San Francisco Public Utilities Commission
Hydrological Conditions Report
June 2018

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Hetch Hetchy and Kolana Rock as seen from Wampama Falls

System Storage

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

Table 1
Current Storage
As of July 1, 2018

Reservoir	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[1]	359,375		360,360		985		99%
Cherry[2]	254,571		268,810		14,239		95%
Eleanor[3]	25,216		27,100		1,884		93%
Water Bank	580,716		645,748		65,032		90%
Tuolumne Storage	1,219,878		1,302,018		82,140		94%
Local Bay Area Storage							
Calaveras[4]	24,420	7,957	96,824	31,550	72,404	23,593	25%
San Antonio	49,285	16,060	50,496	1,352	1,211	395	98%
Crystal Springs	55,009	17,925	58,377	19,022	3,368	1,097	94%
San Andreas	17,391	5,667	18,996	6,190	1,605	523	92%
Pilarcitos	2,765	901	2,995	976	230	75	92%
Total Local Storage	148,870	48,509	227,688	59,090	78,818	25,683	65%
Total System	1,368,748		1,529,706		160,958		89%

[1] Maximum Hetch Hetchy Reservoir storage with drum gates activated.
[2] Maximum Cherry Lake storage with flash-boards removed.
[3] Maximum Lake Eleanor storage with flash-boards installed.
[4] Available capacity does not take into account current DSOD storage restrictions.

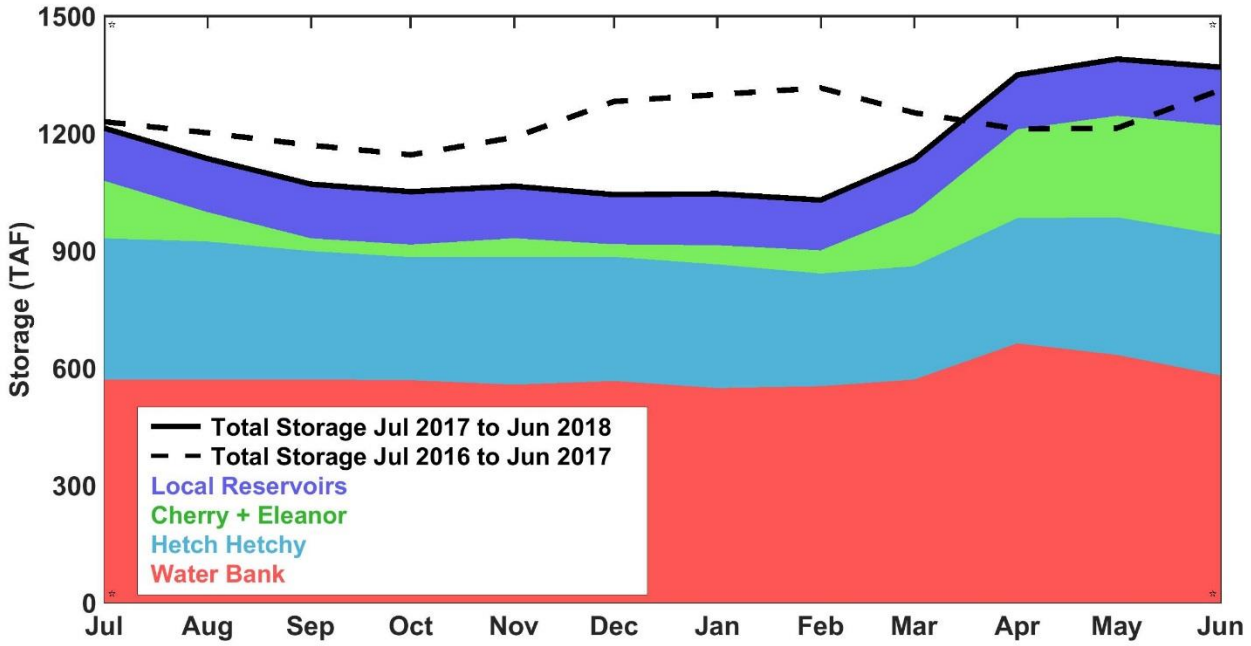

Figure 1: Monthly system storage for past 12 months in thousand acre-feet (TAF). Color bands show relative contributions to total system storage. Solid black line shows total system storage for the past 12 months. Dashed black line shows total system storage the previous 12 months.

Hetch Hetchy System Precipitation Index [5/]

Current Month: The June 2018 six-station precipitation index was 0.01 inches, or 1% of the average index for the month.

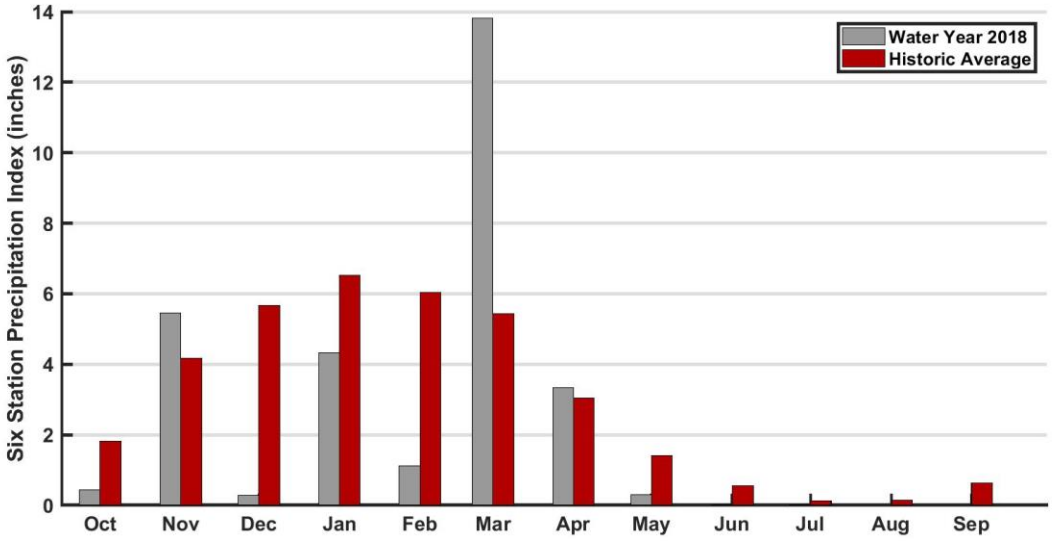

Figure 2: Monthly distribution of the Hetch Hetchy six-station precipitation index as percent of the annual average precipitation, as of July 1, 2018.

Cumulative Precipitation to Date: As of July 1, the six-station precipitation index for water year 2018 was 28.76 inches, which is 81% of the average annual water year total. Hetch Hetchy received no precipitation in June, for a total of 31.96 inches for Water Year 2018. The cumulative Hetch Hetchy precipitation is shown in Figure 3 in red.

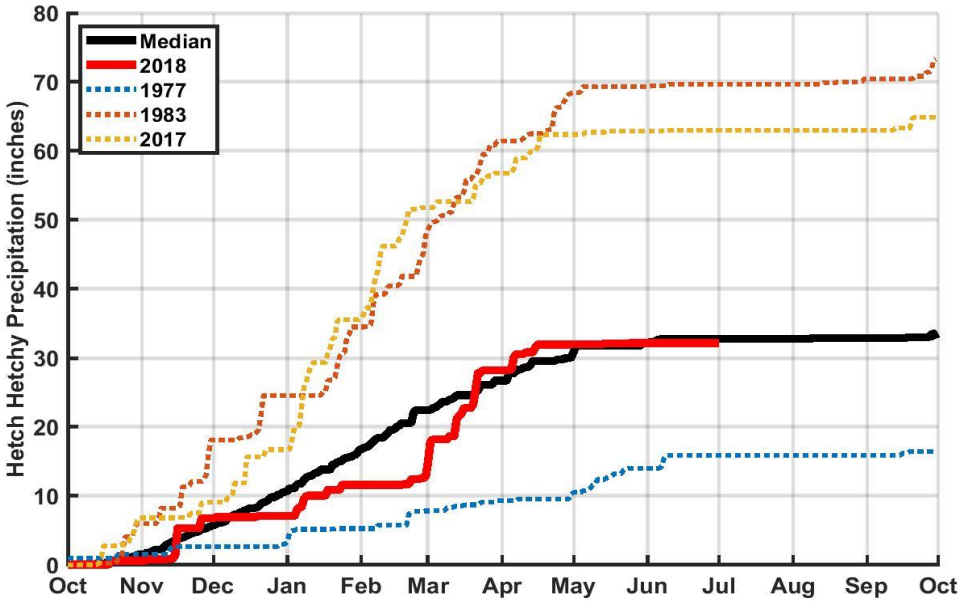

Figure 3: Water year 2018 cumulative precipitation measured at Hetch Hetchy Reservoir through July 1, 2018. Precipitation at the Hetch Hetchy gauge for wet, dry, median, and WY 2017 are included for comparison purposes.

[5]The precipitation index is computed using six Sierra precipitation stations and is an indicator of the wetness of the basin for the water year to date. The index is computed as the average of the six stations and is expressed in inches and in percent.

Tuolumne Basin Unimpaired Inflow

Unimpaired inflow to SFPUC reservoirs and the Tuolumne River at La Grange as of July 1, 2018 is summarized below in Table 2.

Table 2
WY 2018 Calculated reservoir inflows and Water Available to City
As of July 1, 2018

*All flows are in acre feet	June 2018				October 1, 2017 through June 30, 2018			
	Observed Flow	Median[6]	Mean[6]	Percent of Mean	Observed Flow	Median[6]	Mean[6]	Percent of Mean
Inflow to Hetch Hetchy Reservoir	97,329	203,520	206,165	47%	625,382	655,559	644,346	97%
Inflow to Cherry Lake and Lake Eleanor	31,133	78,630	87,355	36%	410,303	422,299	421,404	97%
Tuolumne River at La Grange	154,830	319,268	344,820	45%	1,605,110	1,542,997	1,659,983	97%
Water Available to City	9,355	136,136	188,353	5%	666,636	561,406	716,317	93%

[6] Hydrologic Record: 1919 – 2015

Hetch Hetchy System Operations

Power draft and releases from Hetch Hetchy Reservoir during the month of June totaled 87,328 acre-feet. Total inflows as of July 1st results in a water year Type A for Hetch Hetchy Reservoir through January 1st, 2019. Hetch Hetchy minimum instream release requirements for June were 125 cfs, and for July are 125 cfs. Hetch Hetchy Reservoir filled 6/13 and spilled until 6/30. Current Hetch Hetchy releases are at minimum environmental releases and water deliveries to the City.

Power draft and valve releases from Cherry Lake totaled 7,129 acre-feet during the month of June. The required minimum instream release from Cherry Lake is 15 cfs through September 30th, 2018. Required minimum release from Lake Eleanor (due to pumping) is 20 cfs through September 15th. Transfer from Lake Eleanor to Cherry Lake have ended as both reservoirs are at seasonal target storage.

Regional System Treatment Plant Production

The Harry Tracy Water Treatment Plant average production rate for June was 29 MGD. The Sunol Valley Water Treatment Plant production for the month was 15 MGD.

Local System Water Delivery

The average June delivery rate was 227 MGD which is a 8% increase over the May delivery rate of 211 MGD.

Local Precipitation

Dry and seasonably cool conditions persisted throughout the month, below normal rainfall was recorded at all watershed gages. The rainfall summary for June is presented in Table 3.

Table 3
Precipitation Totals at Three Local Area Reservoirs for June 2018

Reservoir	Month Total (inches)	Percentage of Average for the Month	Water Year to Date [7] (inches)	Percentage of Average for the Year-to-Date [7]
Pilarcitos	0.05	14 %	29.02	77 %
Lower Crystal Springs	0.01	6 %	19.78	75%
Calaveras	0.00	0 %	14.03	67 %

[7] WY 2018: Oct. 2017 through Sep. 2018.

Snowmelt and Water Supply

The snowpack as measured by the upcountry snow pillows has melted out (Figure 4). Some isolated snowpack remains above 10,000 ft.

Inflows have peaked at all upcountry reservoirs as warm weather has melted the snowpack. Hetch Hetchy Reservoir storage remains within seasonal targets. At Cherry Lake, storage is at our seasonal targets, and we have been drafting water for recreation flows through Holm Powerhouse. Lake Eleanor was drawn down via the Cherry / Eleanor Diversion in June. Total system storage is near 94% as the upcountry reservoirs are managed for summer storage recession. Water Bank is full and projected to debit throughout July to maintain upcountry storage through the summer and fall.

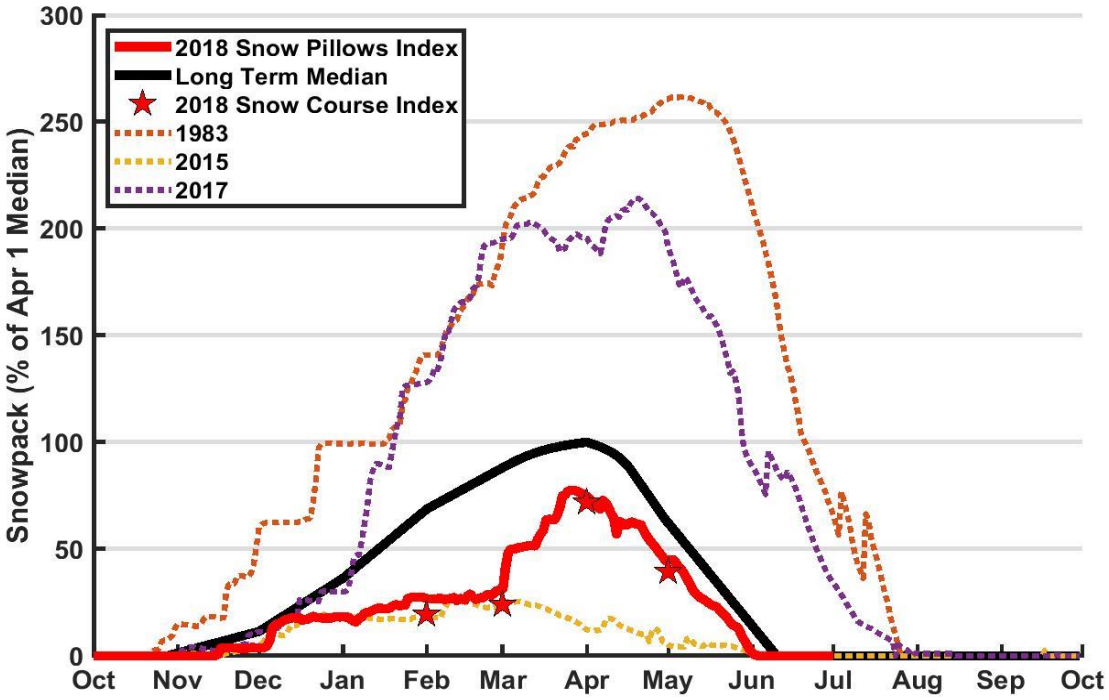

Figure 4: Tuolumne Snow Pillow and Snow Course Indices.

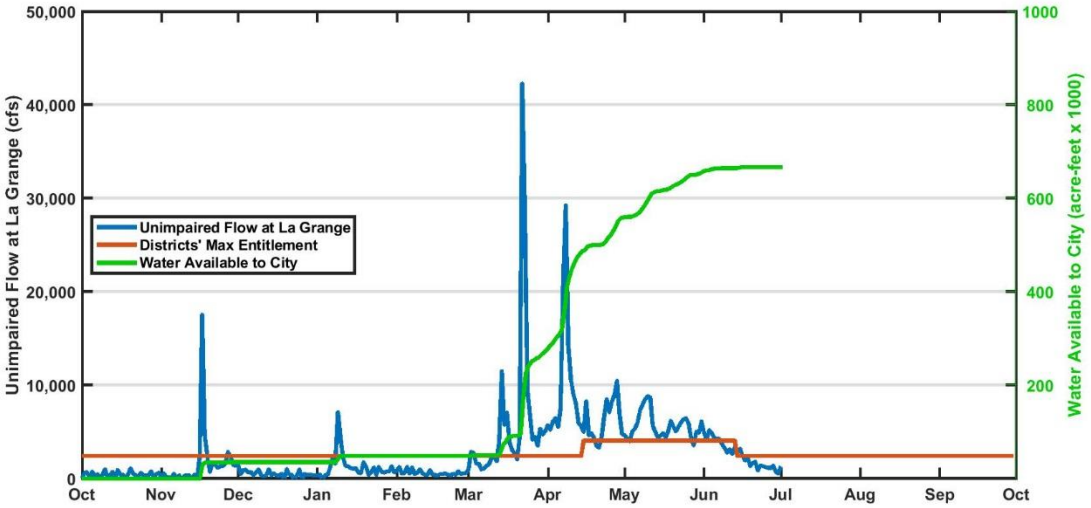

Figure 5: Calculated unimpaired flow at La Grange and the allocation of flows between the Districts and the City. Current Water Available to the City is 666,636 acre-feet in WY2018.

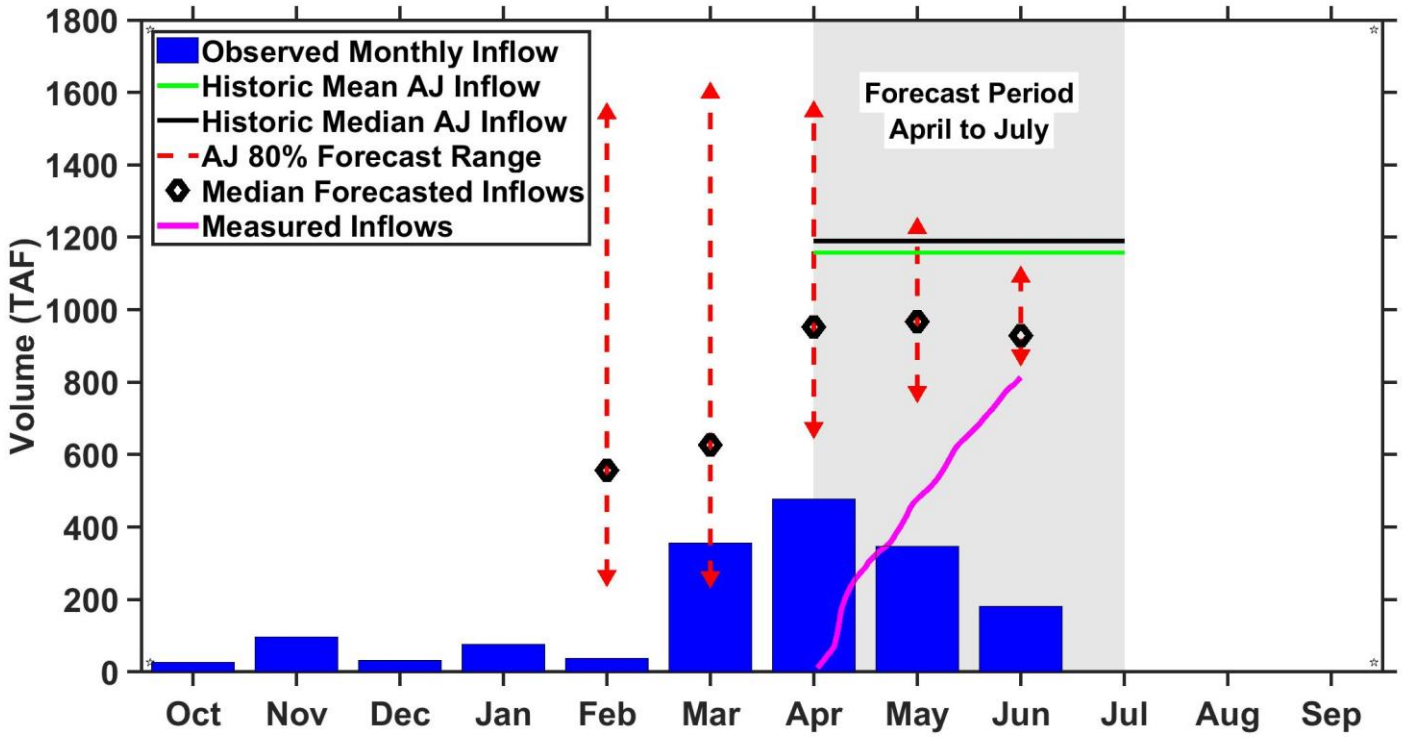

Figure 6: Water year 2018 conditions for the Tuolumne River at La Grange and for the 80% water supply forecast range (triangles represent the 90% and 10% forecasts, the open diamond represents the median forecast). Below average May and June precipitation lead to a minor lowering of the median inflow forecast, and a significant narrowing of the forecast range.