San Francisco Public Utilities Commission
Hydrological Conditions Report
For December 2009

J. Chester, B. McGurk, A. Mazurkiewicz, M. Tsang, January 6, 2010

Current System Storage

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

Table 1
Current Storage
As of January 1, 2010

Reservoir	Current Storage		Maximum Storage		Available Capacity		Percent of Maximum Storage
	Acre-Feet	Millions of Gallons	Acre-Feet	Millions of Gallons	Acre-Feet	Millions of Gallons	
Tuolumne System							
Hetch Hetchy [1/]	252,793		340,830		88,037		74.2%
Cherry [2/]	260,197		268,810		8,613		96.8%
Lake Eleanor [3/]	15,865		23,541		7,676		67.4%
Water Bank	560,112		570,000		9,888		98.3%
Tuolumne Storage	1,088,967		1,203,181		114,214		90.5%
Local Bay Area Storage							
Calaveras [4/]	33,072	10,776	96,824	31,550	63,752	20,774	34.2%
San Antonio	46,032	15,000	50,496	16,454	4,464	1,455	91.2%
Crystal Springs	47,847	15,591	58,377	19,022	10,529	3,431	82.0%
San Andreas	17,770	5,790	18,996	6,190	1,226	400	93.5%
Pilarcitos	2,116	689	3,100	1,010	984	321	68.3%
Total Local Storage	146,837	47,847	227,793	74,226	80,956	26,381	64.5%
Total System	1,235,804		1,430,974		195,170		86.4%

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

Hetch Hetchy System Precipitation Index [5/]

Current Month: The December six-station precipitation index is 6.79 inches, or 120.3% of the average index for the month. The precipitation gauge at Hetch Hetchy received 5.68 inches of precipitation. Most of the precipitation for the month fell early in the month during the first full week of the month. The early storm began with a very low snowline, which brought snowfall all the way down to Moccasin at 900 feet and many parts of the Bay Area. A wetter period later in the week continued to build a significant snowpack in the mountains.

Cumulative Precipitation to Date: The accumulated six-station precipitation index for water year 2010 is 12.19 inches, which is 34.3% of the average annual water year total, or 105.1% of the season-to-date precipitation. The water year cumulative precipitation for the Hetch Hetchy gauge is shown in Figure 1 in red, and is slightly below the median line.

[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.

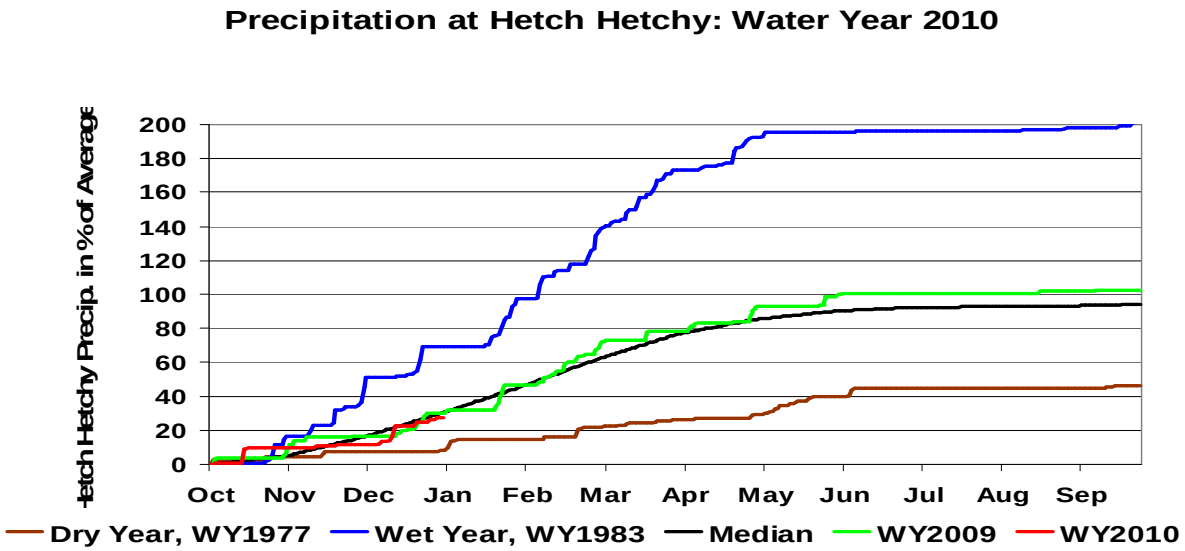

Figure 1: Water year 2010 cumulative precipitation received at Hetch Hetchy Reservoir through the end-of-month December. Precipitation curves for wet, dry, median, and WY 2009 years for the station at Hetch Hetchy are included for comparison purposes.

Tuolumne Basin Unimpaired Inflow

Unimpaired inflow to SFPUC reservoirs and the Tuolumne River at La Grange as of December 31st is summarized below in Table 2. The December inflows to the SFPUC reservoirs were slightly below normal due to the cold storm system which produced snowfall in the Up-country watersheds. The December natural flow at La Grange was significantly below normal. This is a result of the dry antecedent conditions throughout the low elevations and the impact of the major storm event bringing snow all the way down to New Don Pedro shoreline. Season to date inflows are also below normal. In December, there were 1,069 Acre-feet of water available to the City.

Table 2
Unimpaired Inflow
Acre-Feet

	December 2009				October 1, 2009 through December 31, 2009			
	Observed Flow	Median[6]	Average[6]	Percent of Average	Observed Flow	Median[6]	Average[6]	Percent of Average
Inflow to Hetch Hetchy Reservoir	10,401	12,298	20,845	49.9%	37,400	28,667	41,034	91.1%
Inflow to Cherry Reservoir and Lake Eleanor	12,932	13,911	22,838	56.6%	41,686	31,366	44,067	94.6%
Tuolumne River at La Grange	38,609	48,302	86,977	44.4%	103,745	96,030	150,812	68.8%
Water Available to the City	1,069	1,449	36,468	2.9%	20,198	5,366	52,385	38.6%

[6] Hydrologic Record: 1919 – 2005.

Hetch Hetchy System Operations

A total of 18,480 acre-feet of water was released from Hetch Hetchy Reservoir in December to support minimum streamflow releases and SJPL deliveries.

During December, about 14,690 acre-feet of power draft was made from Cherry Reservoir to support the City's Municipal load and District Class 1. Pumping from Eleanor to Cherry during December was done to control future spill at Lake Eleanor. Over 6,972 AF of water was transferred from Eleanor to Cherry in December.

Local System Operations

The Sunol Valley Treatment Plant average plant rate for December was 18 MGD. The Harry Tracy Water Treatment Plant rate averaged 33 MGD for the month.

Local System Water Demand

December water demand averaged 169 MGD, a 17% decrease from the November average of 203 MGD.

Local Precipitation

December precipitation across both East Bay and Peninsula watersheds was 85% of average for the month. Precipitation totals are presented in Table 3.

Table 3
Precipitation Totals At Three Local Area Reservoirs For December 2009

Reservoir	Month Total (inches)	Percentage of Normal for the Month	Year To Date [7] (inches)	Percentage of Normal for the Year-to-Date [7]
Pilarcitos	5.32	74 %	11.55	77 %
Lower Crystal Springs	4.47	96 %	8.98	90 %
Calaveras	3.13	86 %	6.42	82 %

[7] Since July 1 2009

Snowmelt and Water Supply

December began with a relatively wet and cool period which developed the seasonal mountain snowpack. However, since mid-month no major storm systems moved into the region. Some minor precipitation events did occur and maintained near average precipitation conditions. This brought the mountain snowpack to just below normal according to automated snow measuring stations.

The next three months typically result in the most significant precipitation for the water year and have the greatest impact on water supply. The short-term forecast for up to 10 days does not have any significant precipitation events. However, slightly further out in the 11-14 day forecast, there is a potential for stronger storm systems to occur. The seasonal climate forecast continues to call for an increased probability of above average precipitation. Given the current snowpack conditions and the weather outlooks, the water year is tracking slightly below normal to normal. The majority of winter is still ahead and the current conditions are a sound foundation for continued average hydrologic conditions.

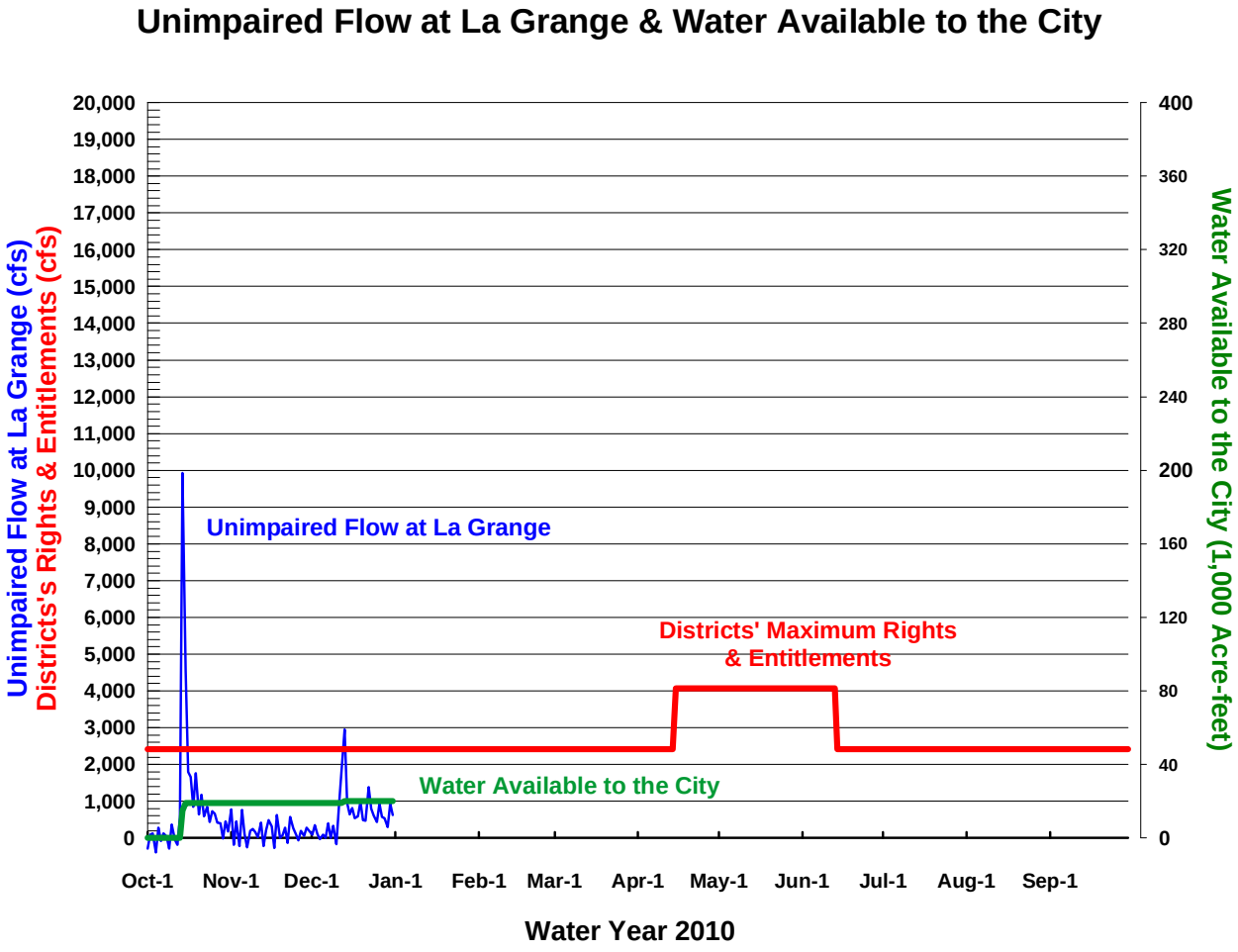

Figure 2: Calculated unimpaired flow at La Grange and the allocation of flows between the Districts and the City. Water available to the City for the period from October 1st, 2009 through December 31st, 2009 was 20,198 acre-feet.

cc	HHWP Records	Dufour, Alexis	Kehoe, Paula	Ramirez, Tim
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