

San Francisco Public Utilities Commission

Hydrological Conditions Report

February 2024

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Aerial view of Cherry Lake Reservoir during late February. March 1st manual snow surveys indicated SWE in the Tuolumne River watershed was at 83% of normal to date or 73% of April 1 normal.

System Storage

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

Table 1. Current System Storage as of March 1, 2024							
	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	324,340		340,830		16,490		95%
Cherry Reservoir ²	247,457		268,811		21,354		92%
Lake Eleanor ³	23,727		22,425		0		100%
Water Bank	570,000		570,000		0		100%
Tuolumne Storage	1,165,524		1,202,066		35,612		97%
Local Bay Area Storage							
Calaveras Reservoir	91,423	29,790	96,670	31,500	5,247	1,710	95%
San Antonio Reservoir	48,538	15,088	52,506	17,109	3,968	1,293	92%
Crystal Springs Reservoir	44,226	14,411	68,743	22,400	24,517	7,989	64%
San Andreas Reservoir	15,018	4,893	18,898	6,158	3,881	1,265	80%
Pilarcitos Reservoir	2,496	813	3,118	1,016	622	201	80%
Total Local Storage	201,699	65,724	239,936	78,183	38,236	12,459	84%
Total System	1,367,223		1,442,002		73,848		95%

¹ Maximum Hetch Hetchy Reservoir storage with drum gates deactivated.

² Maximum Cherry Reservoir storage with flash-boards removed.

³ Maximum Lake Eleanor storage with flashboards removed and 1 board in the log chute.

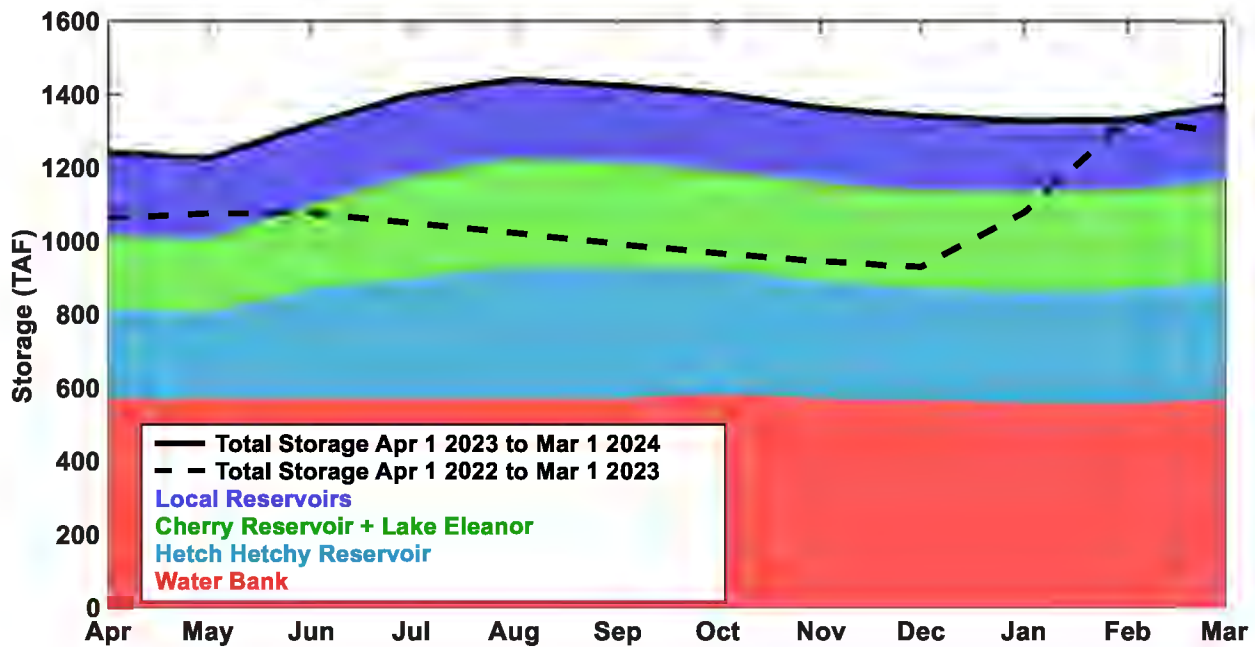


Figure 1: Local and Upcountry Reservoir storage. Color bands show contributions to total system storage. Solid black line shows total system storage for the past 12 months. Dashed black line shows total system storage the previous 12 months.

Hetch Hetchy System Precipitation Index

Current Month: The February 2024 six-station precipitation index was 8.81 inches, which is 139% of the 1991-2020 February median.

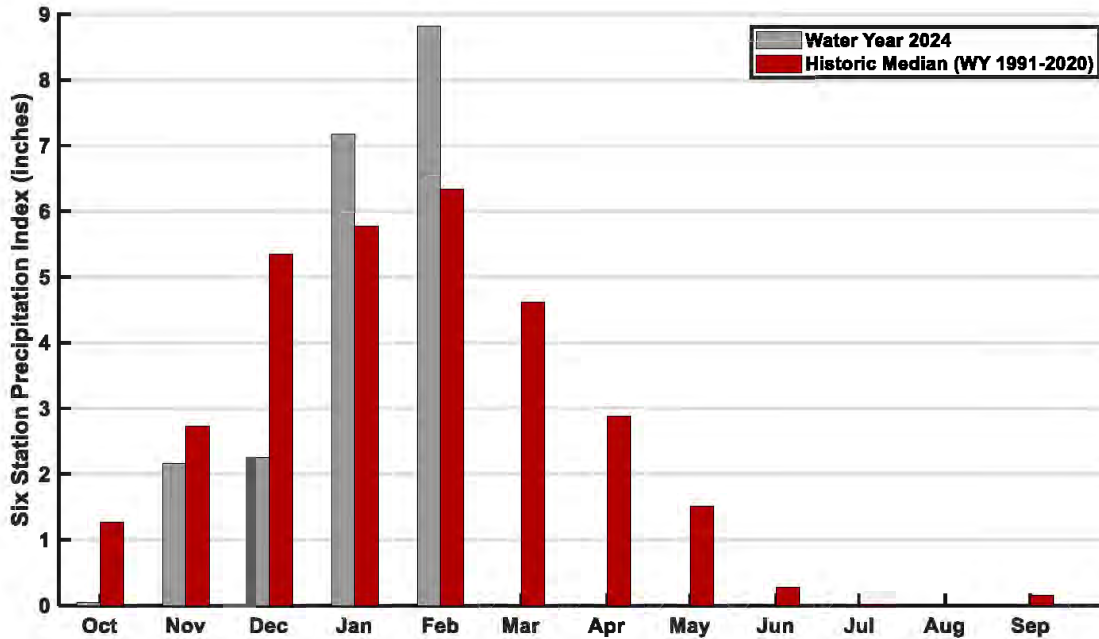


Figure 2: Monthly distribution of the six-station precipitation index relative to the monthly precipitation medians as of March 1. The precipitation index is computed as the average of six Sierra precipitation stations and is an indicator of the overall basin wetness.

Cumulative Precipitation to Date: The cumulative six-station precipitation index for Water Year (WY) 2024 is 20.42 inches, which is 95% of the median to date. The Hetch Hetchy Weather Station received 7.72 inches of precipitation in February resulting in a total of 18.28 inches for WY 2024, or 80% of median for the Water Year to date. The cumulative WY 2024 Hetch Hetchy Weather Station precipitation is shown in Figure 3 in red.

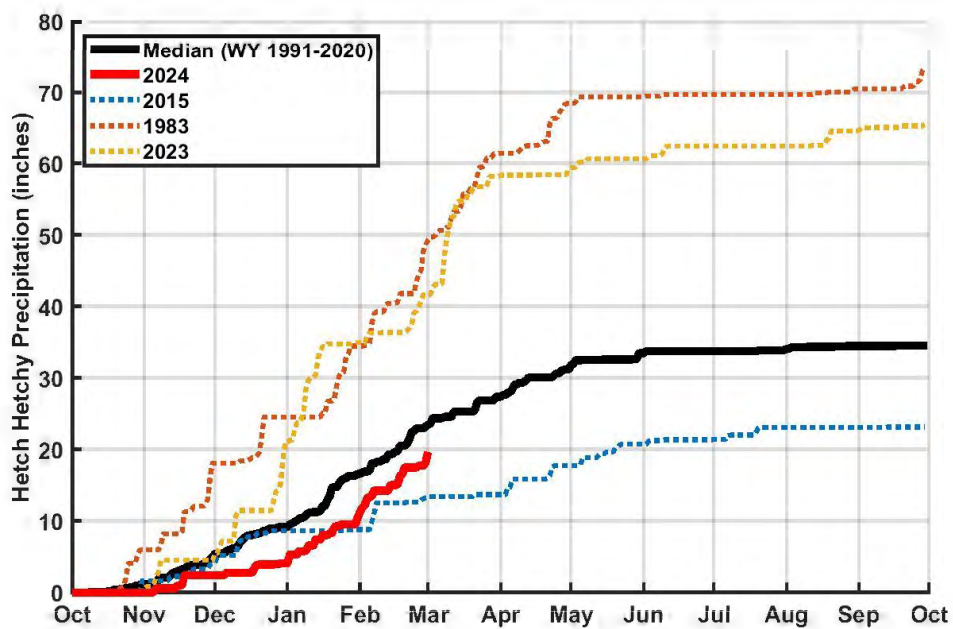


Figure 3: Water Year 2024 cumulative precipitation measured at Hetch Hetchy Weather Station as of March 1. Median cumulative precipitation measured at Hetch Hetchy Weather Station and example wet and dry years are included with Water Year 2024 for comparison purposes.

Tuolumne Basin Unimpaired Inflow

Unimpaired inflow to SFPUC reservoirs and the Tuolumne River at La Grange for February 2024 and Water Year 2024 is summarized below in Table 2.

Table 2. Calculated reservoir inflows and Water Available to City								
* All flows are in acre-feet	February 2024				October 1, 2023 through March 1, 2024			
	Observed Flow	Median ¹	Mean ¹	Percent of Mean	Observed Flow	Median ¹	Mean ¹	Percent of Mean
Inflow to Hetch Hetchy Reservoir	25,081	24,955	28,507	88%	45,170	80,560	94,642	48%
Inflow to Cherry Reservoir and Lake Eleanor	31,968	28,202	34,090	94%	69,268	105,331	117,924	59%
Tuolumne River at La Grange	170,366	110,828	157,781	108%	297,952	321,388	453,206	66%
Water Available to City	49,019	21,977	65,803	74%	52,230	57,889	187,922	28%

¹Hydrologic Record: 1991-2020

Hetch Hetchy System Operations

Water deliveries via the San Joaquin Pipeline (SJPL) remained at 0 MGD for the month of February. SJPL deliveries are scheduled to resume on March 21.

Hetch Hetchy Reservoir power draft and stream releases during the month totaled 12,617 acre-feet. Hetch Hetchy Reservoir required minimum instream release for February was 50 cfs. Required minimum instream release is 50 cfs for March.

Cherry Reservoir power draft and stream releases totaled 27,820 acre-feet for the month of February. The required minimum instream release from Cherry Reservoir for February was 5 cfs. Required minimum instream release is 50 cfs for March.

Lake Eleanor required minimum instream release for February was 5 cfs. Required instream releases is 10 cfs for March. Lake Eleanor is currently full and spilling 75 cfs – spill is expected to continue throughout March.

Regional System Treatment Plant Production

The Harry Tracy Water Treatment Plant production for February was 66 MGD, the Sunol Valley Water Treatment Plant production for the month was 85 MGD.

Regional System Water Delivery

The average February delivery rate was 151 MGD which is the same as the January delivery rate of 151 MGD.

Local Precipitation

The rainfall summary for February 2024 and Water Year 2024 is presented in Table 3.

Weather Station Location	February 2024		October 1, 2023 through March 1, 2024	
	Total (inches)	Percent Mean for the Month (inches)	Total (inches)	Percent of Mean for the Year-To-Date
Pilarcitos Reservoir	8.84	123%	32.33	129%
Lower Crystal Springs Reservoir	6.63	138%	22.96	138%
Calaveras Reservoir	5.30	147%	17.66	137%

*Mean Period = WY 1991-2020

Snowpack, Water Supply and Planned Water Supply Management

Above average precipitation and seasonally cold temperatures during January and February increased the snowpack substantially (Figure 5) and increased seasonal water supply forecasts (Figure 6).

Cumulative Water Available to the City for WY 2024 was 52,230 acre-feet on March 1 (Figure 4). In February, releases from SFPUC reservoirs and intervening flows to Don Pedro Reservoir were sufficient to fill Water Bank. Inflow forecasts above and below SFPUC storage reservoirs (Figure 6) will maintain a full Water Bank throughout the runoff period and allow for filling of Cherry Reservoir, Lake Eleanor and Hetch Hetchy Reservoir, which remain nearly full due to high carryover storage from Water Year 2023.

Due to current reservoir storage, hydrologic conditions, and robust inflow forecasts (Figure 6) Hetch Hetchy Reservoir is drafting via minimum instream releases and Kirkwood Powerhouse Draft, which is scheduled at maximum available generation. Cherry Reservoir is drafting via minimum instream releases and Holm Powerhouse Draft, which is scheduled at near-maximum available generation. Scheduled Holm Powerhouse generation is reducing Cherry Reservoir storage to accommodate runoff through the spring. Lake Eleanor is full and spilling and drafting via minimum instream releases and pumping.

Discretionary valve releases from Hetch Hetchy Reservoir to the Tuolumne River are planned to occur during Spring months, as inflows are forecast to exceed the volume needed to fill the reservoir and for maximum available Kirkwood Powerhouse Draft. SFPUC staff are working with Yosemite National Park staff to plan these releases in the most environmentally beneficial manner, as part of the Upper Tuolumne River Ecosystem Program (UTREP).

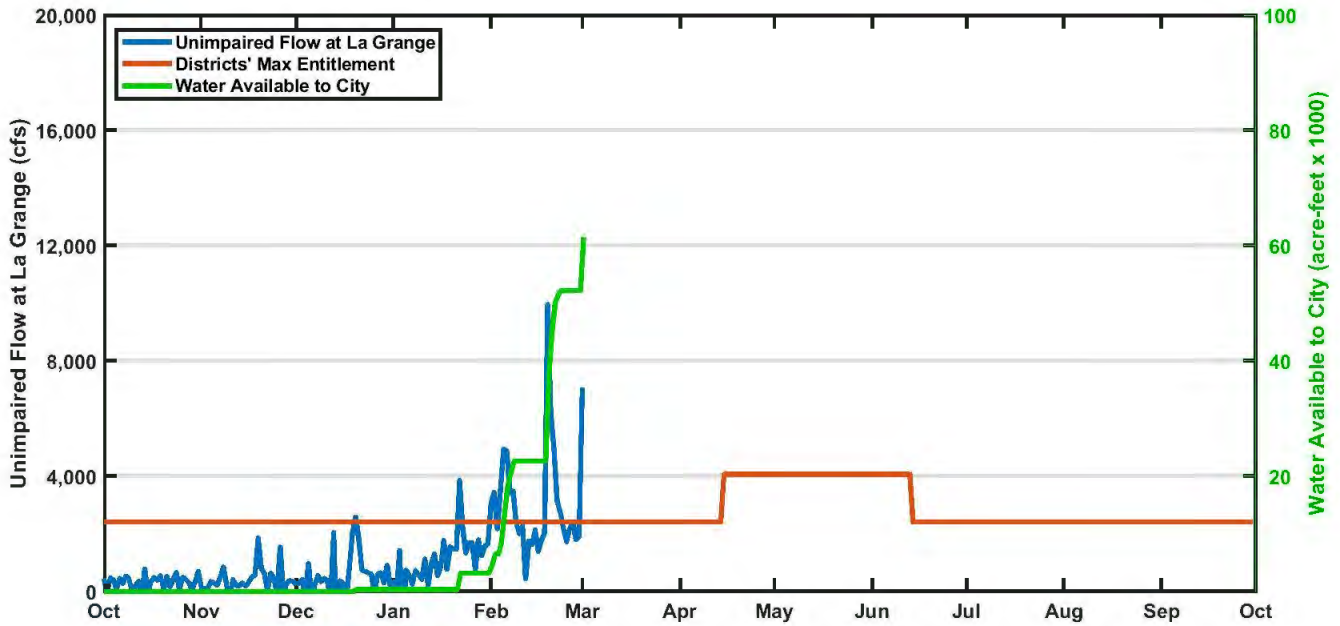


Figure 4: Calculated unimpaired flow at La Grange and the allocation of flows between the Districts and the City.

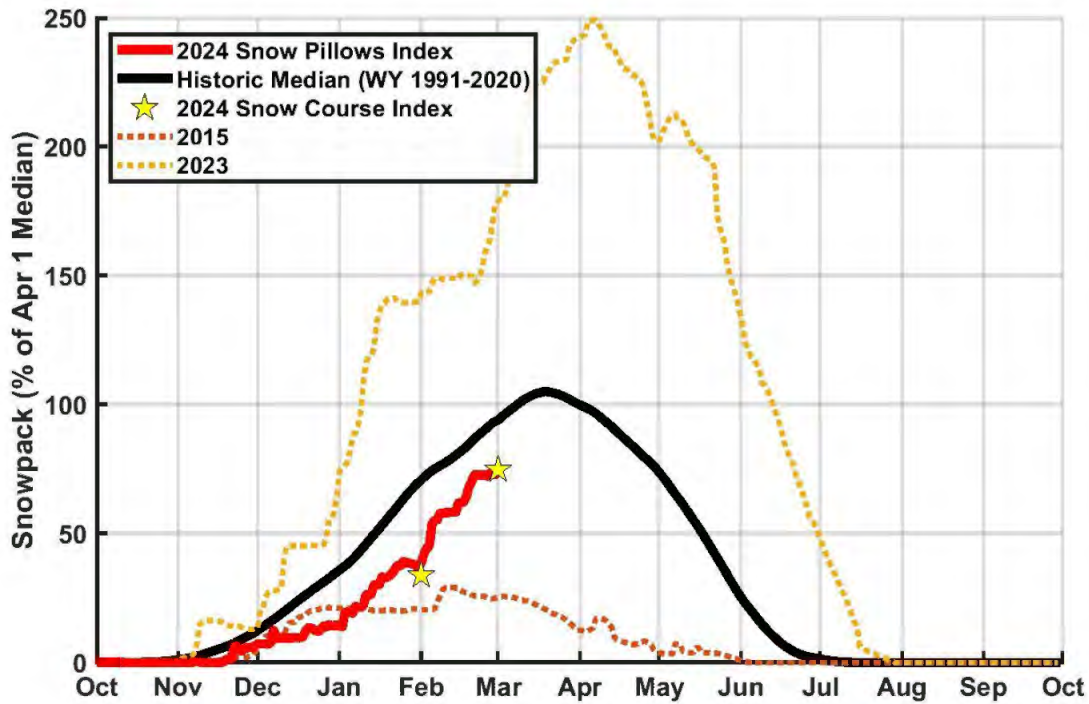


Figure 5: Tuolumne River Basin 10 Station Snow Index as of March 1 (red line), based on real time snow pillow Snow Water Equivalent (SWE) measurements in the Tuolumne Basin. Star indicates the average manual snow course measurements in the Tuolumne Watershed. Median Index and example wet and dry years are included with Water Year 2024 for comparison purposes.

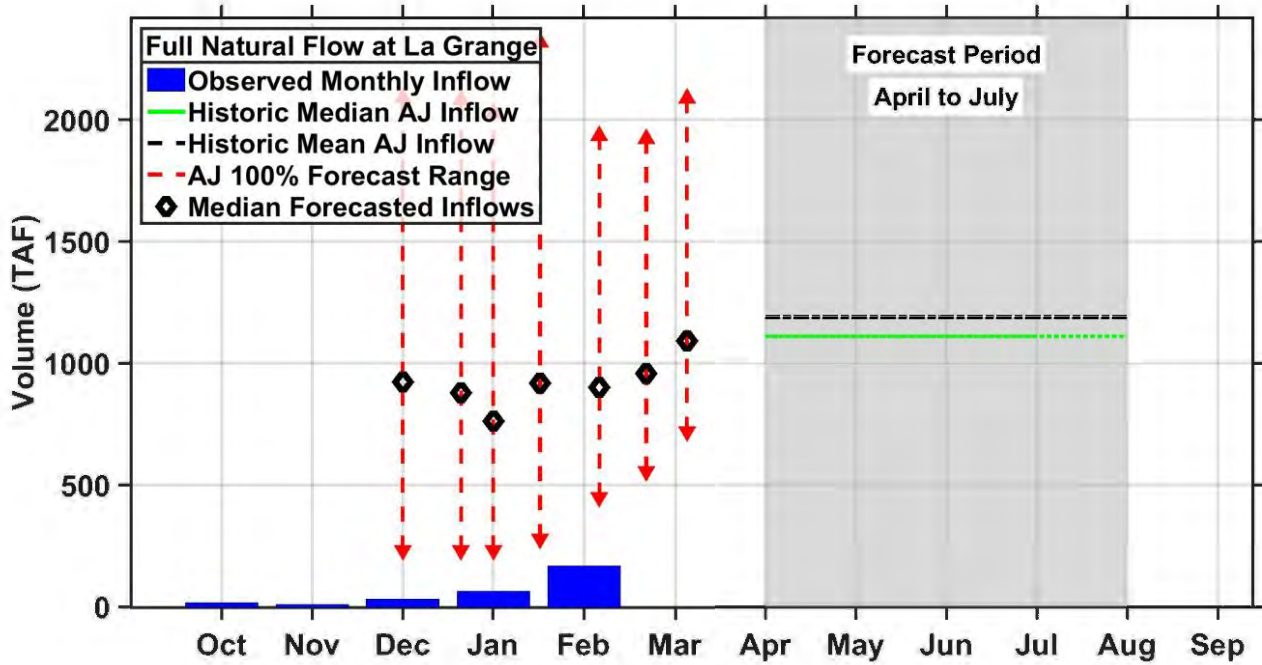


Figure 6: Water Supply Forecast Model of runoff (April to July) on the Tuolumne River at La Grange. This model is driven by precipitation from October to February, and by snow survey data from February through June. The forecast range decreases as time passes due to reduced potential future precipitation.