

San Francisco Public Utilities Commission

Hydrological Conditions Report

August 2019

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Hetch Hetchy Reservoir

System Storage

Current Tuolumne System and Local Bay Area storage conditions are summarized in Table 1.

Table 1 Current System Storage as of September 1, 2019							
	Current Storage		Maximum Storage		Available Capacity		Percentage of Maximum Storage
	acre-feet	millions of gallons	acre-feet	millions of gallons	acre-feet	millions of gallons	
Tuolumne System							
Hetch Hetchy Reservoir ¹	342,770		360,360		17,590		95%
Cherry Reservoir ²	238,536		273,345		34,809		87%
Lake Eleanor ³	25,123		27,100		1,977		93%
Water Bank ⁴	619,017		619,017		0		100%
Tuolumne Storage	1,225,446		1,279,822		54,376		96%
Local Bay Area Storage							
Calaveras Reservoir	62,974	20,520	96,824	31,550	33,850	11,030	65%
San Antonio Reservoir	45,137	14,708	50,496	16,454	5,358	1,746	89%
Crystal Springs Reservoir	53,386	17,396	58,377	19,022	4,990	1,626	92%
San Andreas Reservoir	17,438	5,682	18,996	6,190	1,558	508	92%
Pilarcitos Reservoir	2,857	931	2,995	976	138	45	95%
Total Local Storage	181,793	59,237	227,688	74,192	45,894	14,955	80%
Total System	1,407,239		1,507,509		100,270		93%

¹ Maximum Hetch Hetchy Reservoir storage with drum gates activated.

² Maximum Cherry Reservoir storage with flash-boards installed. Boards are in.

³ Maximum Lake Eleanor storage with flash-boards installed. Flashboards are currently in.

⁴ Additional Water Bank storage is derived from flood storage encroachment in Don Pedro.

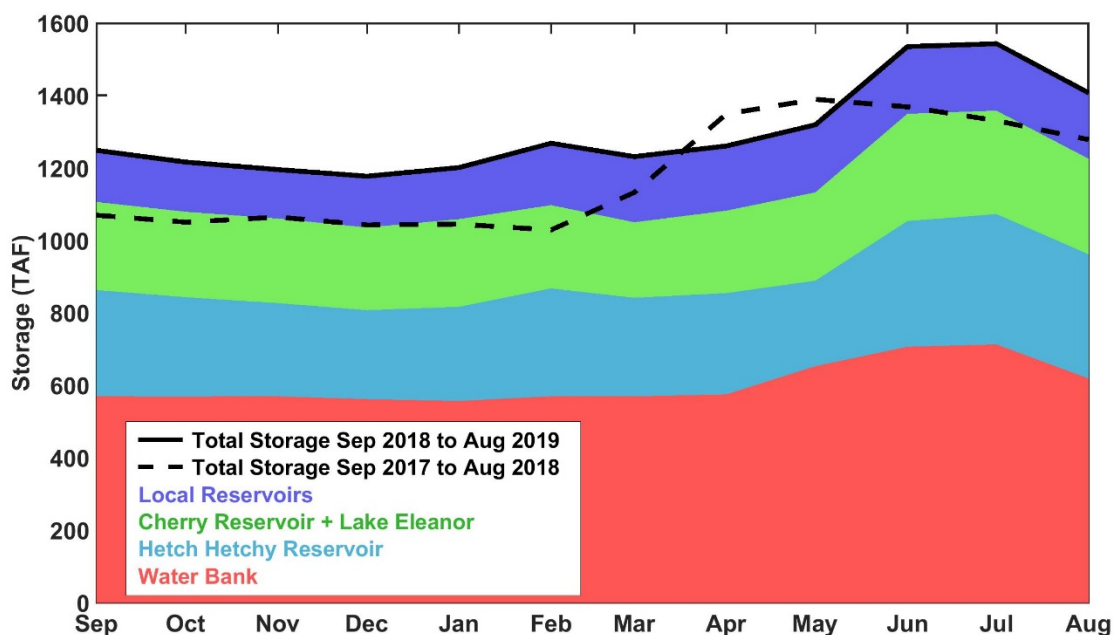


Figure 1: Monthly system storage for past 12 months in thousand acre-feet (TAF). Color bands show contributions to total system storage. Solid black line shows total system storage for the past 12 months. Dashed black line shows total system storage the previous 12 months.

Hetch Hetchy System Precipitation Index

Current Month: The August six-station precipitation index was 0.00 inches, or 0% of the average index for the month. The precipitation index is computed as the average of six Sierra precipitation stations and is an indicator of the overall basin wetness.

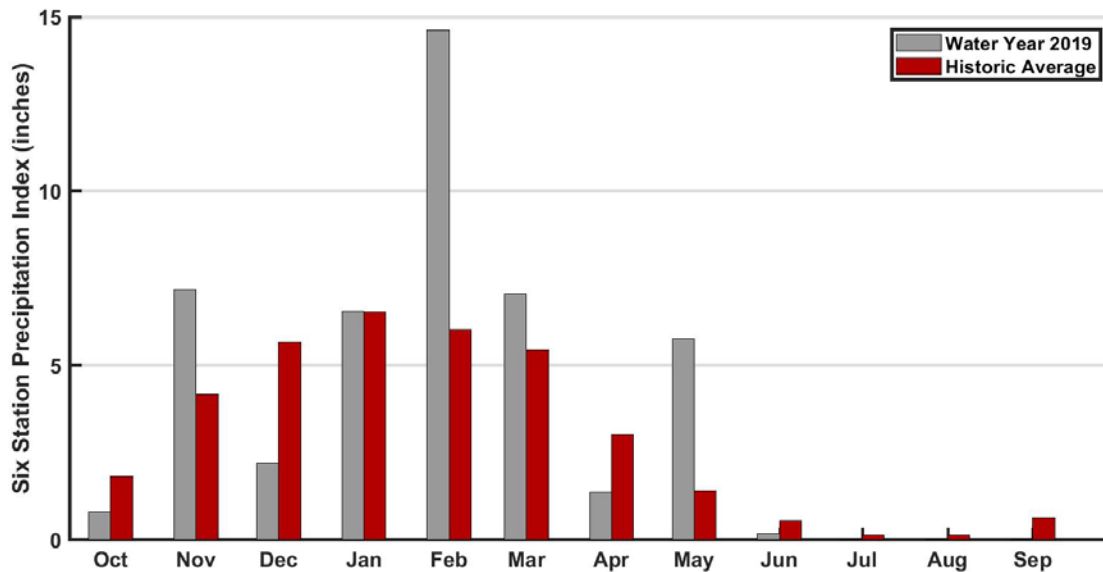


Figure 2: Monthly distribution of the six-station precipitation index as compared to the annual average precipitation for August 2019. The precipitation index is computed as the average of six Sierra precipitation stations and is an indicator of the overall basin wetness.

Cumulative Precipitation to Date: As of September 1st, the six-station precipitation index for Water Year 2019 was 45.63 inches, which is 128% of the average annual water year total. Hetch Hetchy Weather Station received no precipitation in August, for a total of 42.1 inches for Water Year 2019. The cumulative Hetch Hetchy Weather Station precipitation is shown in Figure 3 in red.

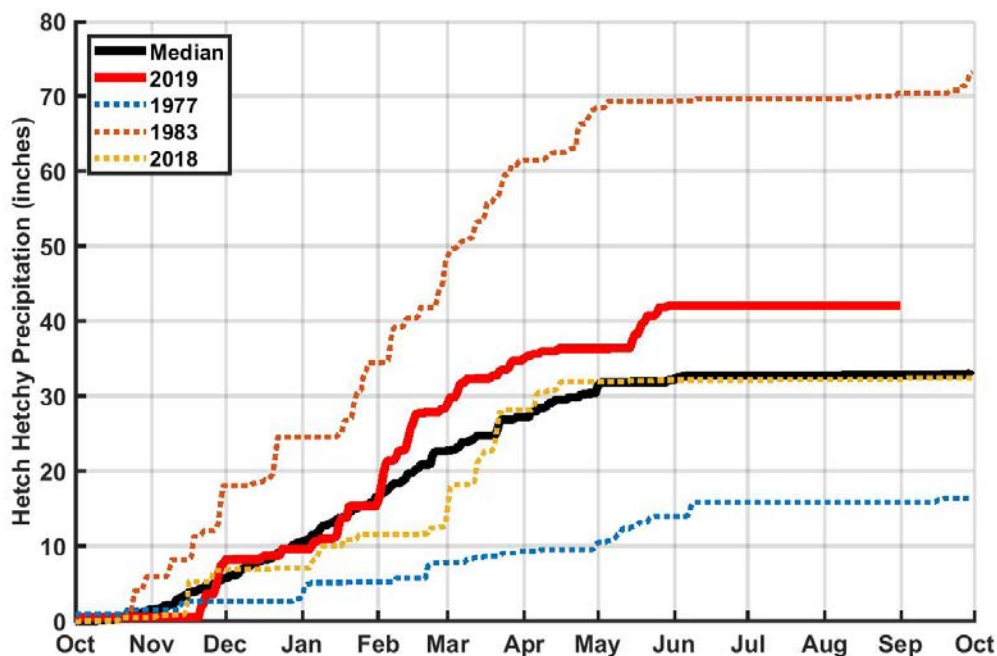


Figure 3: Water Year 2019 cumulative precipitation measured at Hetch Hetchy Weather Station. Median cumulative precipitation measured at Hetch Hetchy Weather Station and example wet and dry years are included with WY 2019 for comparison purposes.

Tuolumne Basin Unimpaired Inflow

Unimpaired inflow to SFPUC reservoirs and the Tuolumne River at La Grange for August 2019 is summarized below in Table 2.

Table 2 Calculated Reservoir Inflows and Water Available to City								
* All flows are in acre-feet	August 2019				October 1, 2018 through August 31, 2019			
	Observed Flow	Median ¹	Mean ¹	Percent of Mean	Observed Flow	Median ¹	Mean ¹	Percent of Mean
Inflow to Hetch Hetchy Reservoir	15,729	6,994	13,698	115%	1,066,146	699,972	732,221	146%
Inflow to Cherry Reservoir and Lake Eleanor	3,096	1,648	3,203	97%	703,073	442,832	450,150	156%
Tuolumne River at La Grange	55,432	15,673	24,312	228%	2,944,386	1,670,349	1,802,942	163%
Water Available to City	105,808	0	1,392	7601%	1,676,042	580,260	763,870	219%

¹Hydrologic Record: 1919-2015

Hetch Hetchy System Operations

Water delivery via the Hetch Hetchy Aqueduct averaged 242 MGD for the month of August.

Hetch Hetchy Reservoir power draft and stream releases during the month totaled 33,898 acre-feet. Total precipitation in Water Year 2019 results in a Water Year Type A (normal to wet conditions) for Hetch Hetchy Reservoir, which will be maintained through the rest of the calendar year. Hetch Hetchy Reservoir minimum instream release requirements for the month of August were 125 cfs. Instream release requirements for September 1-14th are 100 cfs and 80 cfs for September 15-30th.

Cherry Reservoir power generation and valve releases totaled 23,619 acre-feet for the month and were used to maintain seasonal target elevations. The required minimum instream release from Cherry Reservoir was 15 cfs for August and will remain at this rate until the end of September. Required minimum release from Lake Eleanor was 20 cfs and will remain at this rate until the end of September. In August a total of 676 acre-feet of water was transferred from Lake Eleanor to Cherry Reservoir via the Cherry / Eleanor Diversion.

Regional System Treatment Plant Production

The Harry Tracy Water Treatment Plant average production rate for August was 32 MGD. The Sunol Valley Water Treatment Plant status was stand-by for the month, with no production.

Local System Water Delivery

The average August delivery rate was 243 MGD which is a 1% increase above the July delivery rate of 240 MGD.

Local Precipitation

Precipitation totals for the month were consistent with the season climate regime and therefore dry with trace amounts of marine fog-derived precipitation recorded in the Pilarcitos reservoir watershed. The rainfall summary for August 2019 is presented in Table 3.

Table 3 Precipitation Totals at Three Local Area Reservoirs				
Weather Station Location	August		Water Year 2019	
	Total (inches)	Percent of Mean for the Month	Total (inches)	Percent of Mean for the Year-To-Date
Pilarcitos Reservoir	0.00	0 %	46.49	124 %
Lower Crystal Springs Reservoir	0.00	0 %	28.88	110 %
Calaveras Reservoir	0.00	0 %	23.07	109 %

Upcountry Water Supply

Total system storage is near 95% as the upcountry and local reservoirs were filled towards the end of runoff. Reservoirs are being managed to maximize storage as the summer season continues. As of September 1st, 1,676,042 acre-feet of water has been available to the City, which is 219% of the water-year-to-date average (Figure 4).

Hetch Hetchy Reservoir is drafting via SJPL deliveries and instream releases. Cherry Reservoir is drafting with instream releases and generation at Holm Powerhouse to meet load and provide recreation flows. Lake Eleanor is drafting with instream release. Water Bank is full and projected to debit starting in late September as upcountry storage is maintained through the fall.

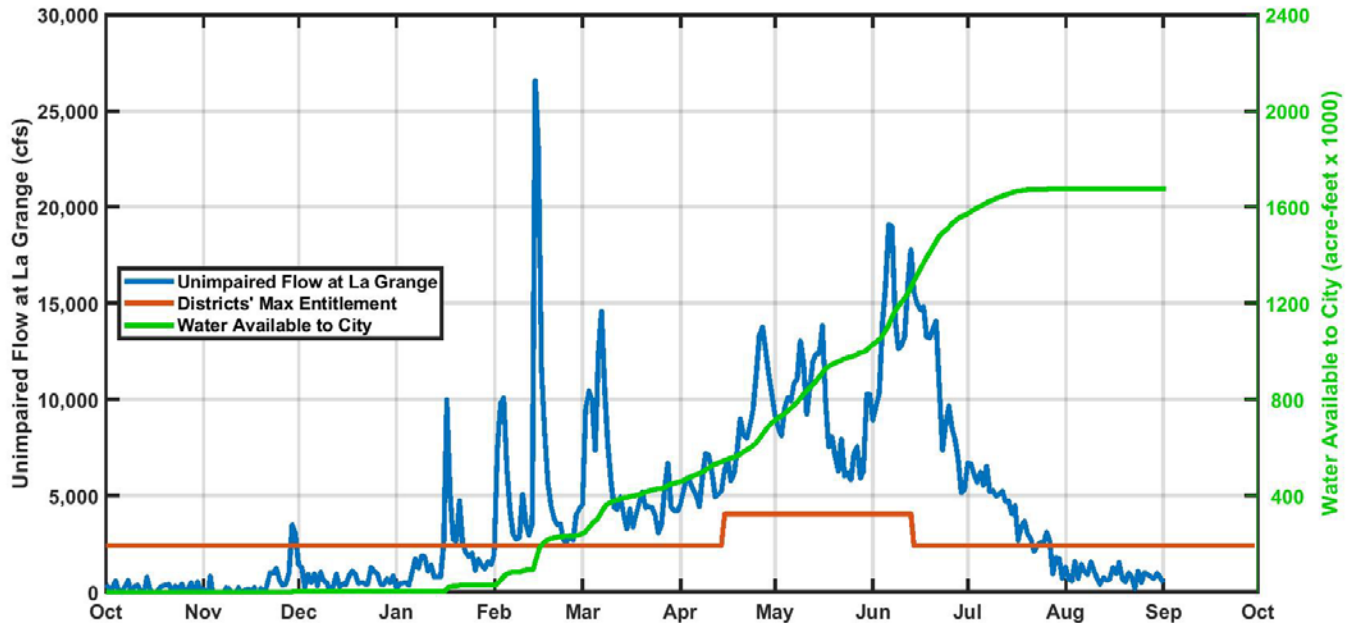


Figure 4: Calculated unimpaired flow at La Grange and the allocation of flows between the Districts and the City. To date there has been 1,676,042 ac-ft available to the city in Water Year 2019.