

San Francisco Public Utilities Commission

Hydrological Conditions Report

January 2024

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Staff from Hetch Hetchy Water and Power, a Division of the San Francisco Utilities Commission, and other cooperating agencies conducted the first manual snow surveys of the year in late January. Snow survey data indicated year-to-date snow water equivalent (SWE) around 50% of normal or 30% 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 February 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	311,876		340,830		28,954		92%
Cherry Reservoir ²	250,373		268,811		18,438		93%
Lake Eleanor ³	23,914		22,425		0		100%
Water Bank	555,392		570,000		14,608		97%
Tuolumne Storage	1,141,555		1,202,066		62,000		95%
Local Bay Area Storage							
Calaveras Reservoir	81,875	26,679	96,670	31,500	14,795	4,821	85%
San Antonio Reservoir	46,304	15,088	52,506	17,109	6,202	2,021	88%
Crystal Springs Reservoir	42,962	13,999	68,743	22,400	25,782	8,401	63%
San Andreas Reservoir	15,661	5,103	18,898	6,158	3,238	1,055	83%
Pilarcitos Reservoir	2,464	803	3,118	1,016	654	213	79%
Total Local Storage	189,265	61,672	239,936	78,183	50,671	16,511	79%
Total System	1,330,820		1,442,002		112,671		92%

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.

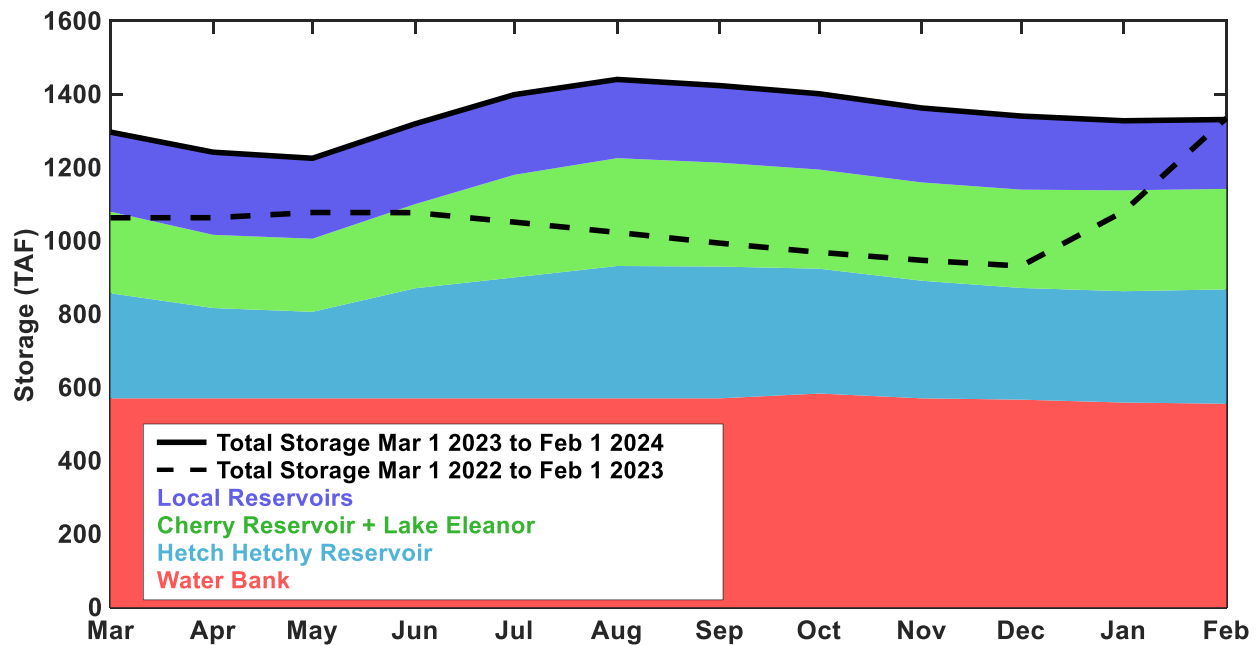


Figure 1: Local and Upcountry Reservoir storage. Color bands show contributions to total system storage. Solid black line shows total system storage for the past 12 months. Dashed black line shows total system storage the previous 12 months.

Hetch Hetchy System Precipitation Index

Current Month: The January 2024 six-station precipitation index was 7.16 inches, which is 124% of the 1991-2020 January median.

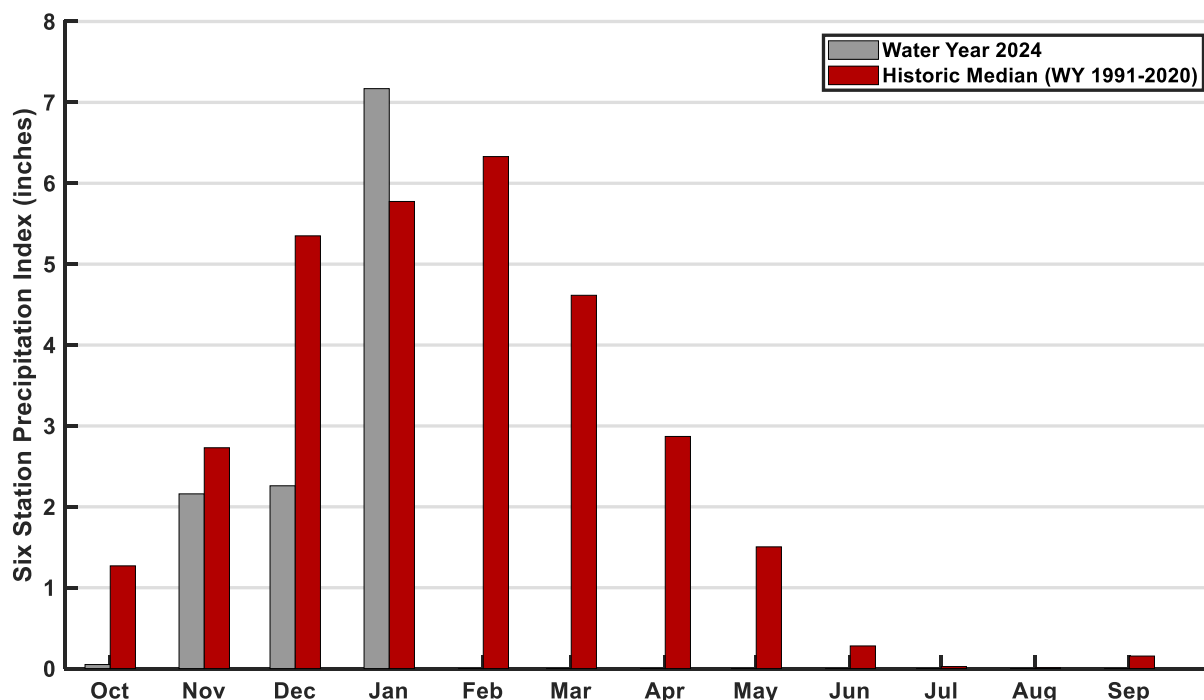


Figure 2: Monthly distribution of the six-station precipitation index relative to the monthly precipitation medians as of February 1. The precipitation index is computed as the average of six Sierra precipitation stations and is an indicator of the overall basin wetness.

Cumulative Precipitation to Date: The cumulative six-station precipitation index for Water Year (WY) 2024 is 11.60 inches, which is 77% of the median to date. The Hetch Hetchy Weather Station received 6.44 inches of precipitation in January resulting in a total of 10.56 inches for WY 2024, or 64% of median for the Water Year to date. The cumulative WY 2024 Hetch Hetchy Weather Station precipitation is shown in Figure 3 in red.

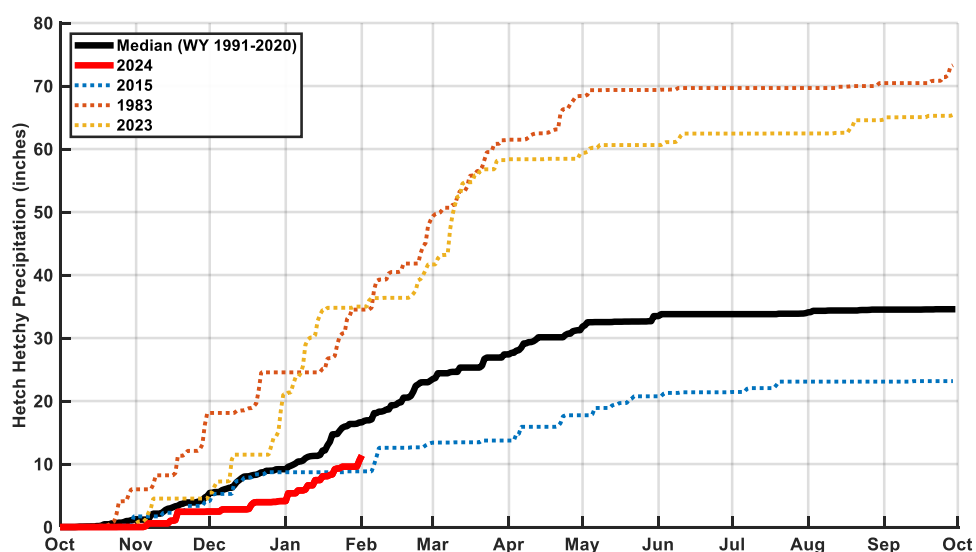


Figure 3: Water Year 2024 cumulative precipitation measured at Hetch Hetchy Weather Station as of February 1. Median cumulative precipitation measured at Hetch Hetchy Weather Station and example wet and dry years are included with Water Year 2024 for comparison purposes.

Tuolumne Basin Unimpaired Inflow

Unimpaired inflow to SFPUC reservoirs and the Tuolumne River at La Grange for January 2023 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	January 2024				October 1, 2023 through February 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	12,139	21,575	29,978	40%	20,089	50,739	66,135	30%
Inflow to Cherry Reservoir and Lake Eleanor	20,872	29,420	35,949	58%	37,301	67,321	83,834	44%
Tuolumne River at La Grange	64,530	94,090	157,807	41%	127,586	200,027	295,425	43%
Water Available to City	2,854	13,089	79,875	4%	3,211	41,905	122,120	3%

¹Hydrologic Record: 1991-2020

Hetch Hetchy System Operations

Water deliveries via the San Joaquin Pipeline (SJPL) remained at 0 MGD for the month of January.

Hetch Hetchy Reservoir power draft and stream releases during the month totaled 4,110 acre-feet. Hetch Hetchy Reservoir required minimum instream release for January was 35 cfs. Cumulative precipitation from October 1 to February 1 has moved releases to a Type B year for February 2024. Required minimum instream release is 50 cfs for February.

Cherry Reservoir power draft and stream releases totaled 19,045 acre-feet for the month of January. The required minimum instream release from Cherry Reservoir for January was 5 cfs. Required minimum instream releases for February will be 5 cfs.

Lake Eleanor required minimum instream release for January was 5 cfs. Required instream releases for February remains 5 cfs.

Regional System Treatment Plant Production

The Harry Tracy Water Treatment Plant production for January was 65 MGD, the Sunol Valley Water Treatment Plant production for the month was 87 MGD.

Regional System Water Delivery

The average January delivery rate was 151 MGD which is an 1.3% decrease below the December delivery rate of 153 MGD.

Local Precipitation

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

Weather Station Location	January 2024		October 1, 2023 through February 1, 2024	
	Total (inches)	Percent Mean for the Month (inches)	Total (inches)	Percent of Mean for the Year-To-Date
Pilarcitos Reservoir	12.48	201%	23.49	132%
Lower Crystal Springs Reservoir	9.09	209%	16.33	138%
Calaveras Reservoir	8.29	242%	12.36	133%

*Mean Period = WY 1991-2020

Snowpack, Water Supply and Planned Water Supply Management

Due to below average precipitation during October and December, the current snowpack (Figure 5) is below average. Above average conditions during January increased the snow pillow index substantially.

Water Year 2024 runoff has been well below mean, resulting in 3,211 acre-feet of Water Available to the City (Figure 4).

Currently, Hetch Hetchy Reservoir is drafting via minimum required streamflow due to the 2024 Winter Shutdown (December 5 – March 16). Cherry Reservoir is drafting via minimum required streamflow and scheduled power generation. Lake Eleanor is drafting via minimum required streamflow and pumping.

Water Bank slightly debited during January as reservoir releases to the Tuolumne River were slightly exceeded by reservoir inflows. Water Bank is expected to remain near full capacity in February.

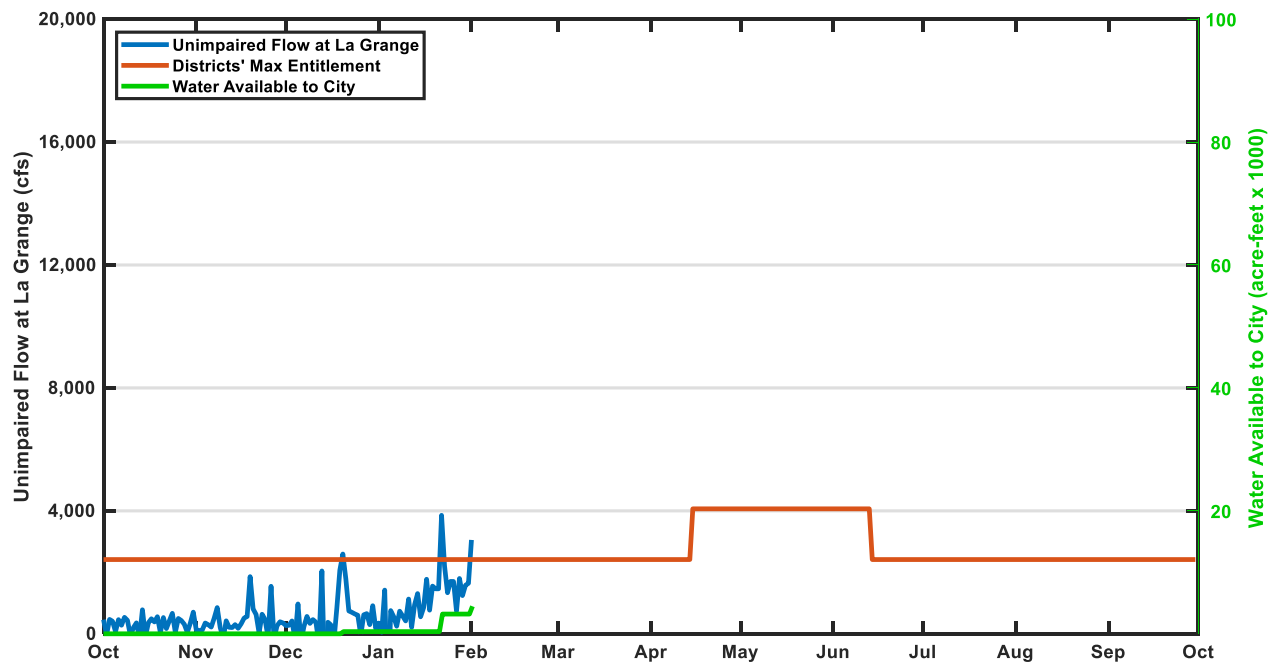


Figure 4: Calculated unimpaired flow at La Grange and the allocation of flows between the Districts and the City.

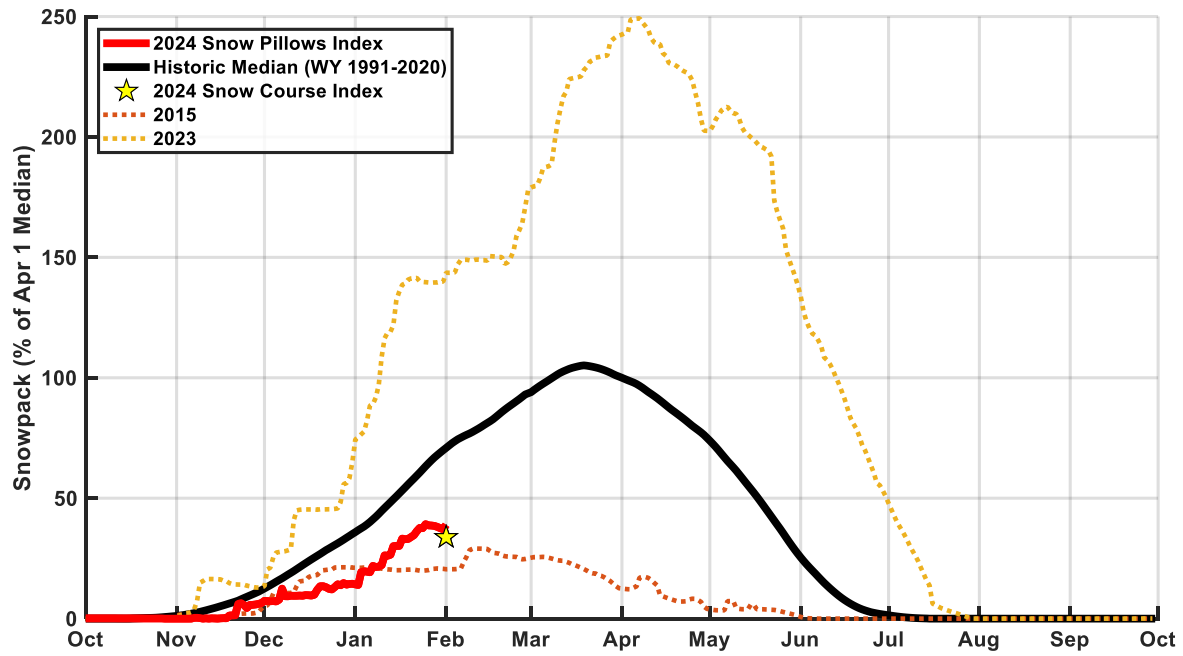


Figure 5: Tuolumne River Basin 10 Station Snow Index as of February 1 (red line), based on real time snow pillow Snow Water Equivalent (SWE) measurements in the Tuolumne Basin. Star indicates the average manual snow course measurements in the Tuolumne Watershed. Median Index and example wet and dry years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