



WATER SUPPLY UPDATE

November 8, 2017

NOTE: Two ALERT items, both on page 3.

Data current as of November 6, 2017, unless otherwise noted.

Meteorology, Climate, and Hydrology

Water Year 2018 Precipitation (Oct 2017 – Sep 2018)

- **Sacramento Valley:** 55% percent of normal for this week (Link: [HERE](#))
- **San Joaquin Valley:** 15% percent of normal for this week (Link: [HERE](#))
- **Tulare Lake Region:** 8% percent of normal for this week (Link: [HERE](#))

WY2018 Snow Accumulation (Link: [HERE](#))

- North Sierra: 0% percent of Apr 1 average; 0% of normal for this week
- Central Sierra: 0% percent of Apr 1 average; 0% of normal for this week
- South Sierra: 0% percent of Apr 1 average; 0% of normal for this week

Looking forward:

- Precipitation forecast for the next 6 days is for 1-6 inches of precipitation above the rim reservoirs in the Sacramento Basin, mostly on November 8-9. The highest forecasted precipitation is above Oroville and Shasta Reservoirs, at 4-6 inches. **Data updated on Nov 7.**
- Some of this precipitation is expected to accumulate as snow, especially in the high Sierra Nevada, due to freezing levels of 5,000-9,000 ft.

Other resources:

- Interactive, real-time meteorology updates available at Ventusky (Link: [HERE](#)).
- Map of 6-day precipitation forecast (Link: [HERE](#)).
- 30- and 90-day seasonal precipitation outlooks are normal (Link: [HERE](#) for 30-day; [HERE](#) for 90).
- Authoritative California climate and meteorology blog (Link: [HERE](#)).

NASA Airborne Snow Observatory

- No updates scheduled until early February.

Looking forward:

- Four surveys scheduled at the begin-of-month, February through May 2018, with two optional flights
- General Managers will discuss whether to apply one optional flight for a begin-of-January survey at the December 4 Water Supply meeting in Visalia.

North of Delta Reservoirs

- **CVP reservoirs:** all are fuller than normal with a total storage of 5,437 TAF, close to the limits for winter flood control operations. Trinity, Shasta, and Folsom are at 128%, 135%, and 135% of their 15-year average storages for this week, respectively.
- **Oroville:** storage is well below normal in response to meeting Fall X2 and limitations on operations resulting from the condition of the spillway.
- CVP and SWP North-of-Delta reservoirs continued the same trend as last week, dropping slightly in the last week due to releases for Fall X2. Reservoir inflows did increase somewhat in last week due to precipitation, but not enough to trigger filling.
- Reclamation's daily Delta water supply report (Link: [HERE](#)).

Looking forward:

- River forecasts indicate that Shasta inflows and Folsom inflows will increase over the next week due to precipitation. At current release levels, and because of Fall X2 requirements, this is not expected to prevent further drawdowns in storage.

Delta/South of Delta Operations

Flow values in this section are rounded to the nearest 100 cfs.

- **Controlling Delta outflow:** Fall X2 (per [DWR Delta Ops report](#))
 - The Fall X2 requirement in November is that all inflow into SWP and CVP upstream reservoirs will be conveyed downstream to augment Delta outflow to maintain X2 up to the locations met in September and October. The Fall X2 target in October 2017 was 80 km.
 - Current X2 location: >81 km
- Delta inflow is 14,600 cfs, up slightly from last week. Inflow is 10,800 cfs on Sacramento River and 2,800 cfs on San Joaquin River at Vernalis
- Delta outflow is 8,100 cfs, up by about 2,700 cfs from last week.
- Jones pumping is 2,800 cfs after reducing to a 3 unit operation on Nov. 1, down from pumping at full capacity (~4,400 cfs). This was done to facilitate implementation of Fall X2 requirement. Banks pumping is 1,400 cfs, which is reduced compared to an average pumping of 1,750 cfs over the prior week. 0 cfs pumping for Cross Valley Canal.
- CVP San Luis has increased slightly over last week to 743 TAF, while SWP San Luis has dropped to 733 TAF (from 768 TAF last week).
- San Luis is expected to fill, possibly in January or February based on current rates of demand and fill.
- Salinity standards are being met with no problem in the Delta because of Fall X2 releases.
- The Delta is currently in Excess conditions so COA accounting is suspended.
- Reclamation South of Delta daily operations report available (Link: [HERE](#)).

Looking forward:

- Pumping at Jones will be reduced to a 2-unit operation on Nov 8 (1,800 cfs), to facilitate implementation of Fall X2 requirement.

Friant Division Operations

Allocations in this section reported by Reclamation SCCAO, per November 3 water supply meeting

- Friant Water Supply Allocation:
 - Class 1 100%
 - Class 2 3% (residual)
- Millerton Lake daily operations report (Link: [HERE](#)), and CDEC information (Link: [HERE](#)).

Looking forward:

- 68 TAF is expected to carry over into 2018
- Storage in Millerton is projected to be 265 TAF on March 1, the beginning of the 2018 contract year. Spill of carry-over supplies is not considered to be a high risk.
- Inflow projections for Millerton (Link: [HERE](#)).

San Joaquin River Settlement Implementation

Restoration Flow Releases

- Releases to the San Joaquin River at Friant Dam have averaged 350 cfs since conclusion of fall pulse flows (Sept. 6 - Sept. 10) by Reclamation. Restoration Flows at Gravelly Ford are targeted at 140 cfs, with 62 cfs targeted at Sack Dam. Restoration Flows are expected to remain constant until the beginning of spring pulse flow operations.

Recapture/Recirculation

- **@ Mendota Pool:** As of Oct. 6, 2017, 6,215 acre-feet had been recaptured at Mendota Pool in the 2017 WY. A spreadsheet was distributed to all Friant contractors with recaptured water in San Luis Reservoir and the water was available for immediate use or transfer. Final recapture numbers for October are not available yet, but Reclamation estimated it would be 950 acre-feet. Updated information is expected from Reclamation by Nov. 10.
- **@ Patterson ID and Banta Carbona ID:** PID began diverting 40 cfs on October 30 and expects to continue at that level for the duration of restoration flow recapture availability or until BCID can start to share in the diversion. There is currently 65 cfs available for recapture, but BCID does not currently have available capacity to move any water and PID is maxed out at 40 cfs.
- **Current Recaptured Supplies in San Luis Reservoir:** Each contractors' supplies were most recently updated by Reclamation and emailed on October 6th. A copy of this update appears on page 4, as Table 1.
- **ALERT:** Districts that want a share of the water recaptured at PID and BCID need to either return a signed Repayment Agreement signature sheet or notify Steve Ottemoeller of your intent to do so.

Looking forward:

Recapture supplies in San Luis Reservoir:

- Recapture at PID and BCID will likely continue at approximately 2,500 to 3,500 acre-feet per month through January, subject to room in the reservoir or conveyance opportunities.
- **ALERT:** Recaptured supplies held in San Luis Reservoir are subject to loss when San Luis Reservoir fills, which is anticipated to occur around or about March 1 (subject to Reclamation's rescheduling guidelines for San Luis Reservoir). Storage capacity will be available for recaptured water in San Luis Reservoir until it fills, after which time stored supplies will need to be evacuated before San Luis Reservoir reaches "sustained drawdown." Once San Luis Reservoir has filled, any future recapture will require a simultaneous destination.

Contractor	July	August	September	October	November	December	January	February	Total (Rounded)
Arvin-Edison WSD	1,108	274	-	-	-	-	-	-	1,382
Chowchilla WD	569	141	-	-	-	-	-	-	710
City of Fresno	-	-	-	-	-	-	-	-	-
City of Lindsay	-	-	-	-	-	-	-	-	-
City of Orange Cove	-	-	-	-	-	-	-	-	-
County of Madera	-	-	-	-	-	-	-	-	-
Delano-Earlimart ID	265	65	-	-	-	-	-	-	330
Exeter ID	68	17	-	-	-	-	-	-	85
Fresno Co. WW #18	-	-	-	-	-	-	-	-	-
Fresno ID	267	66	-	-	-	-	-	-	333
Garfield WD	-	-	-	-	-	-	-	-	-
Gravelly Ford WD	50	12	-	-	-	-	-	-	62
Hills Valley WD	-	-	-	-	-	-	-	-	-
International ID	-	-	-	-	-	-	-	-	-
Ivanhoe ID	2	-	-	-	-	-	-	-	2
Kaweah Delta WCD	26	7	-	-	-	-	-	-	33
Kern-Tulare WD	18	4	-	-	-	-	-	-	22
Lewis Creek WD	-	-	-	-	-	-	-	-	-
Lindmore ID	78	19	-	-	-	-	-	-	97
Lindsay-Strathmore ID	-	-	-	-	-	-	-	-	-
Lower Tule River ID	846	209	-	-	-	-	-	-	1,055
Madera ID	661	164	-	-	-	-	-	-	825
Orange Cove ID	-	-	-	-	-	-	-	-	-
Porterville ID	107	26	-	-	-	-	-	-	133
Saucelito ID	117	29	-	-	-	-	-	-	146
Shafter-Wasco ID	141	35	-	-	-	-	-	-	176
So San Joaquin MUD	160	40	-	-	-	-	-	-	200
Stone Corral ID	-	-	-	-	-	-	-	-	-
Teapot Dome WD	-	-	-	-	-	-	-	-	-
Tri-Valley WD	-	-	-	-	-	-	-	-	-
Tulare ID	501	124	-	-	-	-	-	-	625
TOTALS	4,983	1,232							6,216

Table 1. Monthly Recapture Volume by Friant Contractor in acre-feet. Recapture supplies are held in San Luis Reservoir unless otherwise scheduled for delivery by individual contractors. (Source: e-mail to Friant Contractors, October 6, 2017)

WEDNESDAY WATER DATA REPORT

AS OF DATE November 8, 2017

**FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA**

		THIS YEAR 11/08/17	LAST WEEK	LAST YEAR 11/09/16
RESERVOIR STORAGE (A.F.) CAPACITY			STORAGE	
Southern California Edison:				
Vermillion (Edison)	125,000	59,437	66,320	61,880
Florence	64,400	1,038	1,058	9,524
Huntington	89,000	78,087	82,672	27,265
Shaver	<u>135,300</u>	<u>85,122</u>	<u>91,702</u>	<u>121,590</u>
Sub-total (Big Creek)	413,700	223,684	241,752	220,259
Mammoth Pool	122,000	9,338	8,341	74,737
Redinger	<u>26,100</u>	<u>22,048</u>	<u>22,028</u>	<u>19,510</u>
Sub-total Southern California Edison	<u>561,800</u>	<u>255,070</u>	<u>272,121</u>	<u>314,506</u>
Pacific Gas & Electric:				
Crane Valley (Bass Lake)	45,400	29,852	31,854	31,471
Kerckhoff	<u>4,200</u>	<u>3,463</u>	<u>3,596</u>	<u>2,527</u>
Sub-total P G & E	<u>49,600</u>	<u>33,315</u>	<u>35,450</u>	<u>33,998</u>
TOTAL UPSTREAM STORAGE	611,400	288,385	307,571	348,504
MILLERTON LAKE	<u>520,500</u>	<u>311,853</u>	<u>313,838</u>	<u>225,179</u>
TOTAL STORAGE	1,131,900	600,238	621,409	573,683
INFLOW & RELEASE DATA (C.F.S.)				
Millerton Releases:				
Madera Canal		338	383	0
Friant-Kern Canal		997	1,348	259
San Joaquin River		375	375	415
Spillway		<u>0</u>	<u>0</u>	<u>0</u>
Total Millerton Releases		1,710	2,106	674
Actual Millerton Inflow		1,162	1,892	2,198
Computed Natural River (@Friant)		194	219	846
SAN JOAQUIN RIVER (A.F.)				
This Month:				
Actual to-date		4,102	22,420	21,767
Forecasted DWR 50% forecasts.		15,900	10,400	10,700
April/July Period:				
Actual to-date		N.A.	N.A.	N.A.
Forecasted DWR 50% forecasts.		N.A.	N.A.	N.A.
Last Year Actual				2,641,089
Water Year:				
Actual to-date		26,522	22,420	88,754
Forecasted DWR 50% forecasts.		N.A.	N.A.	N.A.
Last Year Actual				4,395,400
ESTIMATED WATER YET TO BE DELIVERED (A.F.)				
Contract Year Ending February 28		66,512*	80,975*	45,095

*Figure is based on 100% Class I, 3% Class II Residual, minus District usage YTD.

**FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA**

PRECIPITATION DATA

REPORTING STATIONS:	AVERAGE (INCHES)	THIS YEAR 11/08/17		LAST YEAR 11/09/16	
		ACCUMULATIVE TO DATE (INCHES/PERCENT AVG)			
HUNTINGTON					
This Month	4.63	0.00 /	0	0.12 /	3
Seasonal Average*	8.21	2.54 /	31	4.73 /	58
Annual Average	42.65	2.54 /	6	4.73 /	11
CRANE VALLEY					
This Month	3.85	0.05 /	1	0.16 /	4
Seasonal Average*	6.41	1.30 /	20	3.45 /	54
Annual Average	40.54	1.30 /	3	3.45 /	9
FRIANT					
This Month	1.48	0.02 /	1	0.01 /	1
Seasonal Average*	2.47	0.44 /	18	1.42 /	57
Annual Average	14.49	0.44 /	3	1.42 /	10

* Seasonal Average (July - June) is through the current month

** SCE updated Huntington Precipitation

MISC RIVER/RESERVOIR	CAPACITY (A.F.)	STORAGE (A.F.)	RELEASE (C.F.S.)	INFLOW (C.F.S.)
Chowchilla/Buchanan	150,000	85,767	0	0
Fresno/Hidden	90,000	15,458	0	21
Kings/Pine Flat	1,000,000	456,666	979	621
Kaweah/Terminus	185,000	18,180	34	40
Tule/Success	82,314	6,966	28	47
Kern/Isabella	570,000	166,198	376	409

FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA

CVP/SWP SAN LUIS OPERATIONS

		THIS YEAR 11/08/17	LAST WEEK FLOWRATE (C.F.S.)	LAST YEAR 11/09/16 Average
PUMPING INSTANTANEOUS				
	MAX. FLOWRATE (C.F.S.)			
Tracy P.P.	4,600	2,653	4,251	4,250
Banks P.P.	10,000	1,437	2,289	6,198
MONTH TO DATE				
Tracy P.P.		37,303	268,240	103,534
Banks P.P.		21,139	87,082	104,221
SEASON TO DATE (Since October 1)				
Tracy P.P.		305,543	268,240	337,921
Banks P.P.		108,221	87,082	279,864
SAN LUIS RESERVOIR CAPACITY				
	(A.F.)		(A.F.)	
Federal	980,000	745,187	738,334	205,931
State	1,060,000	708,563	763,614	483,649
Total	2,040,000	1,453,750	1,501,948	689,580
SAN LUIS RESERVOIR				
Federal		44	(176)	4,381
State		(8,210)	(1,887)	8,534

SACRAMENTO-SAN JOAQUIN DELTA FLOW INDICES

	FLOWRATE (C.F.S.)
Delta Outflow Index	8,951
Sacramento River @ Freeport	11,452
San Joaquin River @ Vernalis	2,874
Total Delta Inflow	14,953

**FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA**

CIMIS EVAPOTRANSPIRATION RATES

REPORTING STATION #	REPORTING STATION	YESTERDAY 11/7/2017 (Inches)	TOTAL PAST 7 DAYS (Inches)	NORMAL PAST 7 DAYS (Inches)	VARIANCE FROM NORMAL (%)	NORMAL NEXT 7 DAYS* (Inches)
5	Shafter	0.09	0.57	0.58	-2	0.49
15	Stratford	0.09	0.56	0.62	-10	0.53
39	Parlier	0.08	0.48	0.50	-4	0.42
80	Fresno State	0.09	0.50	0.53	-6	0.46
86	Lindcove	0.09	0.51	0.51	0	0.43
125	Arvin-Edison	0.09	0.58	0.60	-3	0.52
142	Orange Cove	0.09	0.55	0.56	-2	0.48
148	Merced	0.07	0.53	0.52	2	0.46
169	Porterville	0.08	0.46	0.52	-12	0.45
182	Delano	0.07	0.53	0.52	2	0.44
188	Madera II	0.08	0.41	0.51	-20	0.46

FRIANT WATER AUTHORITY
SAN JOAQUIN RIVER AND ASSOCIATED WATER DATA

CROP COEFFICIENTS

8-Nov-17

Crop (Description)	Today	Avg. Prev. 7 Days	Avg. Next 7 Days
Alfalfa (average)	0.95	0.95	0.95
Almonds (Feb. 20 leafout, Nov. 15 leafdrop)	0.63	0.66	0.59
Almonds (Mar. 1 leafout, Nov. 15 leafdrop)	0.63	0.67	0.59
Beans (Apr. 1 plant date, Aug. 1 harvest)	0.00	0.00	0.00
Beans (May 1 plant date, Aug. 15 harvest)	0.00	0.00	0.00
Beans (Jun. 1 plant date, Sep. 15 harvest)	0.00	0.00	0.00
Citrus (year round)	0.65	0.65	0.65
Corn (Apr. 15 plant date, Sep. 15 harvest)	0.00	0.00	0.00
Cotton (Apr. 1 plant date, Sep. 20 defoliate)	0.00	0.00	0.00
Cotton (Apr. 15 plant date, Oct. 1 defoliate)	0.00	0.00	0.00
Cotton (May 1 plant date, Oct. 1 defoliate)	0.00	0.00	0.00
Wheat, Oats, Barley (Dec. 1 plant date, Jun. 1 harvest)	0.00	0.00	0.00
Grapes, Raisin (Mar. 15 leafout, Oct. 15 leafdrop)	0.00	0.00	0.00
Grapes, Table (Mar. 15 leafout, Oct. 15 leafdrop)	0.00	0.00	0.00
Kiwi (Mar. 15 leafout, Nov. 1 leafdrop)	0.00	0.00	0.00
Melons (Apr. 1 plant date, Jul. 15 harvest)	0.00	0.00	0.00
Melons (May 1 plant date, Aug. 15 harvest)	0.00	0.00	0.00
Melons (Jun. 1 plant date, Sep. 20 harvest)	0.00	0.00	0.00
Melons (Jul. 1 plant date, Oct. 10 harvest)	0.00	0.00	0.00
Olives (year round)	0.75	0.75	0.75
Pasture Grass	0.65	0.66	0.64
Pistachio (Apr. 1 leafout, Nov. 15 leafdrop)	0.39	0.41	0.37
Safflower (Mar. 1 plant date, Aug. 1 harvest)	0.00	0.00	0.00
Low Chilling Stone Fruit (Feb. 15 leafout, Dec. 1 leafdrop)	0.78	0.80	0.75
Stone Fruit (Mar. 1 leafout, Nov. 15 leafdrop)			
[Peach, Nectarine, Plum, Apricot]	0.69	0.72	0.67
Late Stone Fruit (Mar. 16 leafout, Nov. 1 leafdrop)	0.00	0.00	0.00
Soft Fruit (Apr. 1 leafout, Nov. 15 leafdrop)			
[Apple, Pear]	0.37	0.41	0.34
Tomato (Mar. 1 plant date, Jul. 20 harvest)	0.00	0.00	0.00
Tomato (Apr. 1 plant date, July 30 harvest)	0.00	0.00	0.00
Walnut, Early (Mar. 15 leafout, Nov. 1 leafdrop)	0.00	0.04	0.00
Walnut, Late (Apr. 1 leafout, Nov. 1 leafdrop)	0.00	0.04	0.00

*NOTE: This information is a reproduction of information compiled by Kings River Conservation District.
This information is provided as a general guideline and may not exactly be reflective of all
locations or varieties.*