



Memorandum

DATE: August 10, 2018
TO: Member Agencies – MWDOC Divisions Two & Three
FROM: Larry Dick, Director – Division Two
Wayne S. Osborne, Director – Division Three
SUBJECT: Monthly Water Usage Data, Tier 2 Projection & Water Supply Information

The attached figures show the recent trend of water consumption in Orange County (OC), an estimate of Imported Water Sales for MWDOC, and selected water supply information.

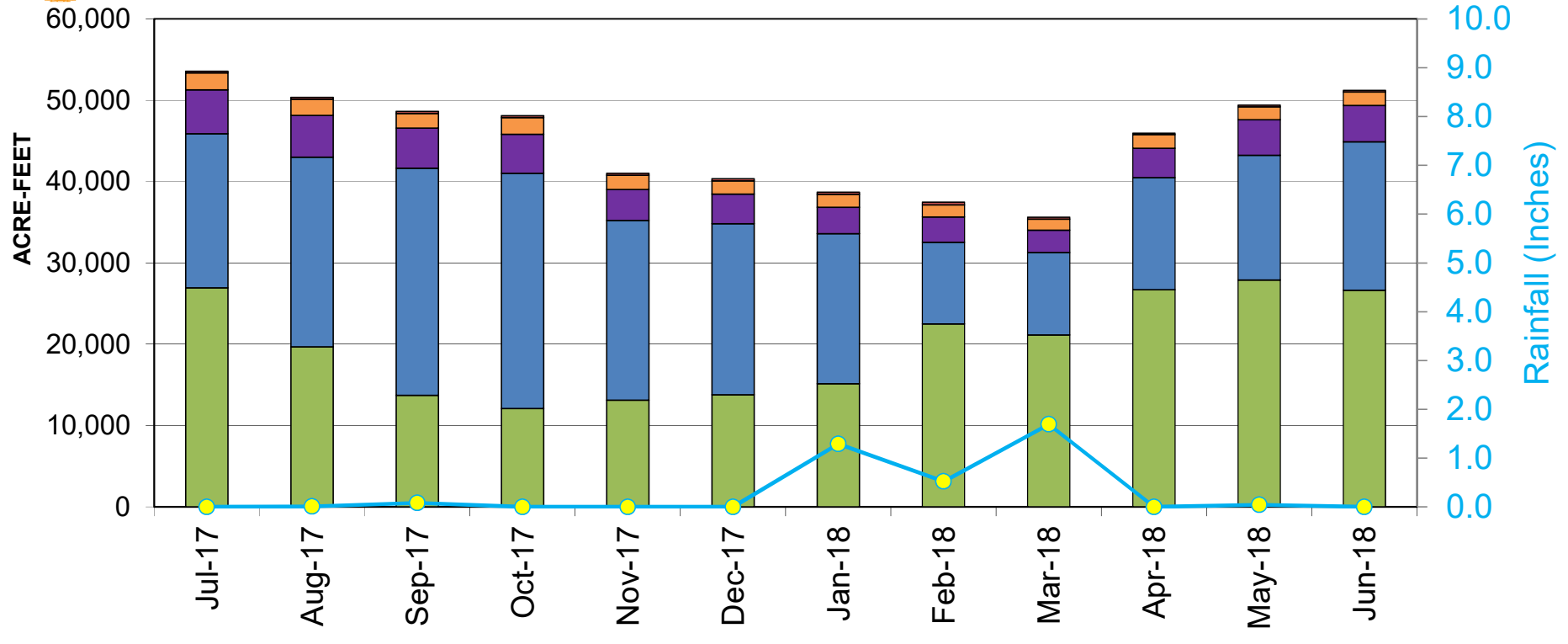
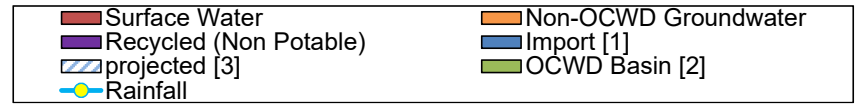
- OC Water Usage, Monthly by Supply OCWD Groundwater was the main supply in June.
- OC Water Usage, Monthly, Comparison to Previous Years Water usage in June 2018 was average compared to the last 5 years. We are seeing a slight increase in overall water usage compared to the previous two Fiscal Years. In June 2016, all water conservation became voluntary for MWDOC agencies and the Great California Drought was declared over by the Governor in April 2017.
- Historical OC Water Consumption Orange County M & I water consumption is estimated to be 540,000 AF in FY 2017-18 (*this includes ~15 TAF of agricultural usage and non-retail water agency usage*). This is about 21,000 AF more than FY 2016-17 and is about 48,000 AF more than FY 2015-16 (During the SWRCB mandatory water restrictions). Water usage per person is projected to be slightly higher than in FY 2017-18 for Orange County at 151 gallons per day (This includes recycled water). Although OC population has increased 20% over the past two decades, water usage has not increased, on average. A long-term decrease in per-capita water usage is attributed mostly to Water Use Efficiency (water conservation) efforts. O.C. Water Usage for the last three Fiscal Years is the lowest since the 1982-83 Fiscal Year (FY1982-83 was the third wettest year on record).

Water Supply Information Includes data on Rainfall in OC; the OCWD Basin overdraft; Northern California and Colorado River Basin hydrologic data; the State Water Project (SWP) Allocation, and regional storage volumes. The data have implications for the magnitude of supplies from the three watersheds that are the principal sources of water for OC. Note that a hydrologic year is Oct. 1st through Sept. 30th.

- Orange County's accumulated rainfall through late July was well below average for this period. Water year to date rainfall in Orange County is 3.66 inches which is 29% of normal.
- Northern California accumulated precipitation through late June was around 84% of normal for this period. Water Year 2017 was the wettest water year on record. The Northern California snowpack was 43% of normal as of April 1st. The State of California was in a declared Drought Emergency that started January 2014 and ended in April of 2017. As of late July, 44.73% of California is experiencing moderate or severe drought conditions while 86.18% of the state is experiencing abnormally dry conditions. The State Water Project Contractors Table A Allocation has increased to 35% as of late May.
- Colorado River Basin accumulated precipitation through late June was 70% average for this period. The Upper Colorado Basin snowpack was 71% of normal as of April 3. Lake Mead and Lake Powell combined have about 58% of their average storage volume for this time of year and are at 43.7% of their total capacity. If Lake Mead's level falls below a "trigger" limit 1,075 ft. at the end of a calendar year, then a shortage will be declared by the US Bureau of Reclamation (USBR), impacting Colorado River water deliveries to the Lower Basin states. As of late July, Lake Mead levels were 2.5' above the "trigger" limit. The USBR predicts that the start of 2019 will not hit the "trigger" level but there is a 52% chance that the trigger level will be hit in 2020 and a 64% chance in 2021.



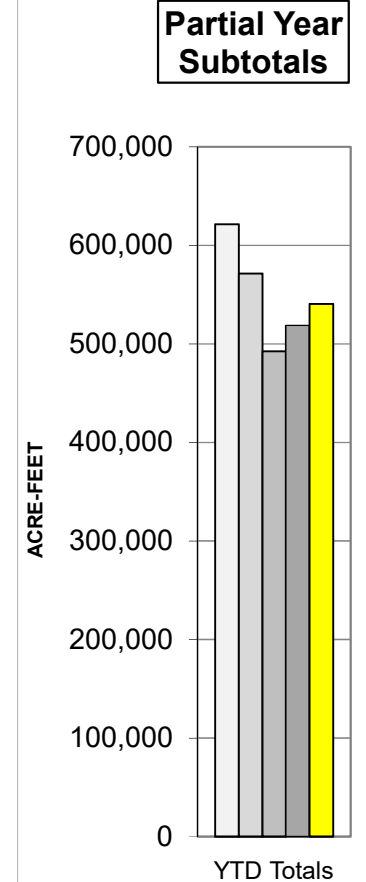
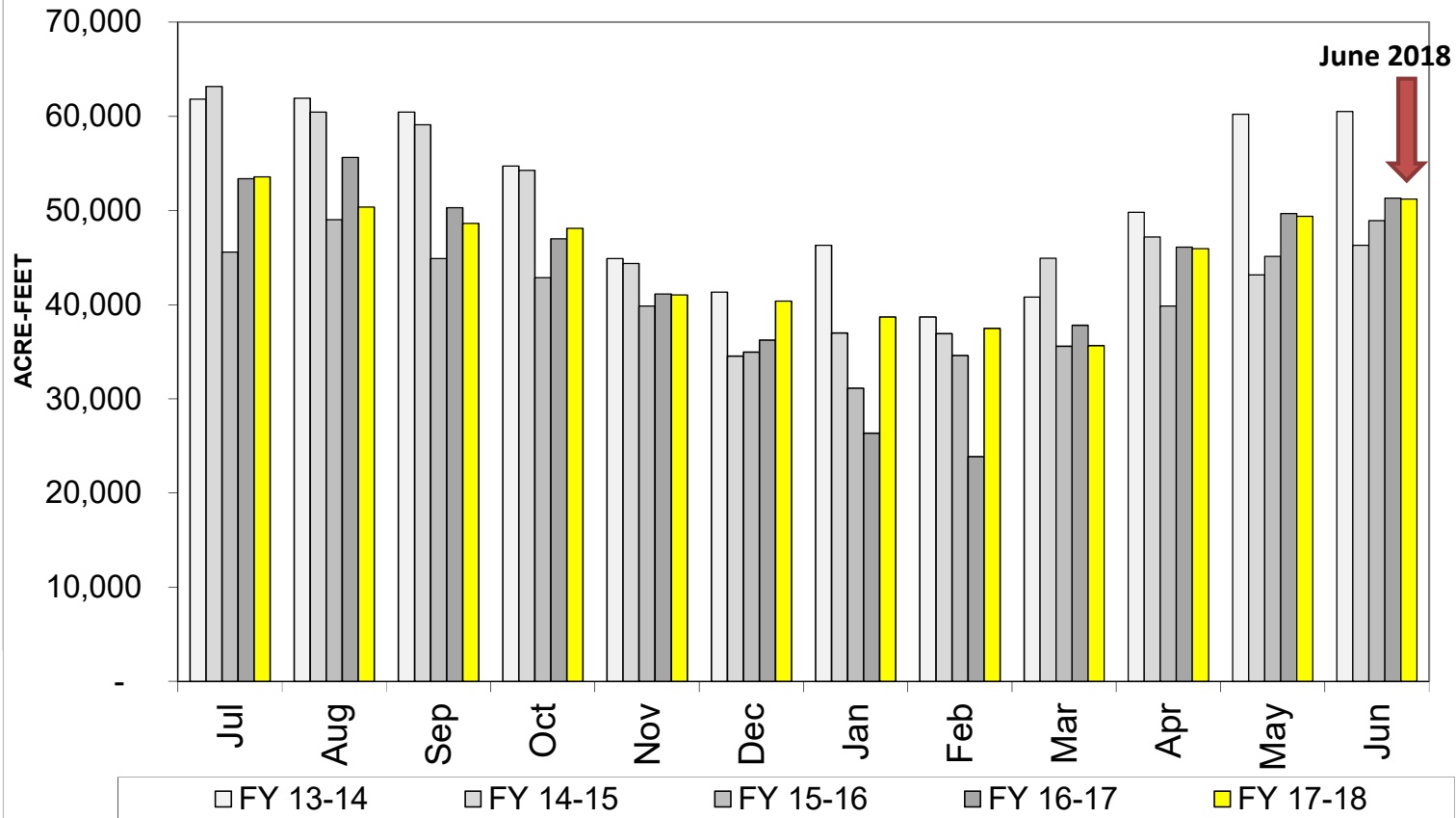
Fig. 1 OC Water Usage, Monthly by Supply with projection to end of fiscal year



- [1] Imported water for consumptive use. Includes "In-Lieu" deliveries and CUP water extraction. Excludes "Direct Replenishment" deliveries of spreading water, "Barrier Replenishment" deliveries, 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 '17-18 is 75%.
- [3] MWDOC's estimate of monthly demand is based on the projected FY 15-16 "Retail" water demand and historical monthly demand patterns.
- [4] Total water usage includes IRWD groundwater agricultural use and usage by non-retail water agencies.

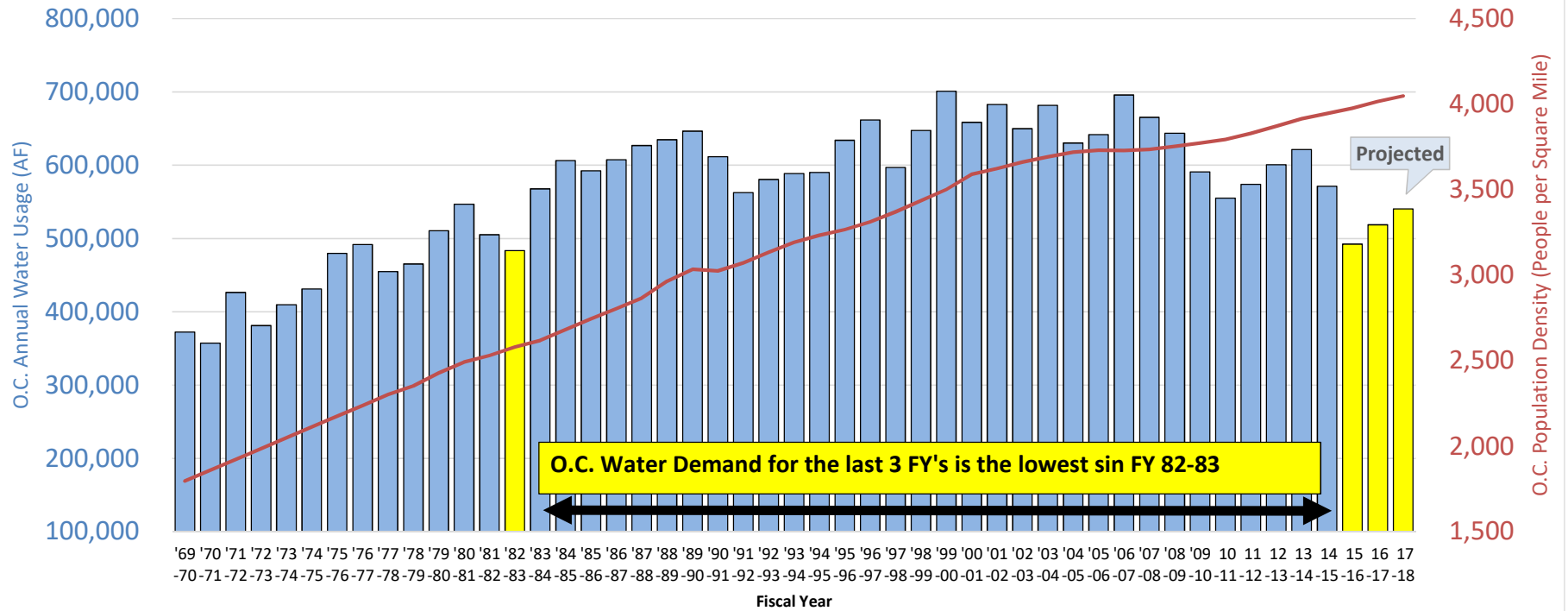


Fig. 2 OC Monthly Water Usage [1]: Comparison to Last 4 Fiscal Years

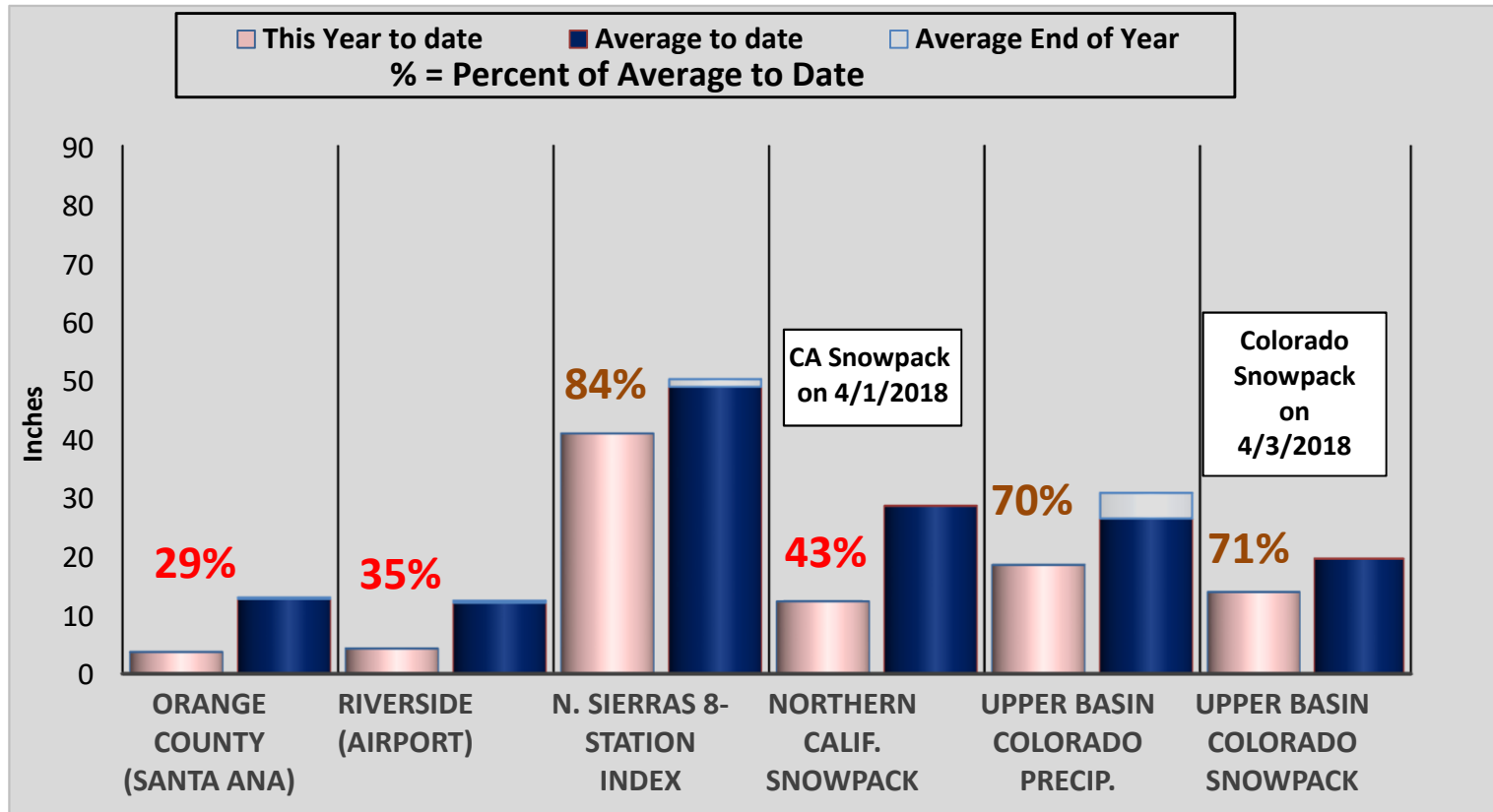


[1] Sum of Imported water for consumptive use (includes "In-Lieu" deliveries; excludes "Direct Replenishment" and "Barrier Replenishment") and Local water for consumptive use (includes recycled and non-potable water and excludes GWRS production) Recent months numbers include some estimation.

Orange County Annual M & I Water Usage

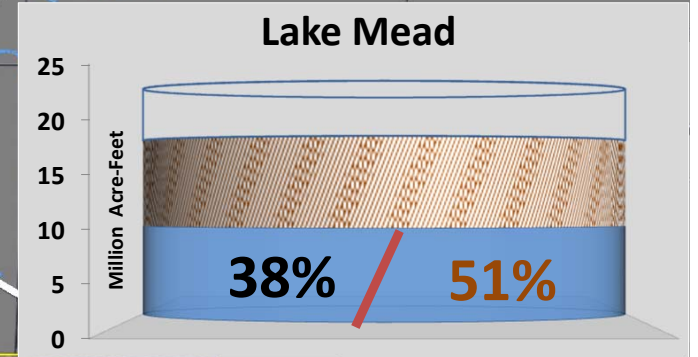
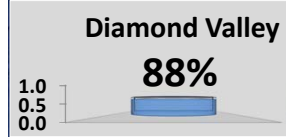
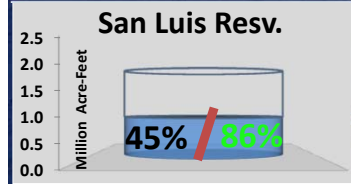
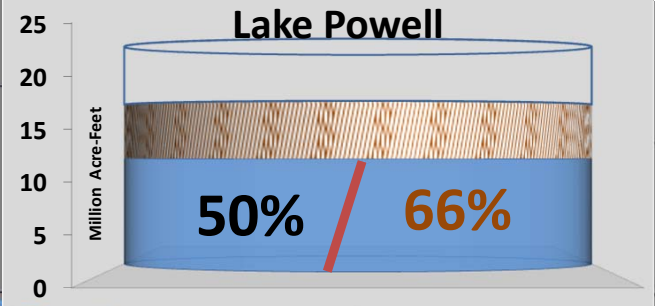
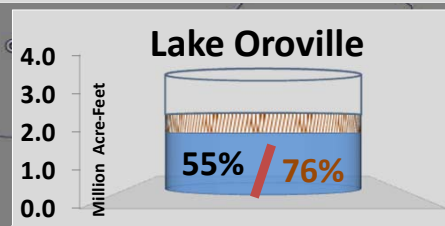
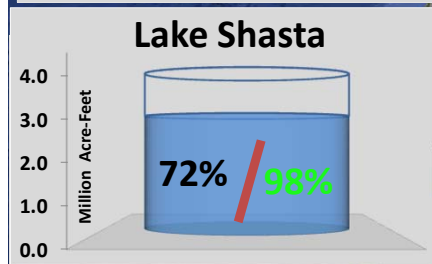


Accumulated Precipitation for the Oct.-Sep. water year, through late July 2018



* 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.

State Water Project, Colorado River, and MWD Reservoir Storage
as of July 30, 2018



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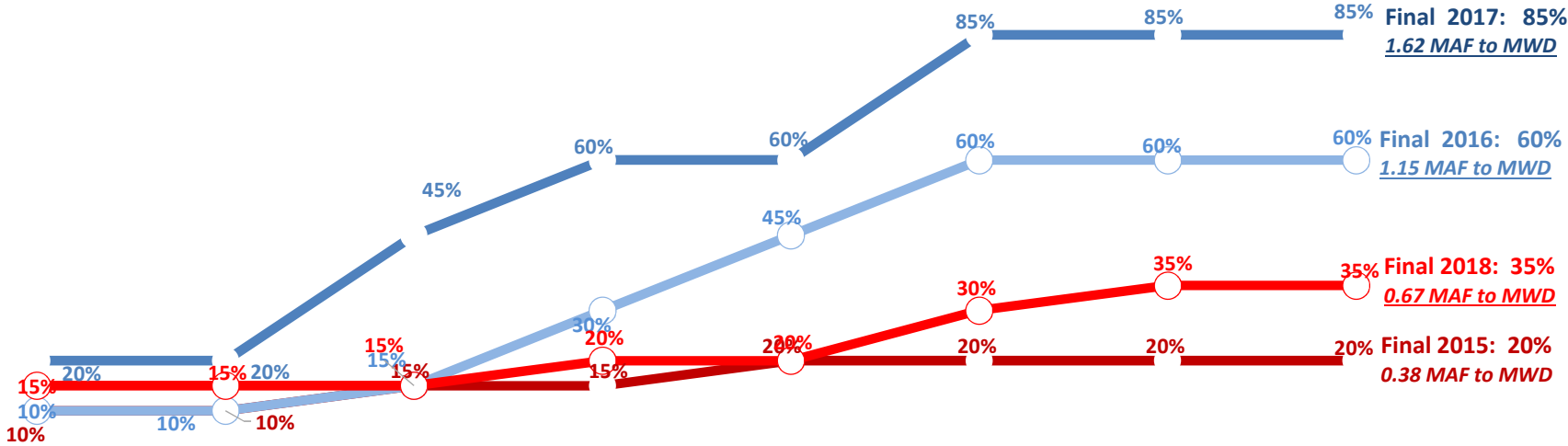


prepared by the Municipal Water District of Orange County
*Number are Subject to Change

SWP TABLE A ALLOCATION

FOR STATE WATER PROJECT CONTRACTORS

Final 2019: ???



Final 2017: 85%
1.62 MAF to MWD

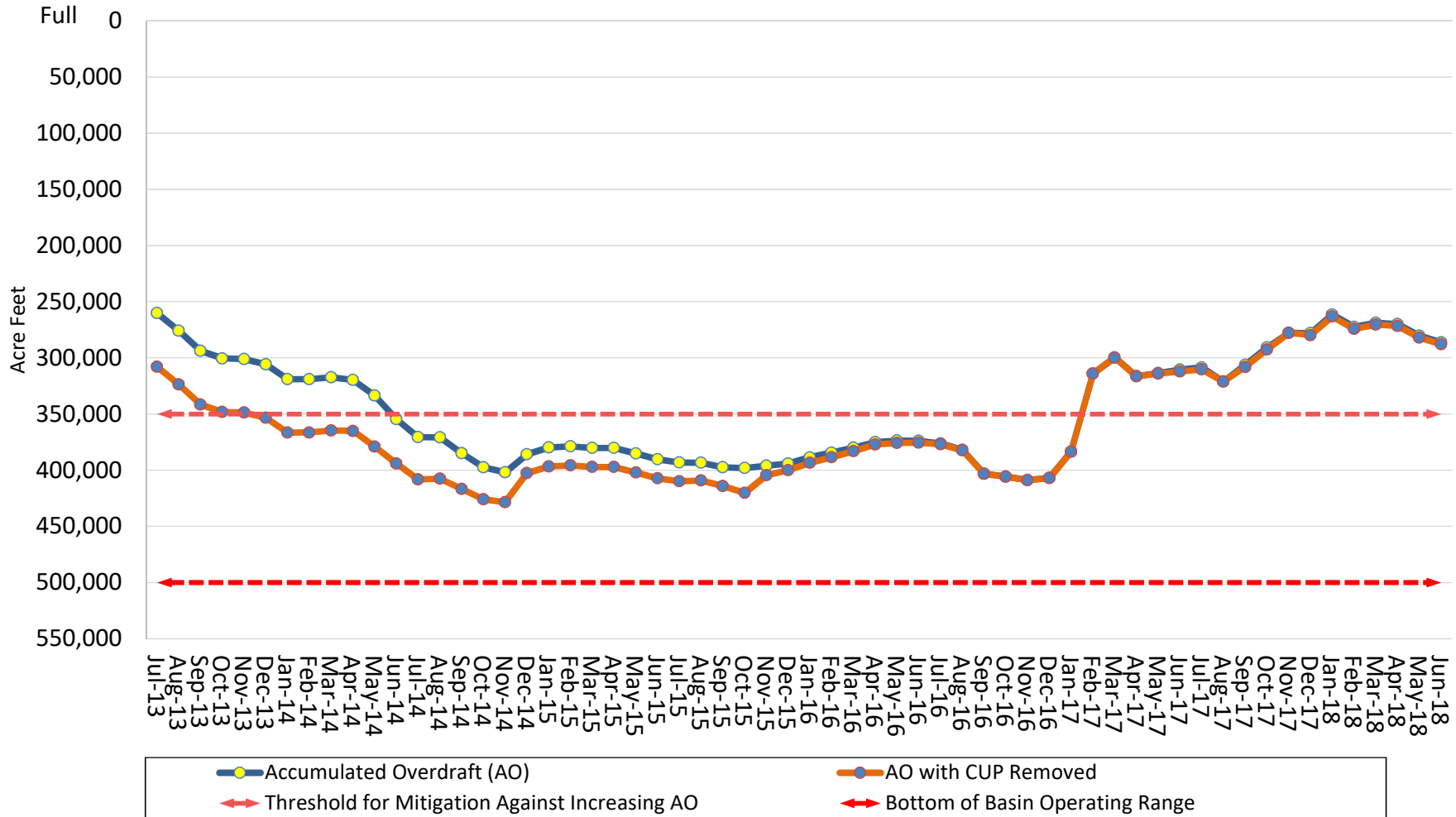
Final 2016: 60%
1.15 MAF to MWD

Final 2018: 35%
0.67 MAF to MWD

Final 2015: 20%
0.38 MAF to MWD

■ Water Year 2015
 ■ Water Year 2016
 ■ Water Year 2017
 ■ Water Year 2018
 ■ Water Year 2019

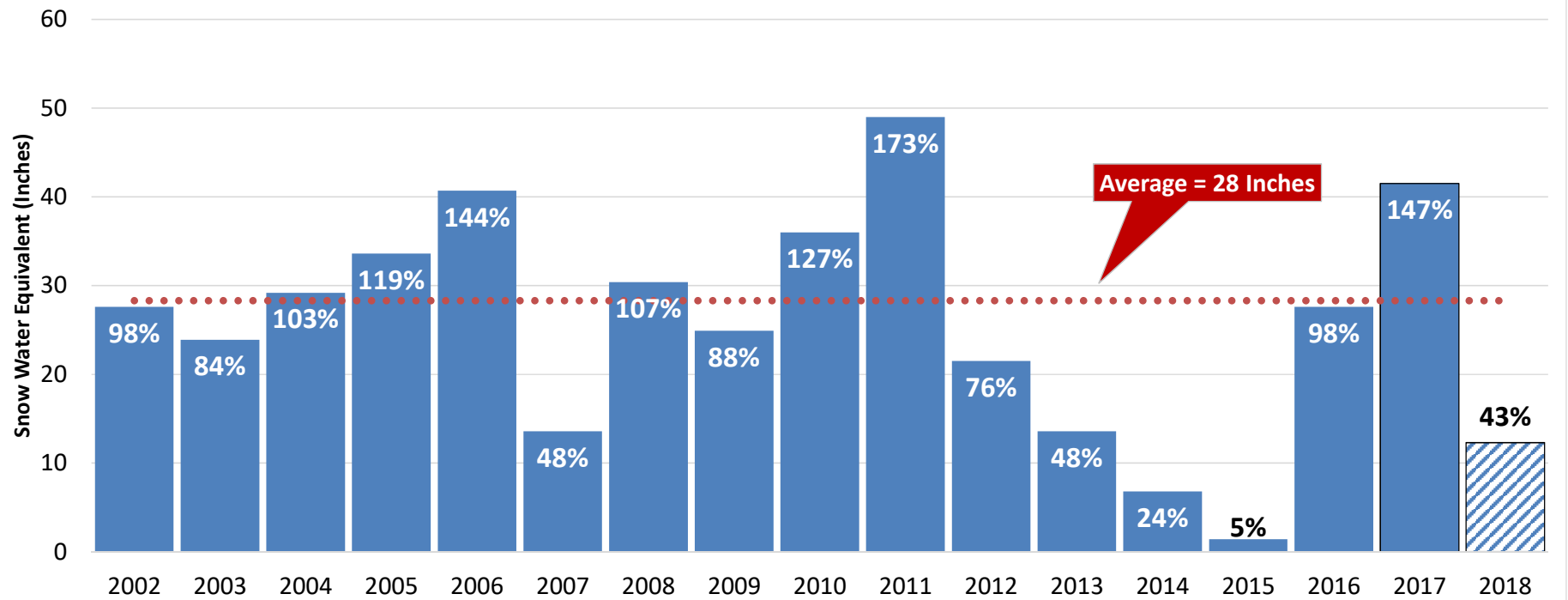
Accumulated Overdraft of the OCWD Groundwater Basin as of June 2018



	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
AO (AF)	376,310	381,800	403,047	405,635	408,729	406,832	383,548	314,004	299,755	316,286	313,468	310,434
AO w/CUP removed (AF)	376,864	382,340	403,223	405,811	408,906	407,009	383,548	314,004	299,931	316,462	314,009	312,164
	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
AO (AF)	308,488	321,131	306,280	290,800	277,691	278,056	261,521	272,475	268,752	269,889	280,329	286,163
AO w/CUP removed (AF)	310,216	321,131	308,007	292,522	277,691	279,776	263,237	274,188	270,463	271,601	282,041	287,869

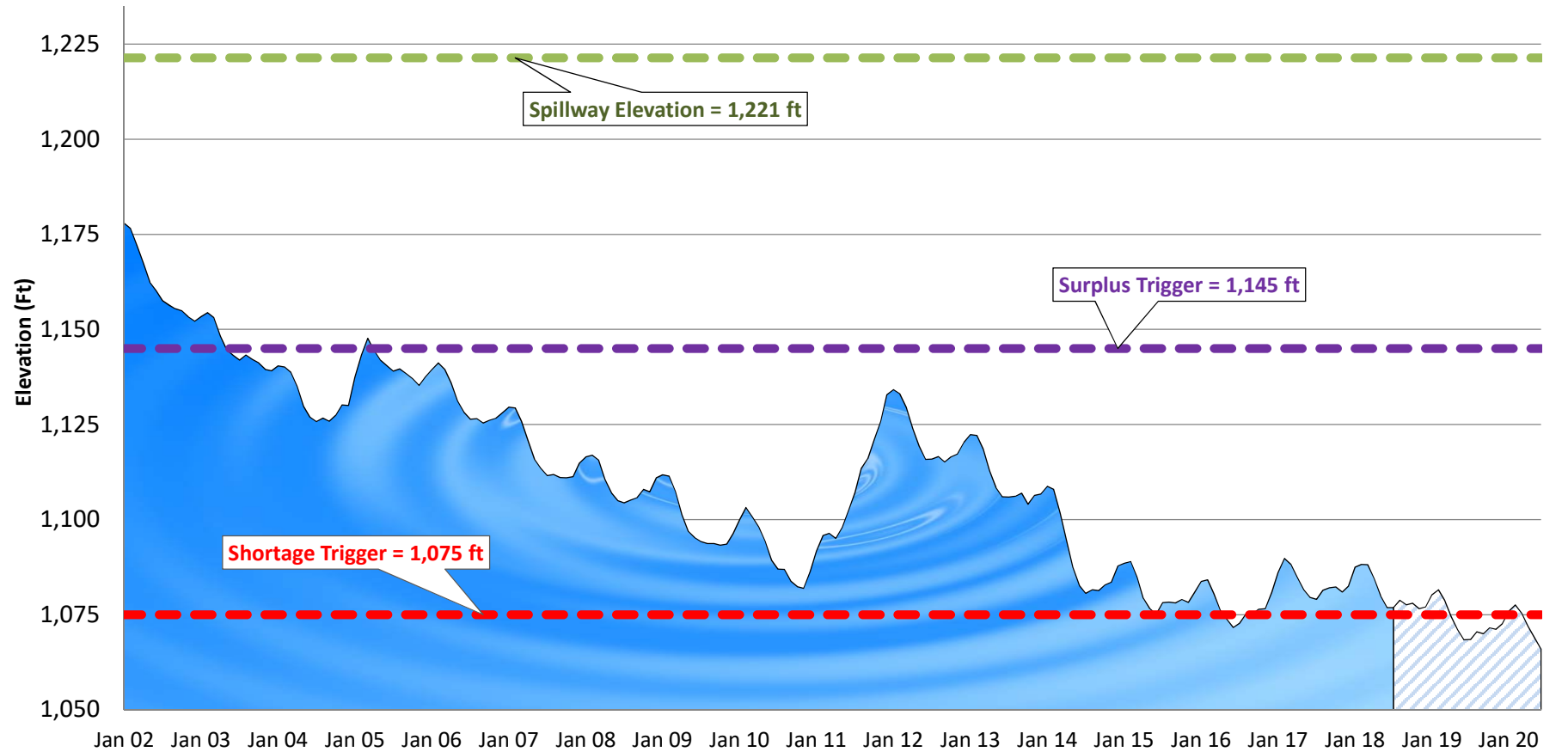


Historical Northern California April 1st Peak Snow Water Equivalent

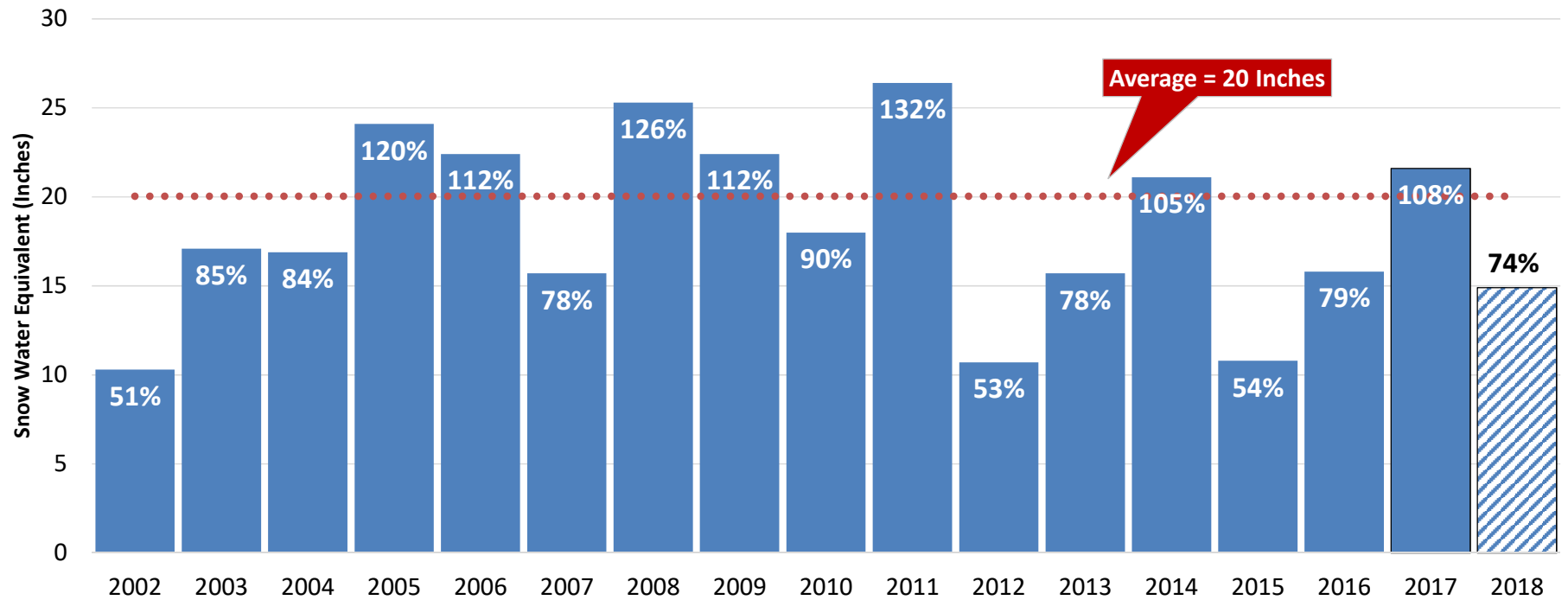


Lake Mead Levels: Historical and Projected projection per USBR 24-Month Study

■ Historical □ Projected

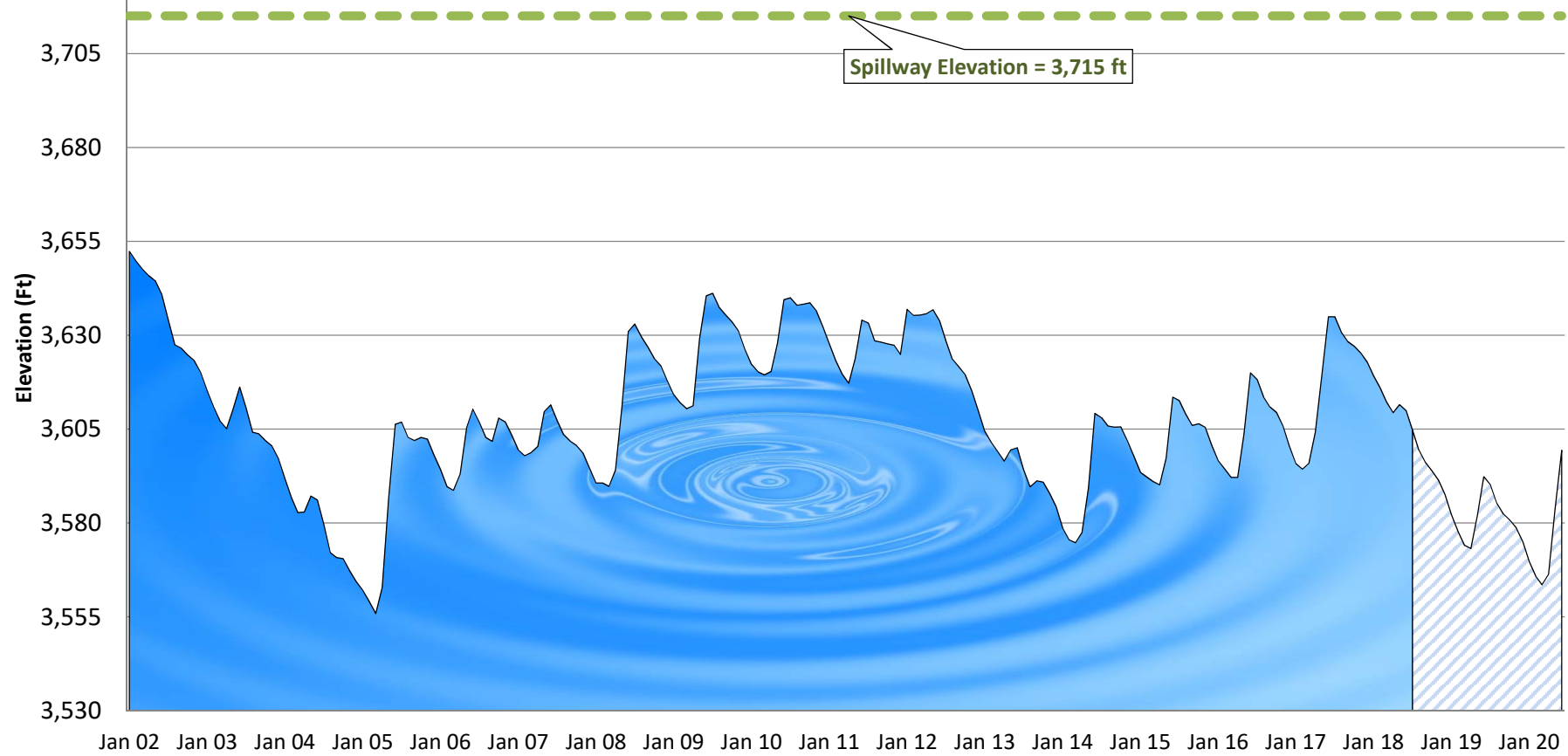


Historical Colorado Basin April 15th Peak Snow Water Equivalent



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

■ Historical □ Projected



Lake Mead Historical Water Elevation Level

