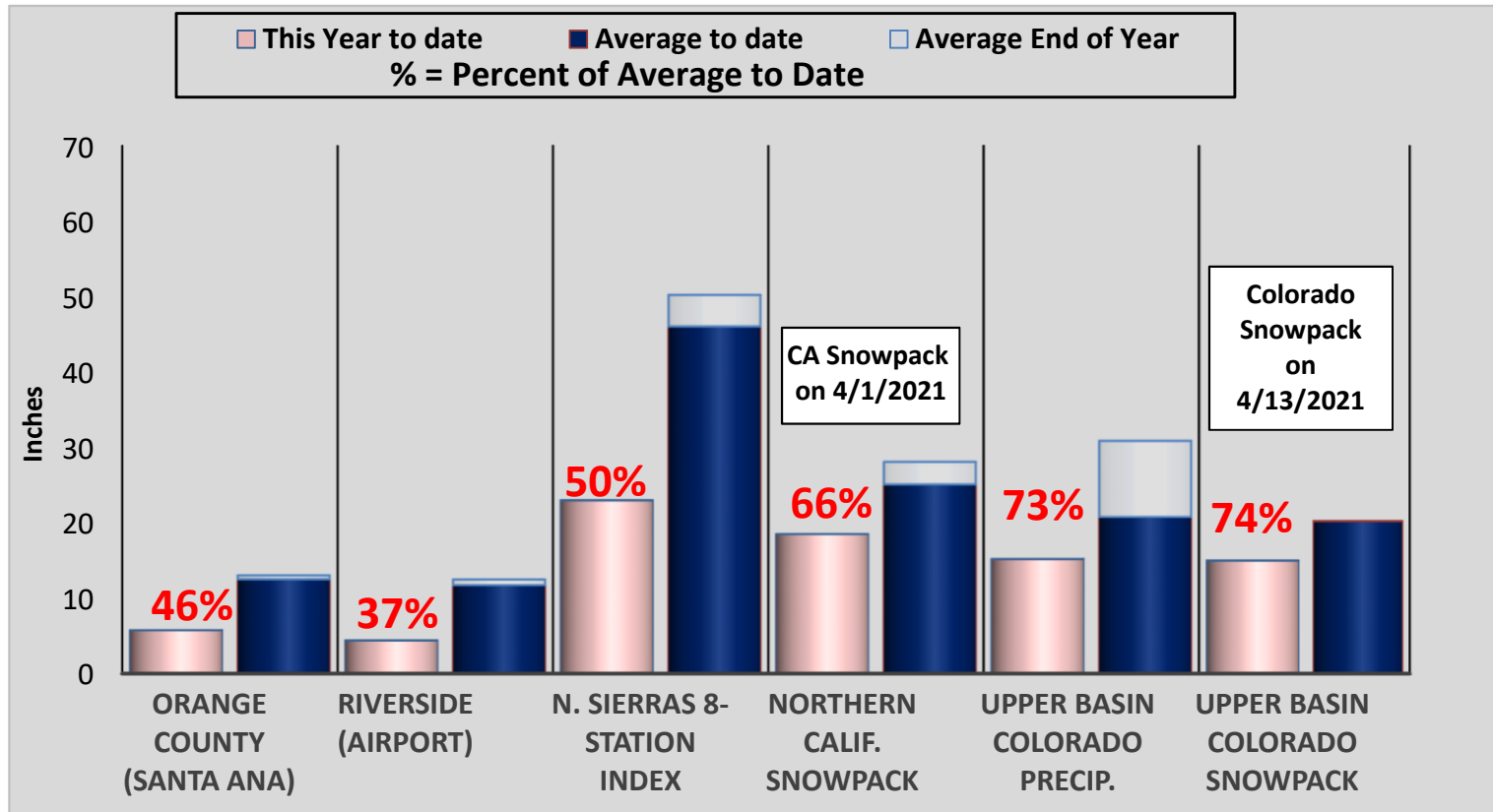


**Partial Year Subtotals**



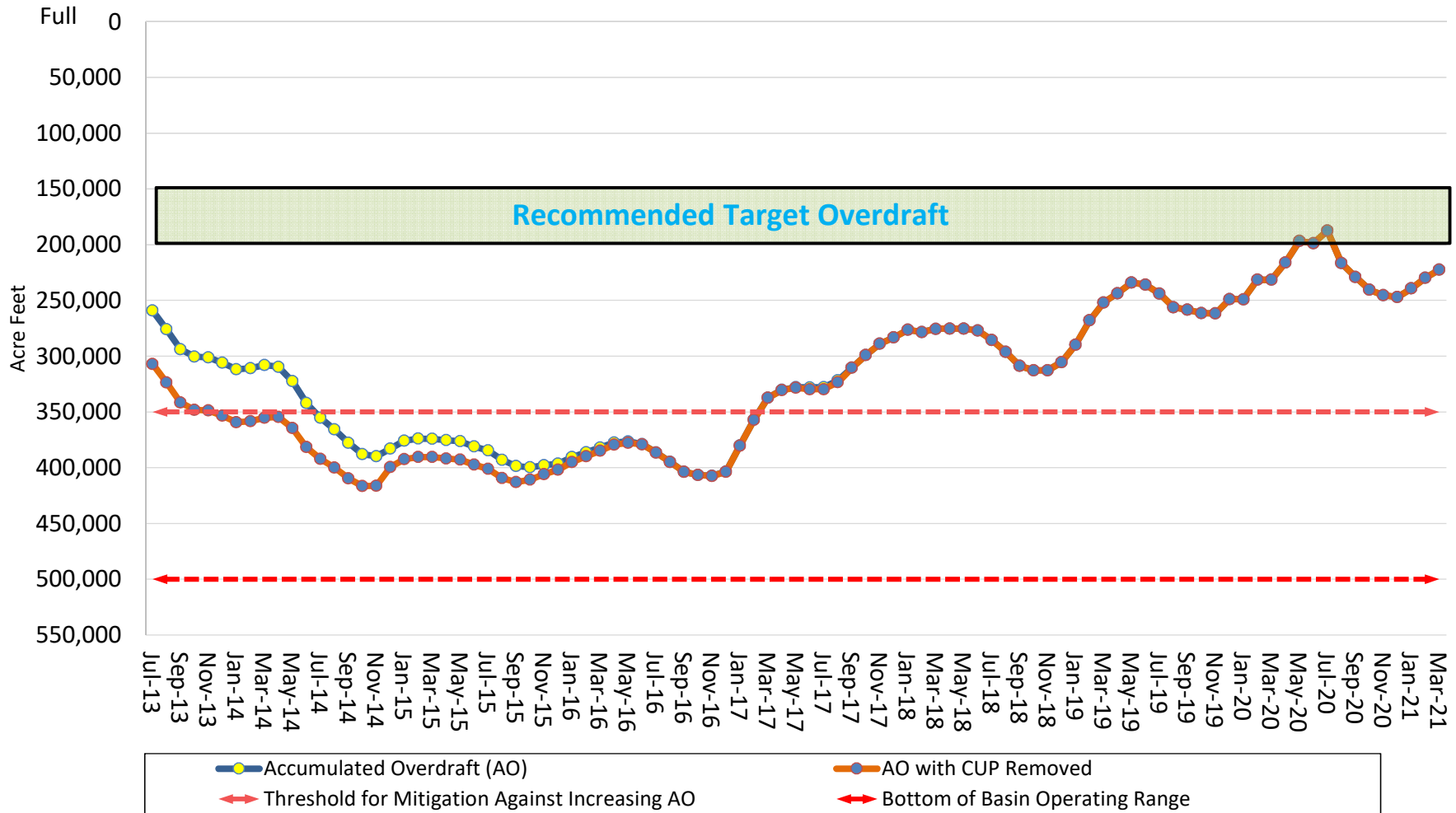
[1] Sum of Imported water for consumptive use (includes "In-Lieu" deliveries; excludes "Direct Replenishment" and "Barrier Replenishment") and Local water for consumptive use (includes recycled and non-potable water and excludes GWRS production) Recent months numbers include some estimation.

## Accumulated Precipitation for the Oct.-Sep. water year, early May 2021



\* The date of maximum snowpack accumulation (April 1st in Northern Calif. , April 15th in the Upper Colorado Basin) is used for year to year comparison.

## Accumulated Overdraft of the OCWD Groundwater Basin as of March 2021



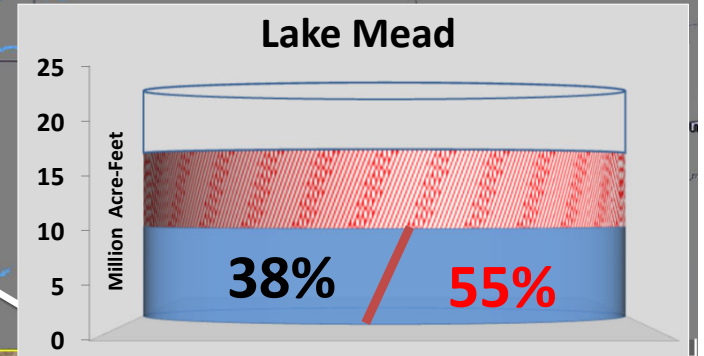
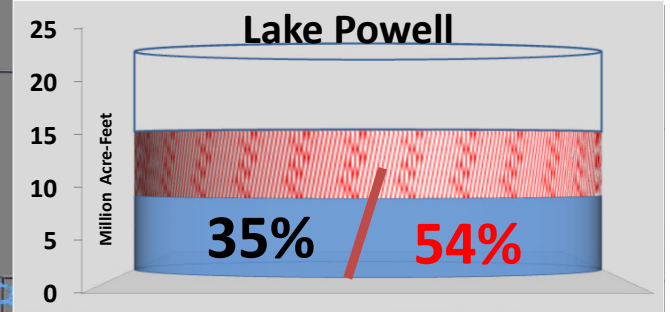
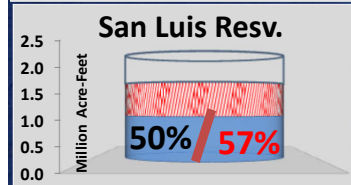
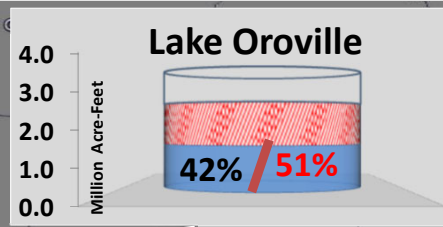
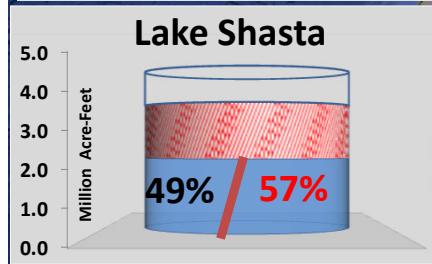
	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
AO (AF)	244,057	256,239	258,445	261,464	261,645	248,909	249,051	231,354	231,354	216,098	196,677	198,754
AO w/CUP removed (AF)	244,057	256,239	258,446	261,464	261,645	248,909	249,051	231,354	231,354	216,098	196,677	198,754
	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21
AO (AF)	187,392	216,548	229,124	240,414	245,441	246,998	239,329	229,738	222,470			
AO w/CUP removed (AF)	187,392	216,548	229,124	240,414	245,441	246,998	239,329	229,738	222,470			

\* Source ~ OCWD Monthly Board of Directors Packet, Water Resources Summary



# State Water Project, Colorado River, and MWD Reservoir Storage

as of May 3, 2021



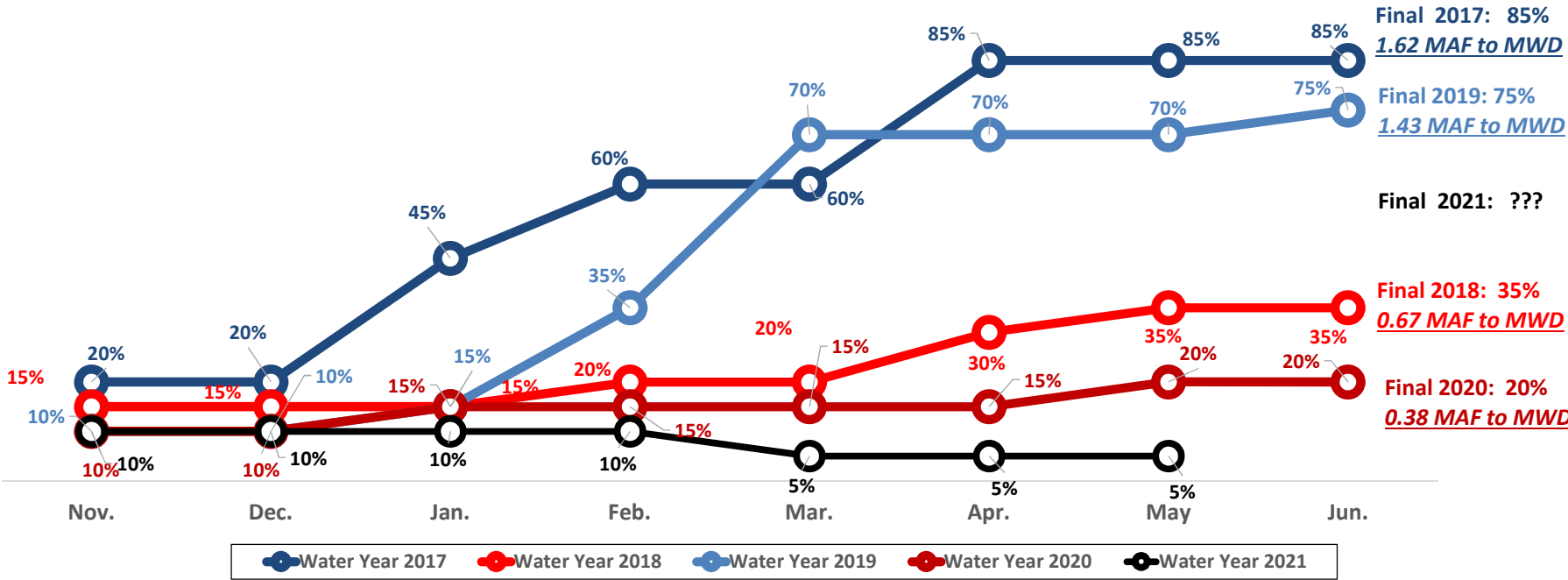
**% of Capacity** (Blue bar)  
**% of Historical Avg.** (Red and Green bars)



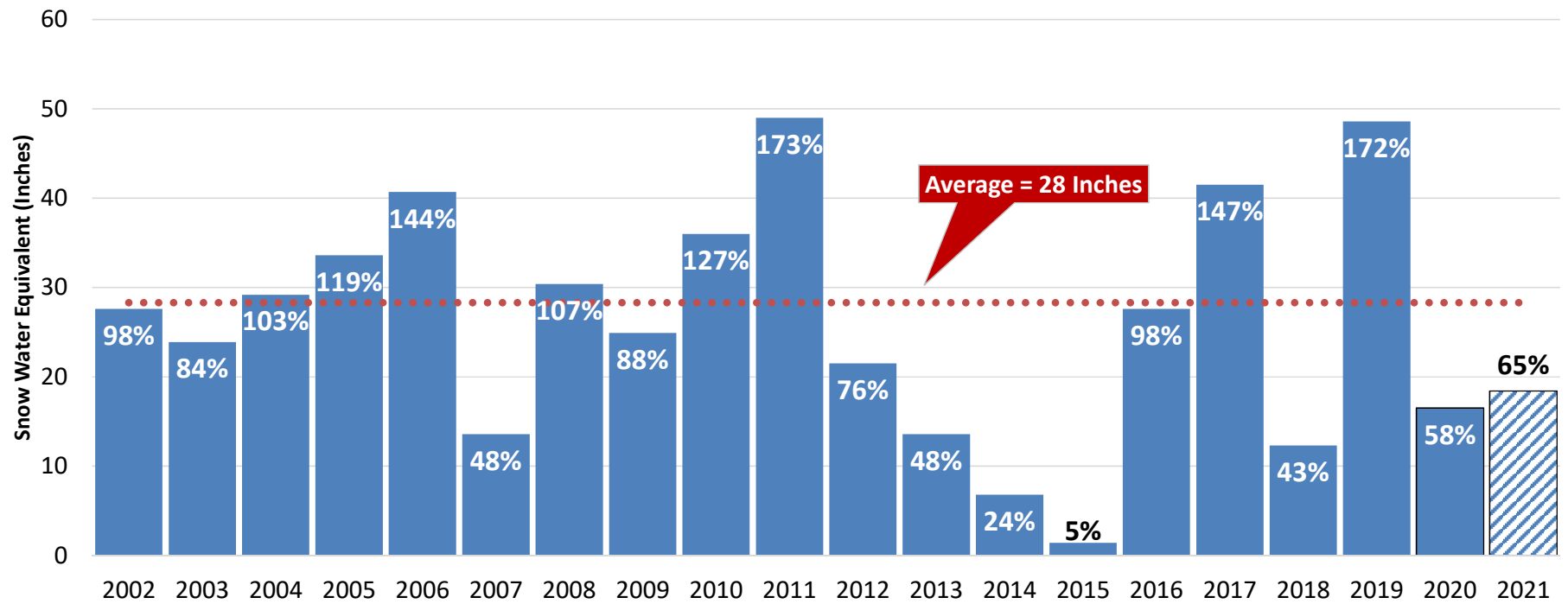
prepared by the Municipal Water District of Orange County  
\*Number are Subject to Change

# SWP TABLE A ALLOCATION

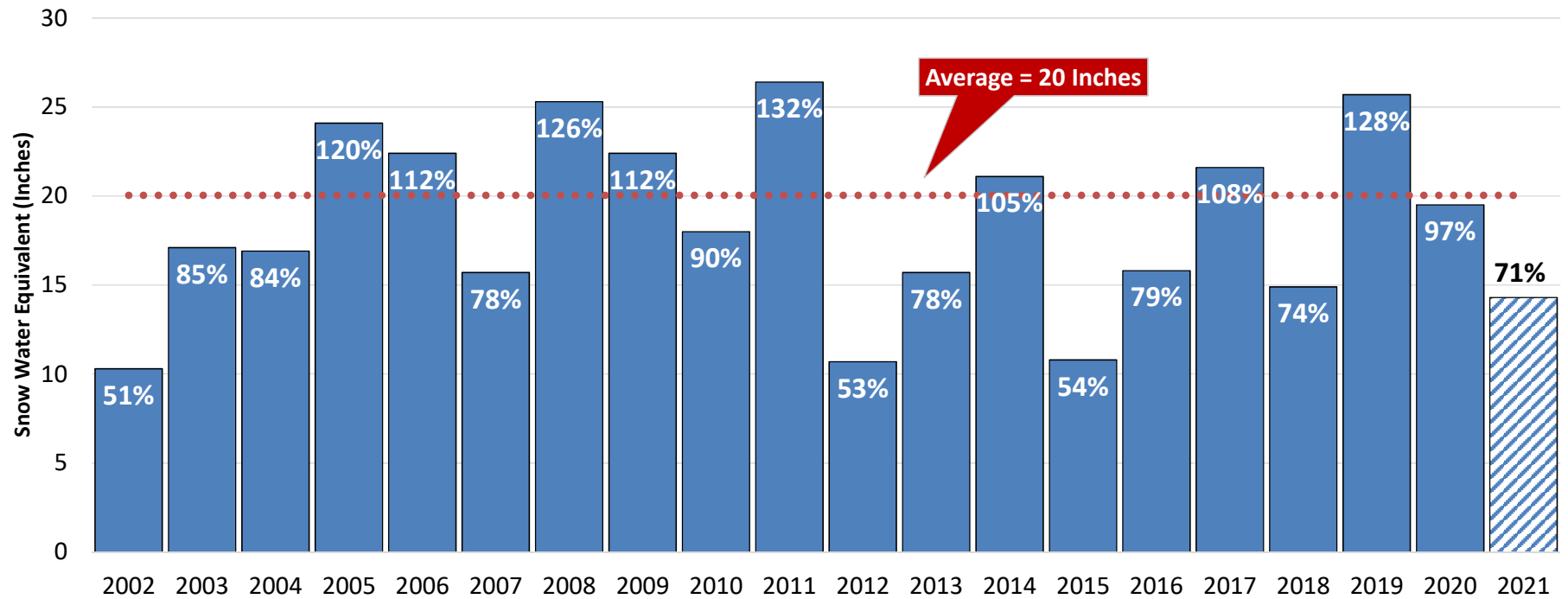
FOR STATE WATER PROJECT CONTRACTORS



### Historical Northern California April 1st Peak Snow Water Equivalent



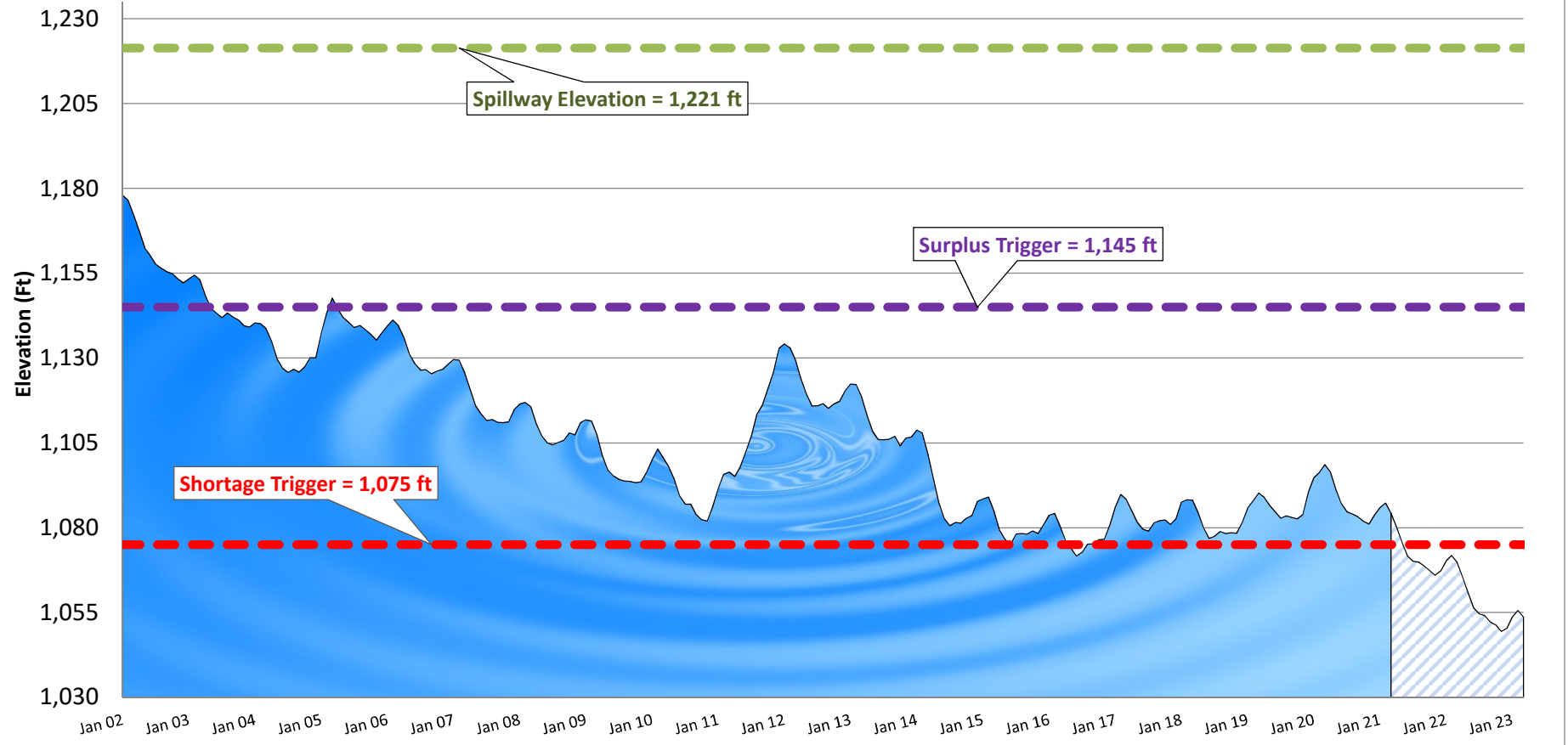
### Historical Colorado Basin April 15th Peak Snow Water Equivalent





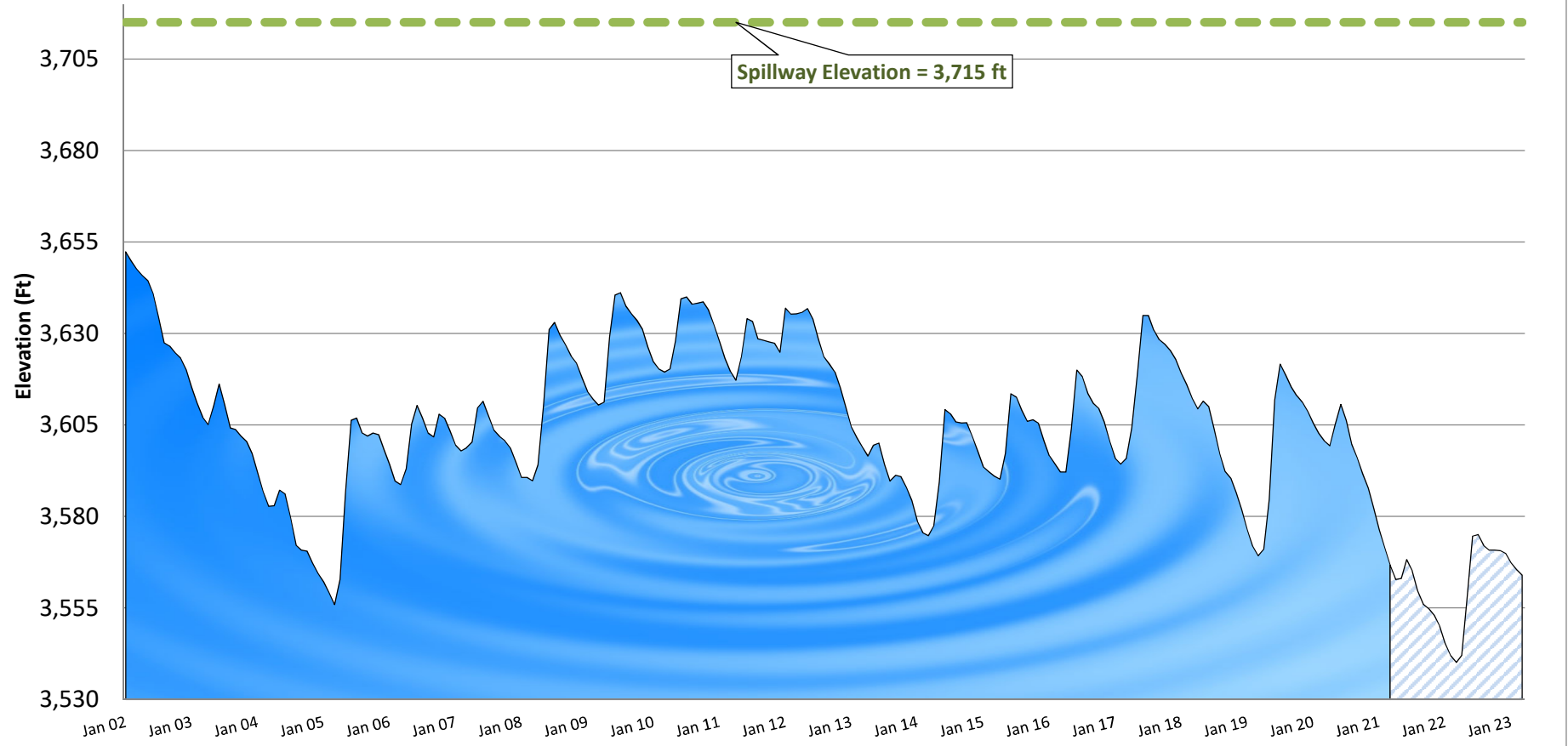
# Lake Mead Levels: Historical and Projected projection per USBR 24-Month Study

■ Historical    □ Projected



## Lake Powell Levels: Historical and Projected projection per USBR 24-Month Study

■ Historical □ Projected



## Lake Mead Historical Water Elevation Level



Intake Tower

Hoover Dam

