

ORIGINATING SECTION: Integrated Planning

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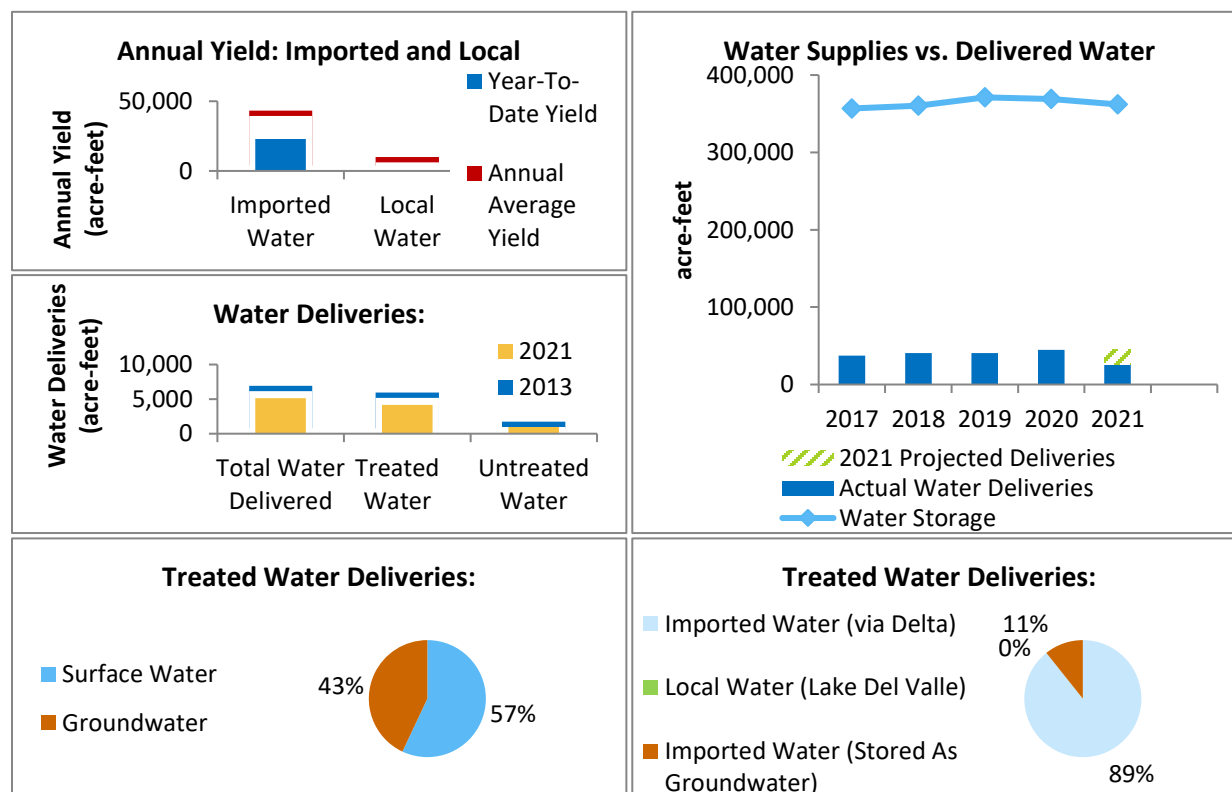
AGENDA DATE: August 18, 2021

SUBJECT: Monthly Water Inventory and Water Budget Update

SUMMARY:

In support of Zone 7's mission to "deliver safe, reliable, efficient, and sustainable water...services," for Strategic Plan Goal A – "Reliable Water Supply and Infrastructure;" this report summarizes water supply, usage and storage conditions as of the end of July 2021. An overall analysis of the annual water supply takes place in April of each year with the Annual Review of Sustainable Water Supply. Long-term water supply planning is summarized in the Urban Water Management Plan, which is updated every five years and assesses water supply reliability on a 20-year horizon. The report considers the various sources of supply and storage available to Zone 7 locally and in State Water Project facilities, as well as in remote groundwater storage banks.

Figure ES 1: At-a-Glance Summaries of Water Supplies, Deliveries, and Available Water (as of July 2021)



JULY 2021
Zone 7 Water Inventory and Water Budget

Supply and Demand *(See Table 1, Table 2, Figure 1, Figure 2, Figure 3, and Figure 4)*

- Monthly totals: 5,150 AF delivered to customers (4,150 AF treated, 1,000 AF untreated)
- The total treated water production increased by 6% compared to last month.
- The City of Pleasanton plans to pump their 3,500 AF Groundwater Pumping Quota in 2021.
- Treated water sources were 57% surface water and 43% groundwater this month.
 - Treatment plant production was 24.8 MGD.
 - Wellfield production was 18.8 MGD.

Comparison of Demands: 2021 vs 2013 (Pre-Drought Conditions) and 2021 vs 2020
(See Table 1)

- There was a 16% decrease in Zone 7 demands this month relative to the same time in 2013; treated production was 20% lower, and untreated delivery was 3% higher.
- There was a 7% decrease in Zone 7 demands this month relative to the same time in 2020; treated production was 10% lower, and untreated delivery was 11% higher.

Table 1: July 2021 comparison - water demand and conservation

	Treated Production	Untreated Delivery	Total
July 2021 (AF)	4,150	1,000	5,150
July 2020 (AF)	4,610	900	5,510
July 2013 (AF)	5,190	970	6,160

- Note that, in late May 2021 Zone 7 and the retailers began requesting 10% voluntary conservation relative to 2020 water demands due to the critically dry conditions this year. Subsequently, the retailers requested 15% conservation in line with the Governor's statewide request in July. Conservation was at 7% overall for July 2021 versus July 2020 for treated and untreated water.

Imported Water *(See Table 2)*

- The current Table A allocation is 5% or about 4,000 AF; this amount remains available.
- Zone 7 began the year with about 8,840 AF of State Water Project carryover water. Amount remaining is about 570 AF.
- The first installment of Mojave transfer water was delivered in July. This first transfer of 3,000 AF will provide a total of 4,500 AF. An additional 3,600 AF is in progress and expected later this year for a total transfer of 8,100 from Mojave Water Agency.
- Under the current dry conditions, Semitropic began recovering water in February and Cawelo is expected to begin in September. Non-local groundwater bank storage is at 112,520 AF.

- Remaining incoming supplies and total operational water storage are approximately 222,590 AF; if emergency groundwater storage below the historical low is included, then the total amount of remaining supplies and storage is estimated at 350,590 AF.

Groundwater

(See Table 2 and Figure 5)

- Wellfield pumping made up 1,790 AF (43%) of treated supply delivered to retailers.
- Artificial recharge via the arroyos to the Groundwater Basin had been suspended since July 2020 due to the groundwater basin being nearly full and low SWP Table A allocation. However, live stream recharge had resumed temporarily on Arroyo Valle earlier this year, a condition of Zone 7's water rights permit. Zone 7's contribution to live stream was zero this month.
- Groundwater basin overflow on the west side of the basin was estimated at 0 AF.
- The Main Groundwater Basin is at approximately 92% of total capacity (232,000 AF out of 254,000 AF).
 - 104,000 AF are operational storage (i.e. above historical groundwater lows).
 - The remaining 128,000 AF are designated for emergency storage.

Local Surface Water

(See Table 2 and Figure 6)

- Zone 7 did not use any stored water in Lake Del Valle this month.
 - Zone 7 began 2020 with 20 AF of available local water which was used in January; about 700 AF have been captured and used in 2021. Zone 7 has no local water in storage.

Stream Outflow

(See Table 2)

- Due to dry conditions, surface runoff did not exceed 10 cfs baseflow at the Arroyo de la Laguna at Verona stream gauge and yielded no outflow.
- Note: some surface flows out of the Tri-Valley are mandated for other downstream purposes.

Local Precipitation

(See Figure 7)

- 0.0 inch of precipitation was recorded in the Livermore area this month.
- Cumulative precipitation was at 5.7 inches or 40% of average conditions as of July 31 for the water year (October 1-September 30).

Sierra Precipitation

(See Figure 8)

- 0.0 inch of precipitation was recorded in the North Sierra this month.
- Cumulative precipitation in the Northern Sierra was at 46% of average conditions (as of July 30, 2021) for Water Year 2020/2021 (October 1, 2020-September 30, 2021).

Lake Oroville*(See Figure 9)*

- Lake Oroville was at 25% of total capacity (35% of average) as of July 29.
 - Total storage: 902,040 AF
 - Storage decreased by 20% of total capacity since last month.

San Luis Reservoir*(See Figure 10)*

- San Luis Reservoir was at 20% capacity (42% of average) as of August 1.
 - Total storage: 412,940 AF
 - Storage decreased by about 37% of total capacity since last month.

NOTE: *Numbers presented are estimates only and subject to adjustment over the course of the year.*

Table 2: Quarterly water inventory

Water Inventory for Zone 7 Water Agency

Note: Values are rounded. All units in AF unless noted otherwise. Subject to adjustment over the year.

	2020 <i>Jan-Dec</i>	2021 - Q1 <i>Jan-Mar</i>	2021 - Q2 <i>Apr-Jun</i>	2021 - Q3 <i>Jul-Sept</i>	2021 - YTD <i>Jan-Dec</i>
Supply					
Surface Water Sources Used					
SWP Table A	7,260	0	0	0	0
SWP Carryover	10,810	2,180	6,090	0	8,270
Local Surface Water (Lake Del Valle)	8,580	720	0	0	720
Yuba Accord and Other Transfers ¹	7,110	0	0	3,000	3,000
Subtotal	33,760	2,900	6,090	3,000	11,990
Withdrawals from Groundwater Storage					
Zone 7 Groundwater Basin	11,450	2,830	5,120	1,790	9,740
Non-Local Groundwater Banks	1,000	1,050	2,200	360	3,610
Subtotal	12,450	3,880	7,320	2,150	13,350
Total Supply	46,210	6,780	13,410	5,150	25,340
Demand / Water Use					
Delivered to Customers					
Municipal Water ²	38,950	6,070	11,060	4,150	21,280
Untreated Water	5,820	460	2,350	1,000	3,810
Subtotal	44,770	6,530	13,410	5,150	25,090
Recharging Groundwater Storage					
Zone 7 Groundwater Basin	1,440	250	0	0	250
Non-Local Groundwater Banks	0	0	0	0	0
Subtotal	1,440	250	0	0	250
Total Demand	46,210	6,780	13,410	5,150	25,340
Available Water Supplies	1/1/21 Bal.	End-of-Quarter Balances			
Available from Incoming Supplies in 2021					
2021 Table A Allocation (%)	20%	5%	5%	5%	5%
2021 Table A Allocation Remaining (AF)	8,840	4,000	4,000	4,000	4,000
Yuba Accord and Other Transfers	0	0	4,500	1,500	1,500
Subtotal	8,840	4,000	8,500	5,500	5,500
Available from Storage in 2020					
SWP Carryover Balance ³	8,840	6,660	570	570	570
Lake Del Valle	20	0	0	0	0
Local GW Basin (Above Historical Low) ⁴	109,000	108,000	105,000	104,000	104,000
Non-Local Groundwater Banks	116,130	115,080	112,880	112,520	112,520
Subtotal	233,990	229,740	218,450	217,090	217,090
Total Available Water	233,990	233,740	226,950	222,590	222,590
Watershed Conditions	End-of-2020				
Precipitation at Livermore Station (in)	7.4	3.9	0.2	0.0	4.1
Lake Del Valle Net Yield	-8,100	680	0	0	680
Groundwater Net Recharge (est.)	0	2,000	3,000	1,000	6,000
Surface Water Outflow ⁵	6,450	4,920	50	0	4,970

¹ Yuba Accord and Mojave transfer supplies were acquired in 2021.

² Includes a small amount of unaccounted-for water

³ SWP Carryover balance includes Article 56 water in San Luis Reservoir.

⁴ Groundwater estimate based on most recent groundwater level data. Additional emergency storage is 128,000 AF.

⁵ Surface Water Outflow is estimated based on flow at USGS gage Arroyo De La Laguna at Verona.

Figure 1: Monthly treated water production in acre-feet (AF)

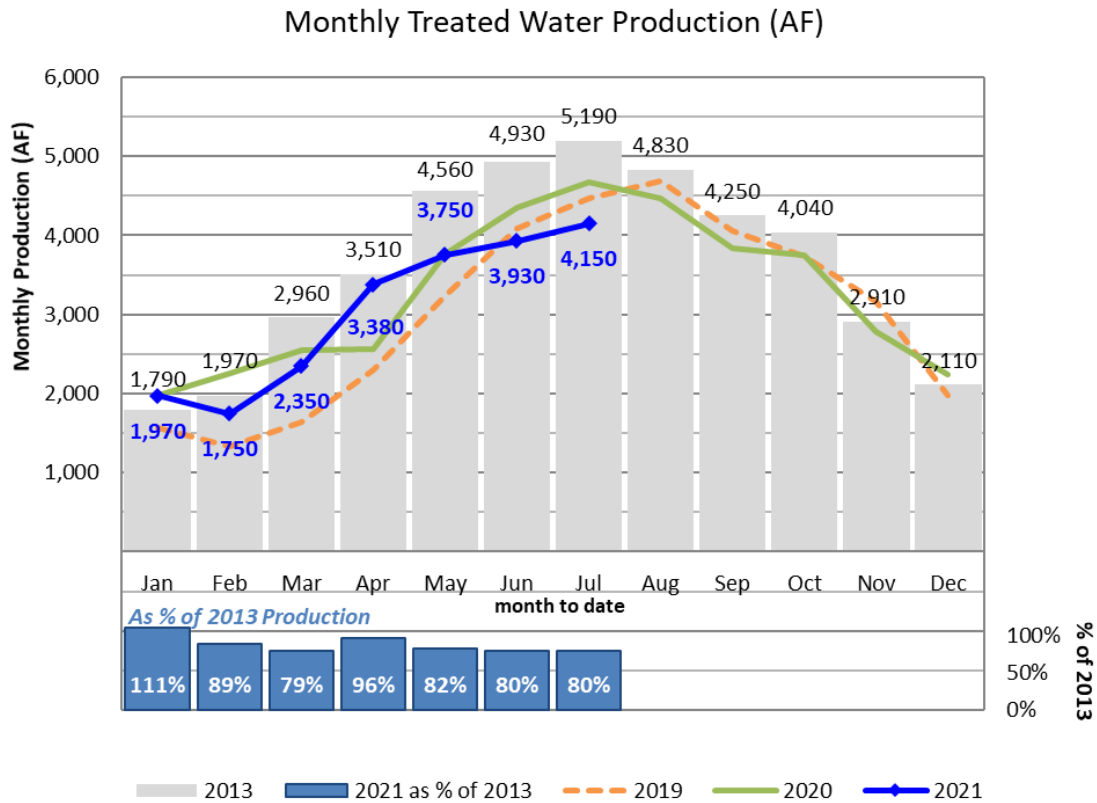
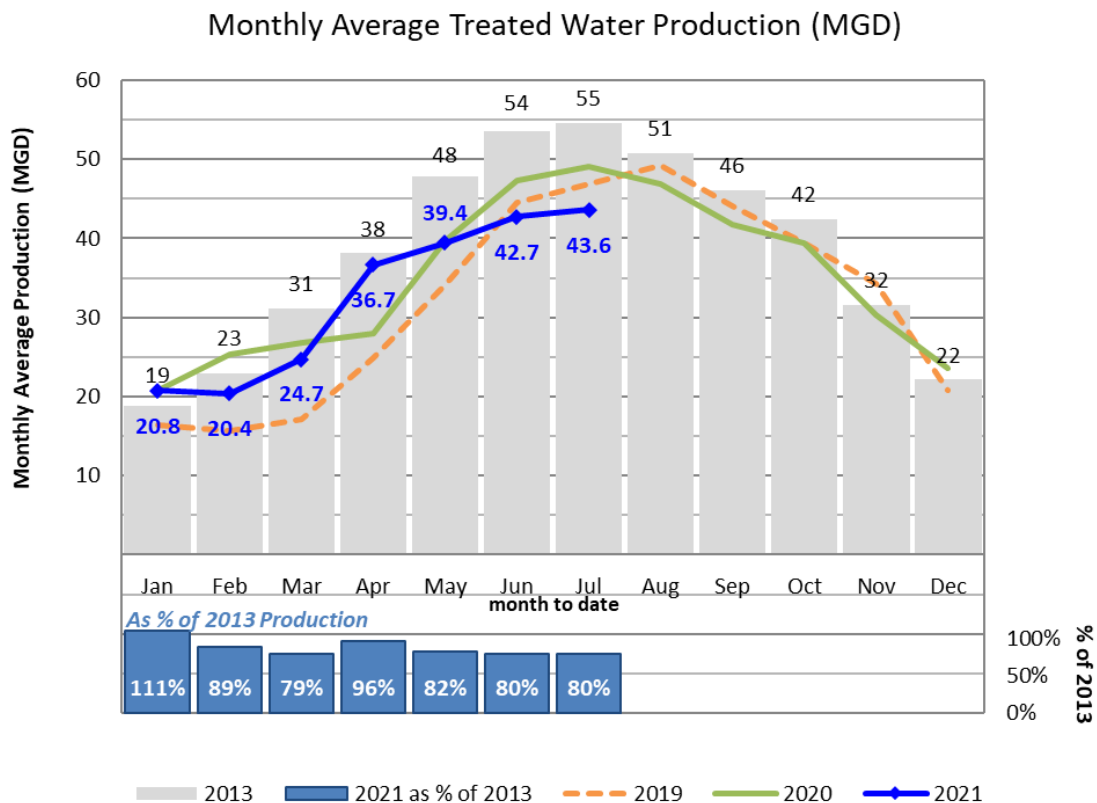
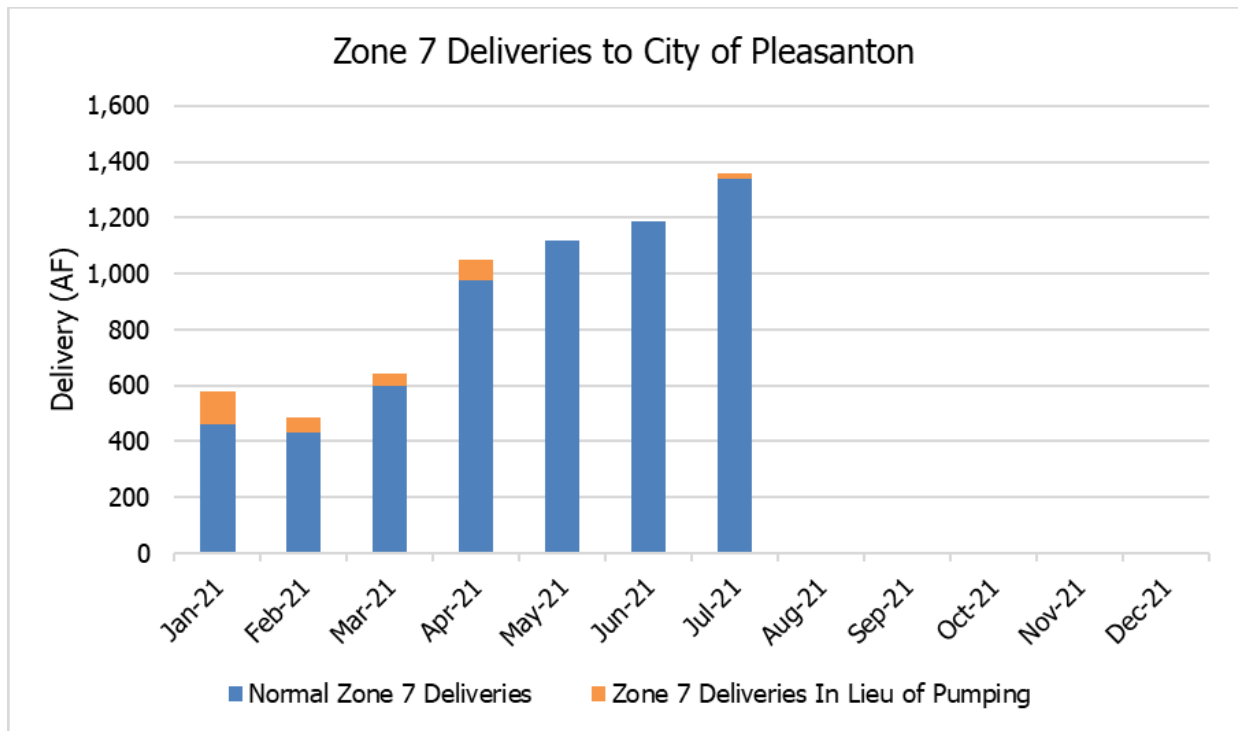


Figure 2: Monthly treated water production in average million gallons per day



**Figure 3: Pleasanton Estimated In-Lieu Demand
(Based on 2015-2018 Pumping)**



**Figure 4: California Water Service Estimated In-Lieu Demand
(Based on 2015-2018 Pumping)**

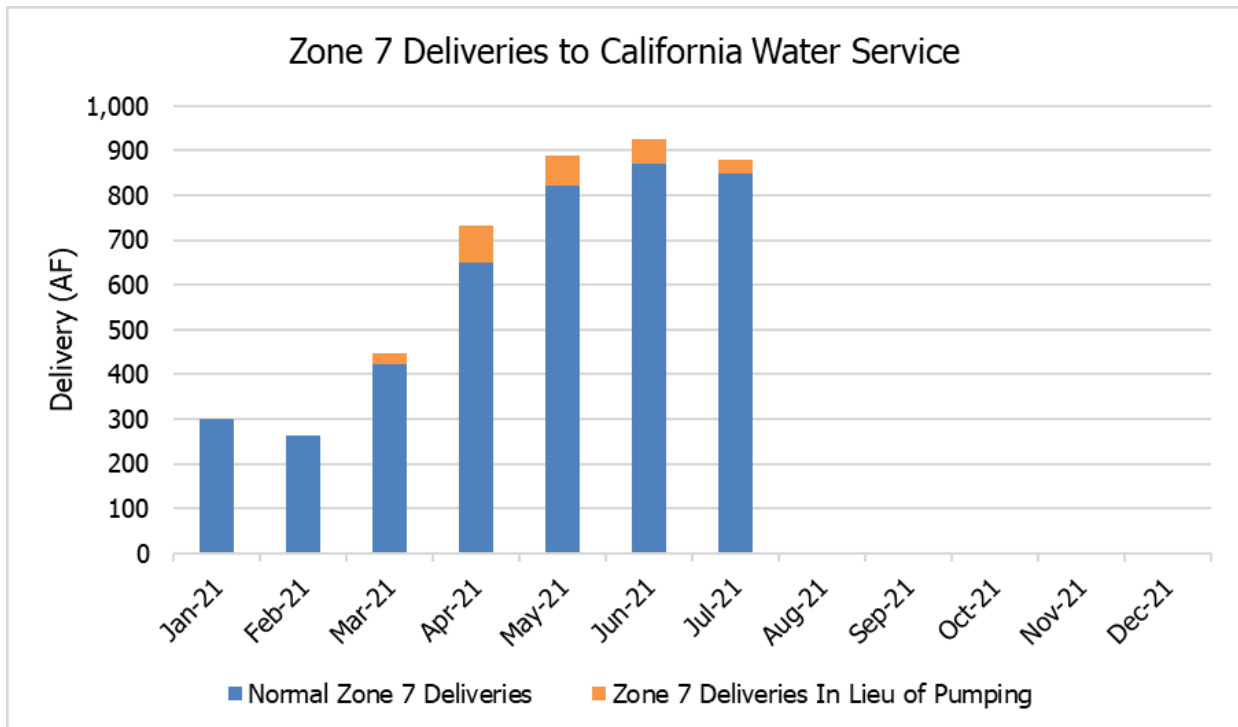


Figure 5: Main Groundwater Basin Storage

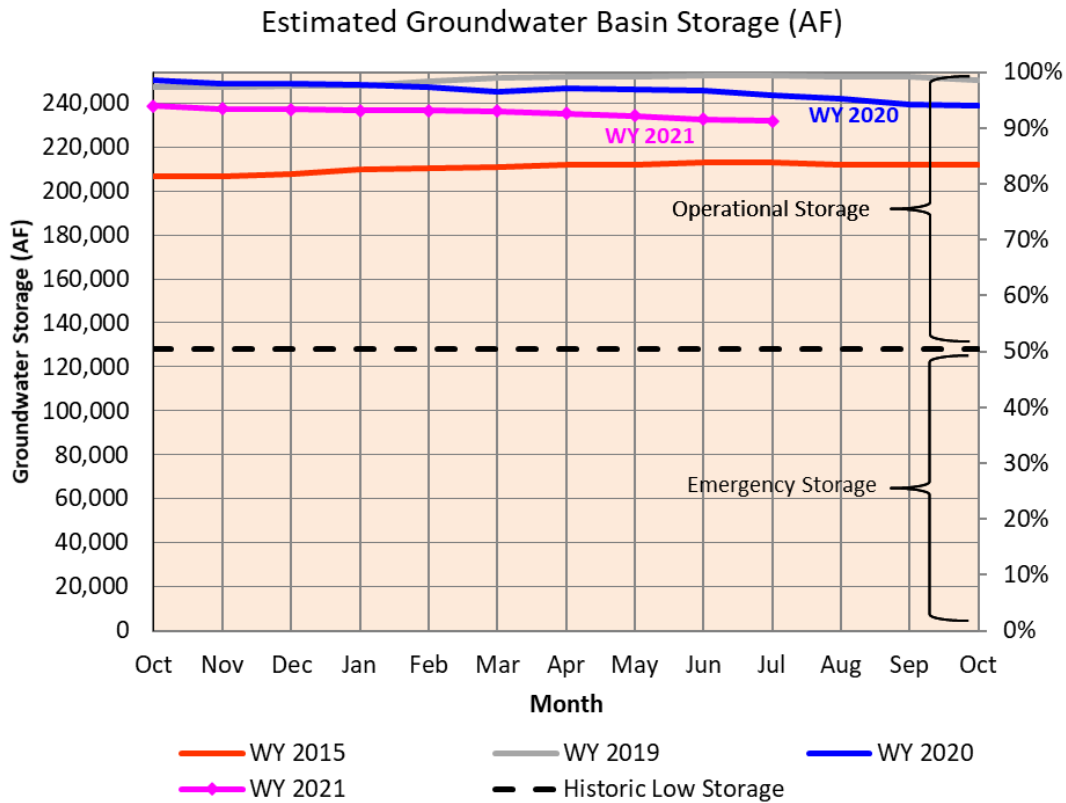
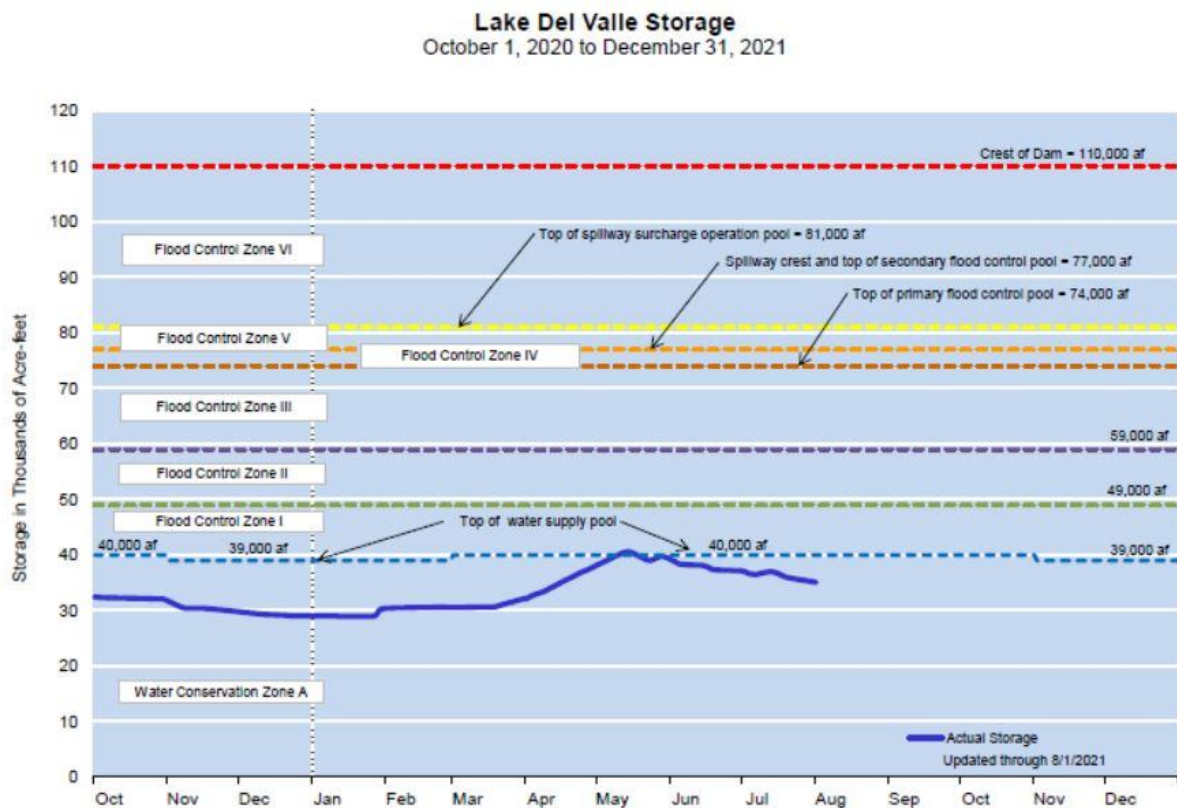


Figure 6: Lake Del Valle storage



(Source: <https://water.ca.gov/-/media/DWR-Website/>)

Figure 7: Local precipitation

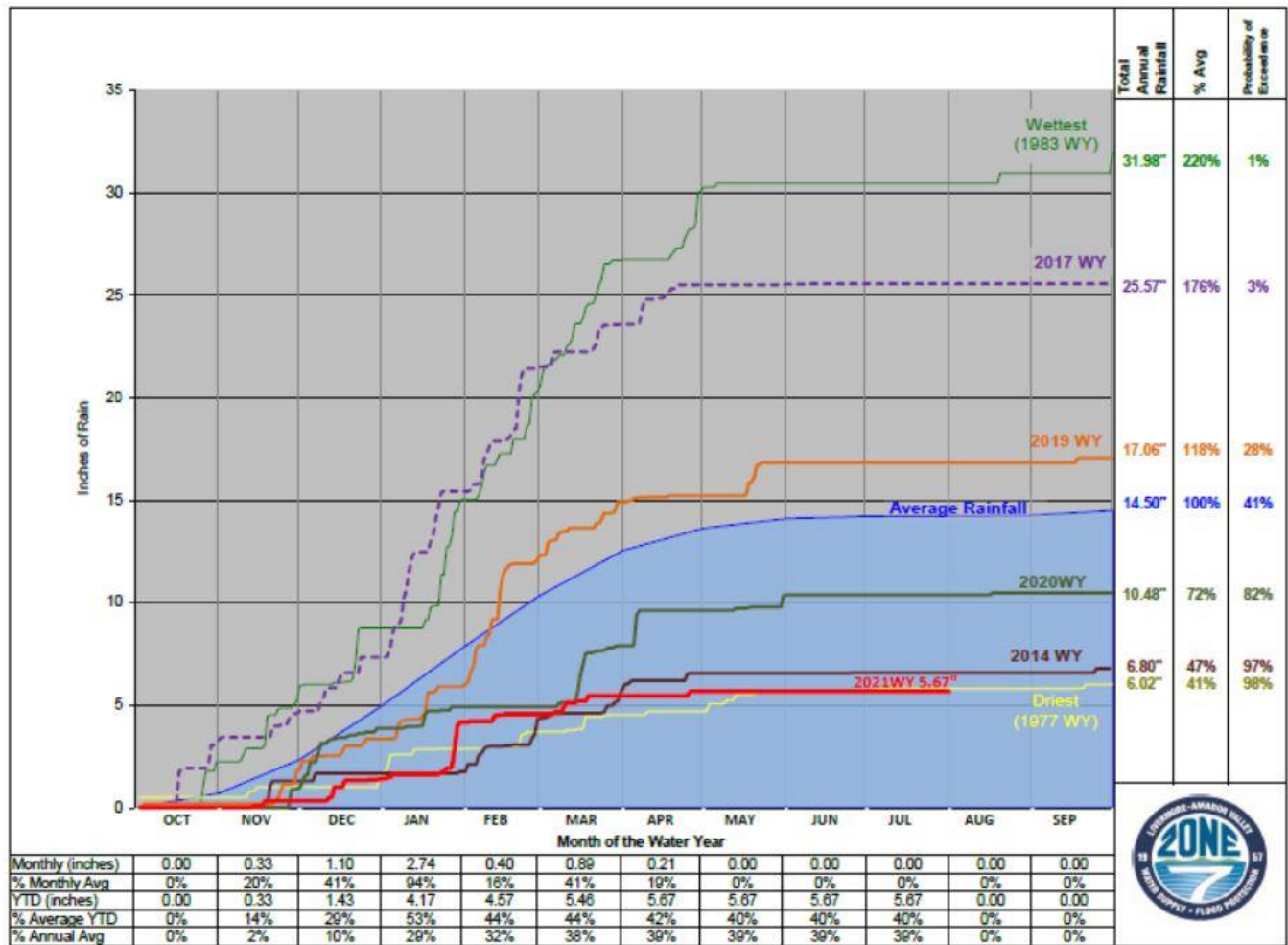
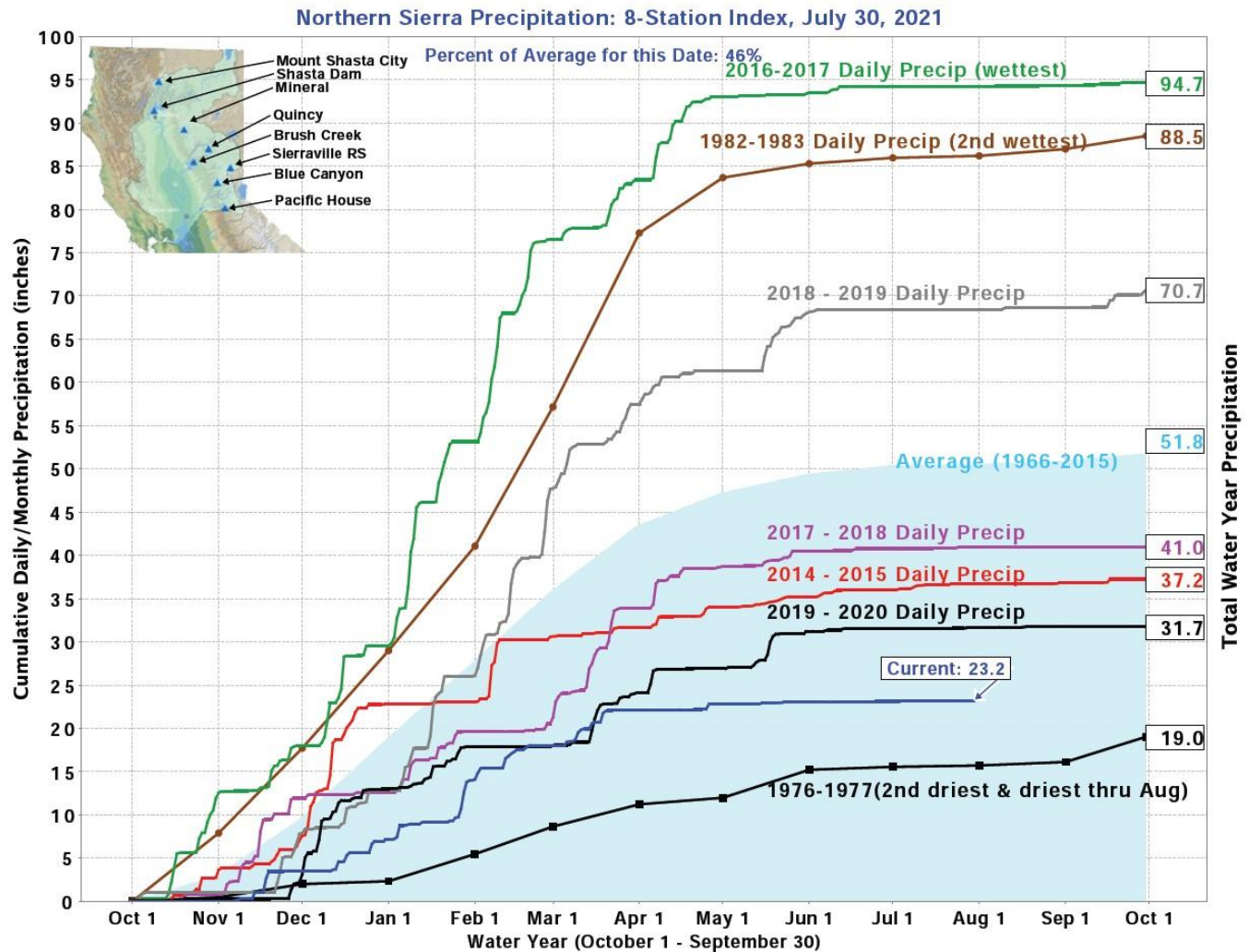


Figure 8: Cumulative precipitation in the North Sierra

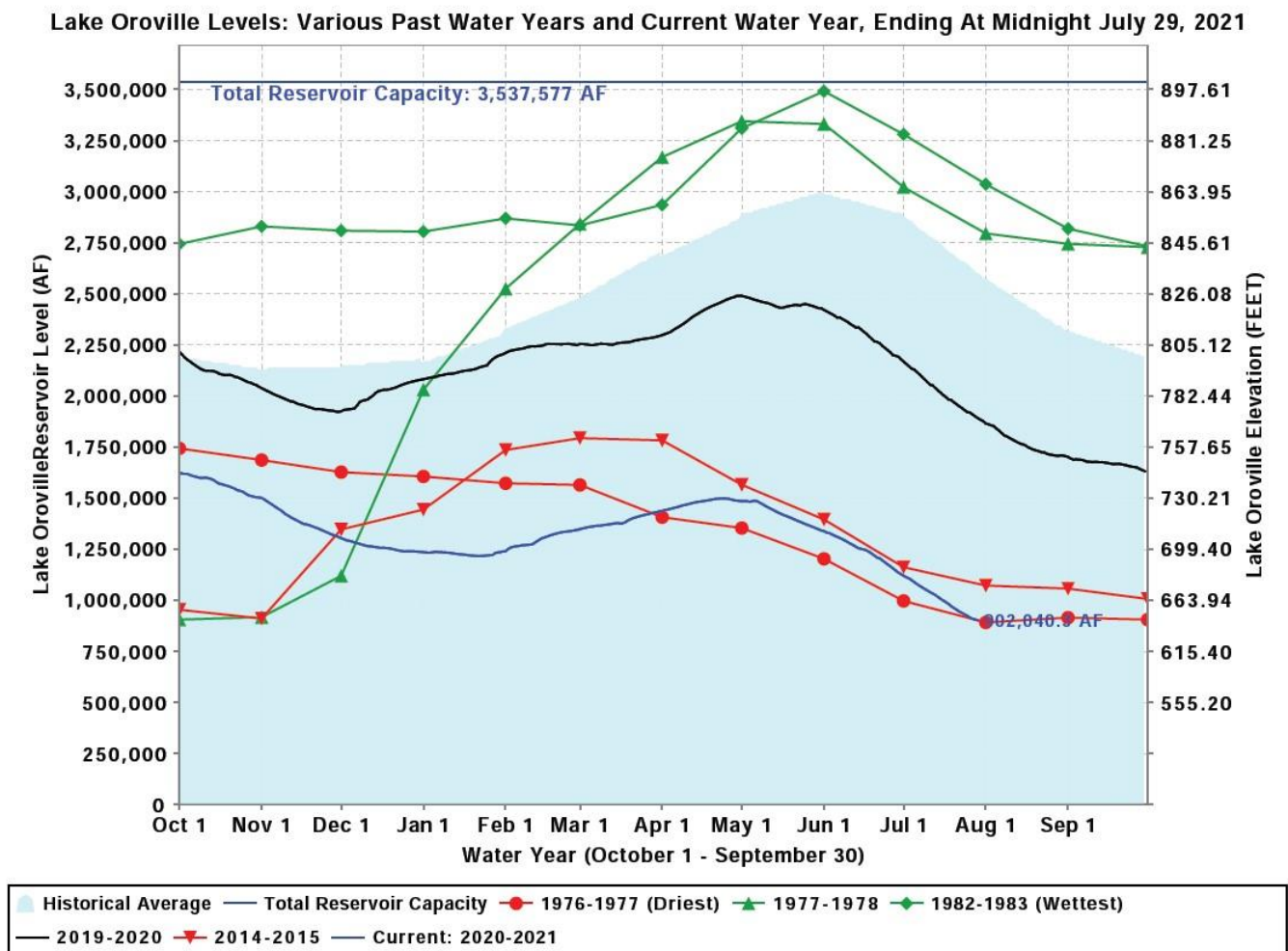
Note: Cumulative precipitation in the Northern Sierra was at 46% of average conditions as of July 30, 2021 for Water Year 2020/2021 (October 1, 2020-September 30, 2021).



(Source: http://cdec.water.ca.gov/cgi-progs/products/PLOT_ESI.pdf)

Figure 9: Lake Oroville storage compared with past water years

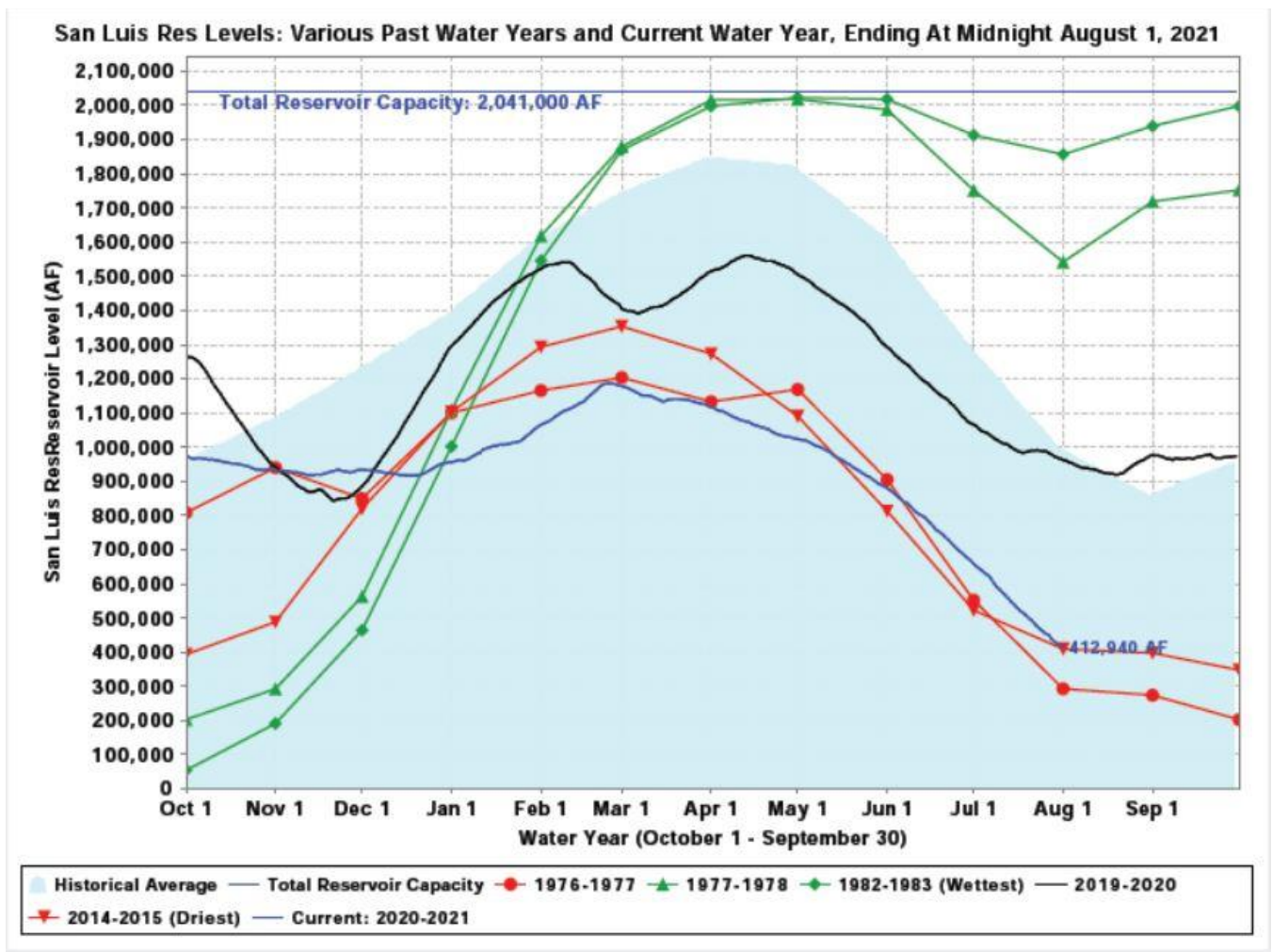
Note: The reservoir was at 25% of its total capacity, and 35% of its historical average for Water Year 2020/2021 (October 1, 2020-September 30, 2021).



(Source: <https://cdec.water.ca.gov/resapp/ResDetail.action?resid=ORO>)

Figure 10: San Luis Reservoir storage compared with past water years

Note: The reservoir was at 20% of its total capacity, and 42% of its historical average for Water 2020/2021 (October 1, 2020-September 30, 2021).



(Source: <https://cdec.water.ca.gov/resapp/ResDetail.action?resid=SNL>)