

# **Water Supply Briefing**

Water Operations Department

February 10, 2015

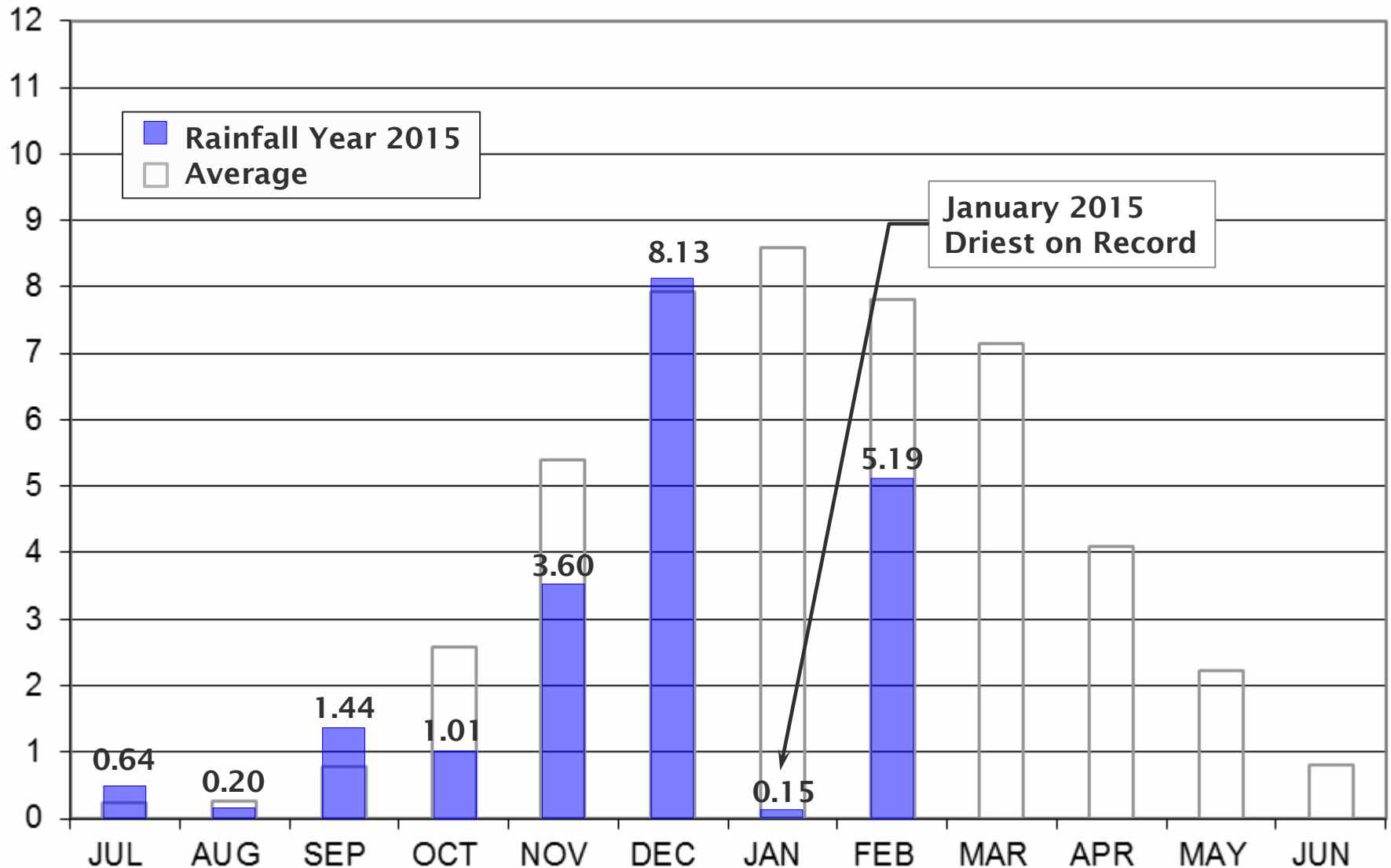
# Water Supply Briefing



- Current Water Supply
- California Water Supply
- Water Supply Projections
- Water Supply Schedule

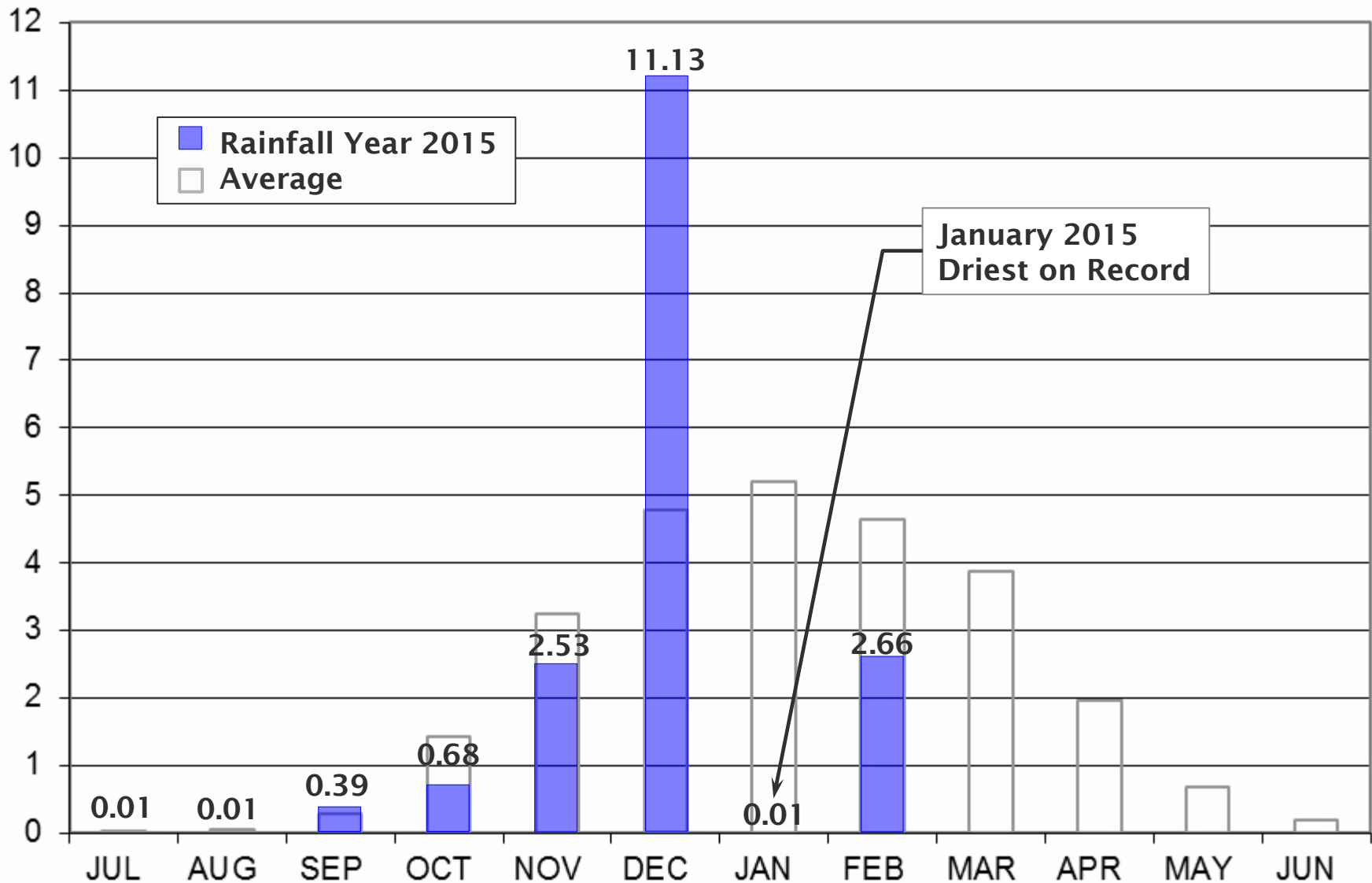
# Current Water Supply

## Mokelumne Precipitation



# Current Water Supply

## East Bay Precipitation



# Current Water Supply

## Precipitation & Snow



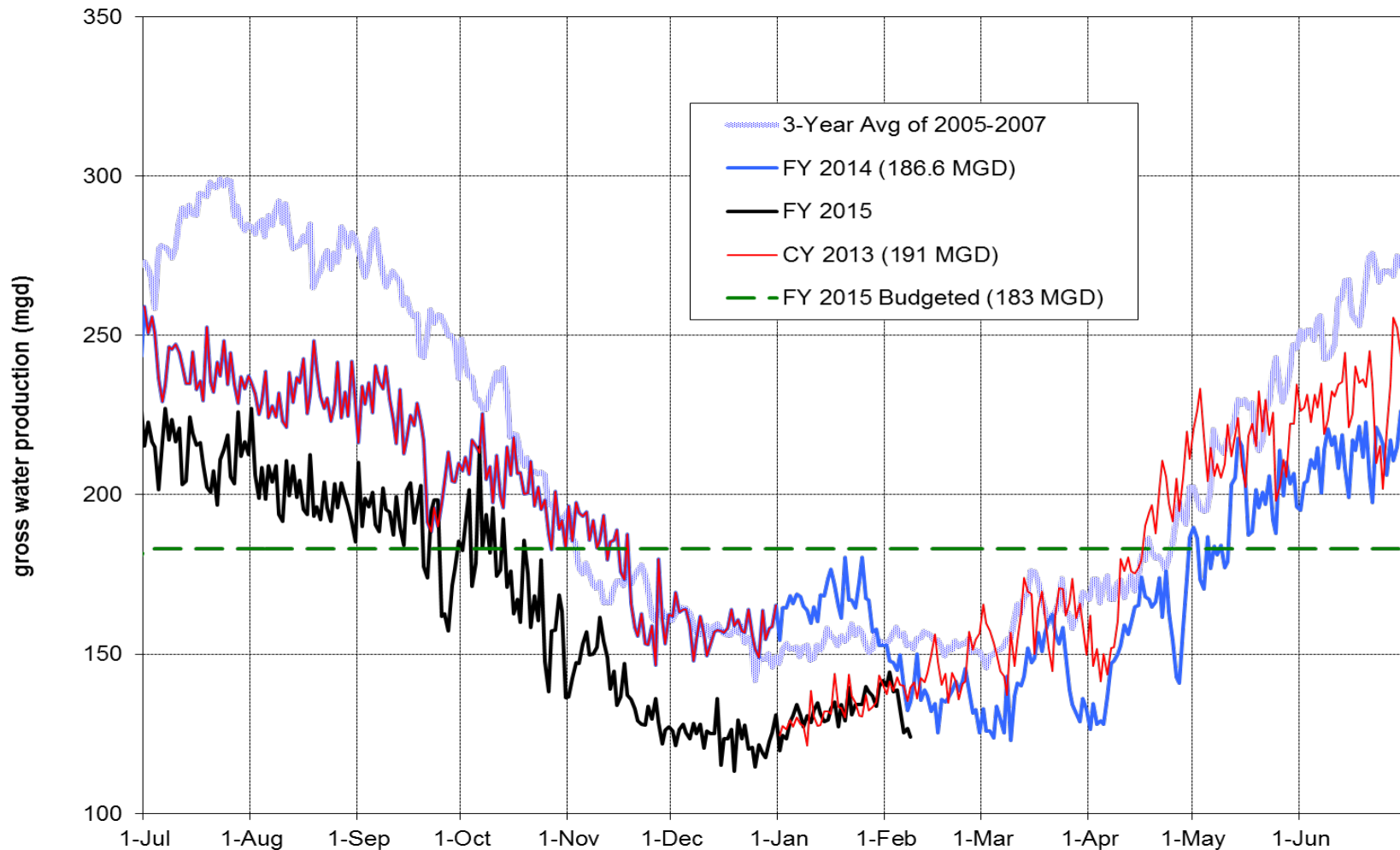
| <b>As of 02/09/15</b>          | <b>Cumulative Precipitation</b> | <b>% of Average</b> |
|--------------------------------|---------------------------------|---------------------|
| <b>East Bay</b>                |                                 |                     |
| East Bay Watershed             | 17.36"                          | 104%                |
| <b>Mokelumne Basin</b>         |                                 |                     |
| 4-Station Average              | 20.35"                          | 71%                 |
| Caples Lake Snow Depth         | 21"                             | 31%                 |
| Caples Lake Snow Water Content | 8.8"                            | 39%                 |

# Current Water Supply

## Gross Water Production



Water Production - Daily Average



# Current Water Supply

## Water Savings



February 11, 2014 through February 8, 2015

|  | Feb<br>(11 – 28) | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov   | Dec   | Jan  | Feb<br>(1 – 8) |
|--|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|----------------|
| Actual Savings<br>based on<br><b>Water Production</b>    | 6.8%             | 11.3% | 14.4% | 10.6% | 8.2%  | 11.3% | 13.0% | 13.3% | 15.2% | 20.5% | 21.5% | 0.0% | 6.3%           |
| Actual Savings<br>based on<br><b>Metered Consumption</b> | 3.2%             | 12.5% | 14.3% | 12.8% | 10.8% | 13.2% | 14.7% | 14.5% | 16.2% | -     | -     | -    | -              |

# Current Water Supply

## Customer Demands



|                        | Feb 11, 2014 to<br>Feb 8, 2015 |
|------------------------|--------------------------------|
| Avg Demand - 2013      | 192 mgd                        |
| Avg Demand - 2014/2015 | 170 mgd                        |
| Savings Goal           | 20 mgd                         |
| Actual Savings         | 22 mgd                         |
| Actual Savings Rate    | 12%                            |

\*Values in million gallons per day (mgd)



# Current Water Supply

## Reservoir Storage



| As of<br>02/08/15 | Current<br>Storage | Percent of<br>Average | Percent of<br>Capacity |
|-------------------|--------------------|-----------------------|------------------------|
| Pardee            | 168,600 AF         | 96%                   | 85%                    |
| Camanche          | 129,790 AF         | 49%                   | 31%                    |
| East Bay          | 116,670 AF         | 89%                   | 77%                    |
| Total System      | 415,060 AF         | 73%                   | 54%                    |

# California Water Supply

## Snowpack – 2014 vs. 2015



### Automated Snow Measurements

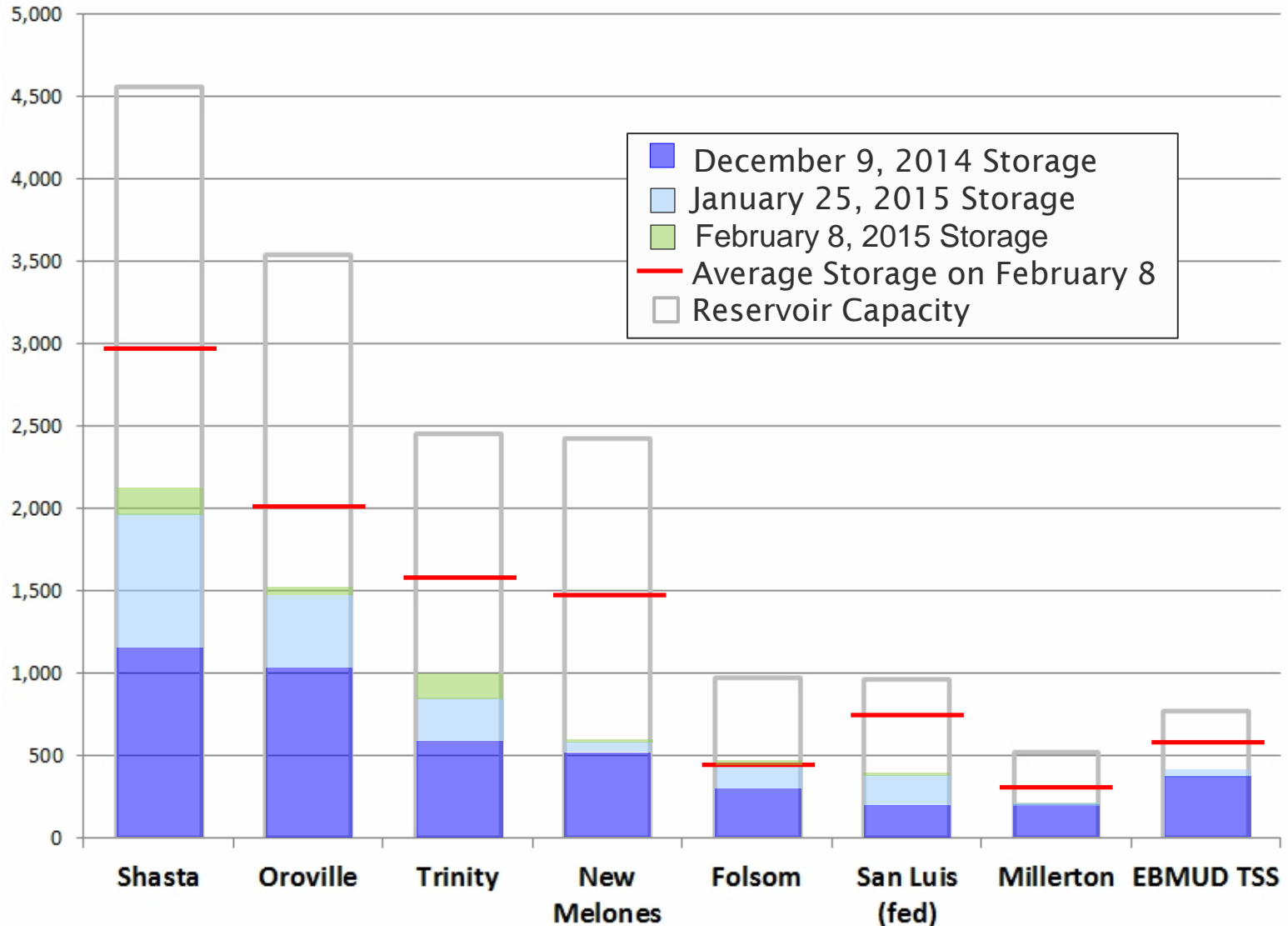
| Year | % of Normal on February 9 |
|------|---------------------------|
| 2014 | 26%                       |
| 2015 | 27%                       |

\*Snow Water Equivalents

- February Snow Survey – Department of Water Resources' performed limited manual snow station readings

# California Water Supply

## Reservoir Storage – Dec 9 Comparison



# California Water Supply

## DWR – State Water Project (SWP)



Oroville Dam

## State Water Project

- Supplies 29 water agencies (25 million Californians and 750,000 acres of farmland)
- Delivers water to two-thirds of California's population

## Water Allocation

- 5% for WY2014
- 10% for WY2015 – Initial allocation (December 1, 2014)
- 15% for WY2015 – Increased allocation (January 15, 2015)

# California Water Supply

## USBR – Central Valley Project (CVP)

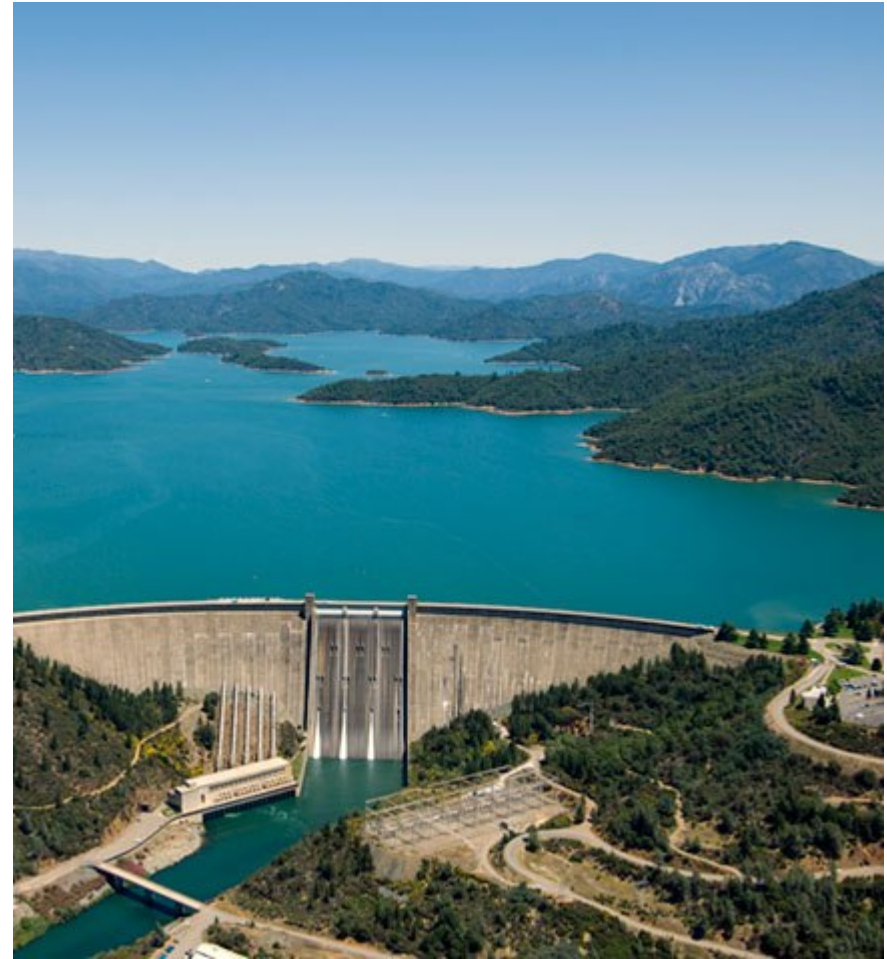


## Central Valley Project

- Supplies about a million California homes and 3 million acres of agricultural land
- Dedicates water to support fish and wildlife habitat
- EBMUD CVP Contract max annual drought supply = 133 TAF

## Water Allocation

- 50% for WY2014
- WY2015 initial allocation expected in late February 2015



Shasta Dam

# California Water Supply

## CVP & SWP Collaboration



## Drought Contingency Plan

- Provide human health & safety needs
- Control saltwater intrusion with fresh water flow in Delta
- Preserve cold water for salmon runs
- Protect fish and wildlife resources

## Temporary Urgency Change Petition

- Request changes to water right permits and D-1641 requirements
- Preserves water supply and manages support for fisheries and wildlife



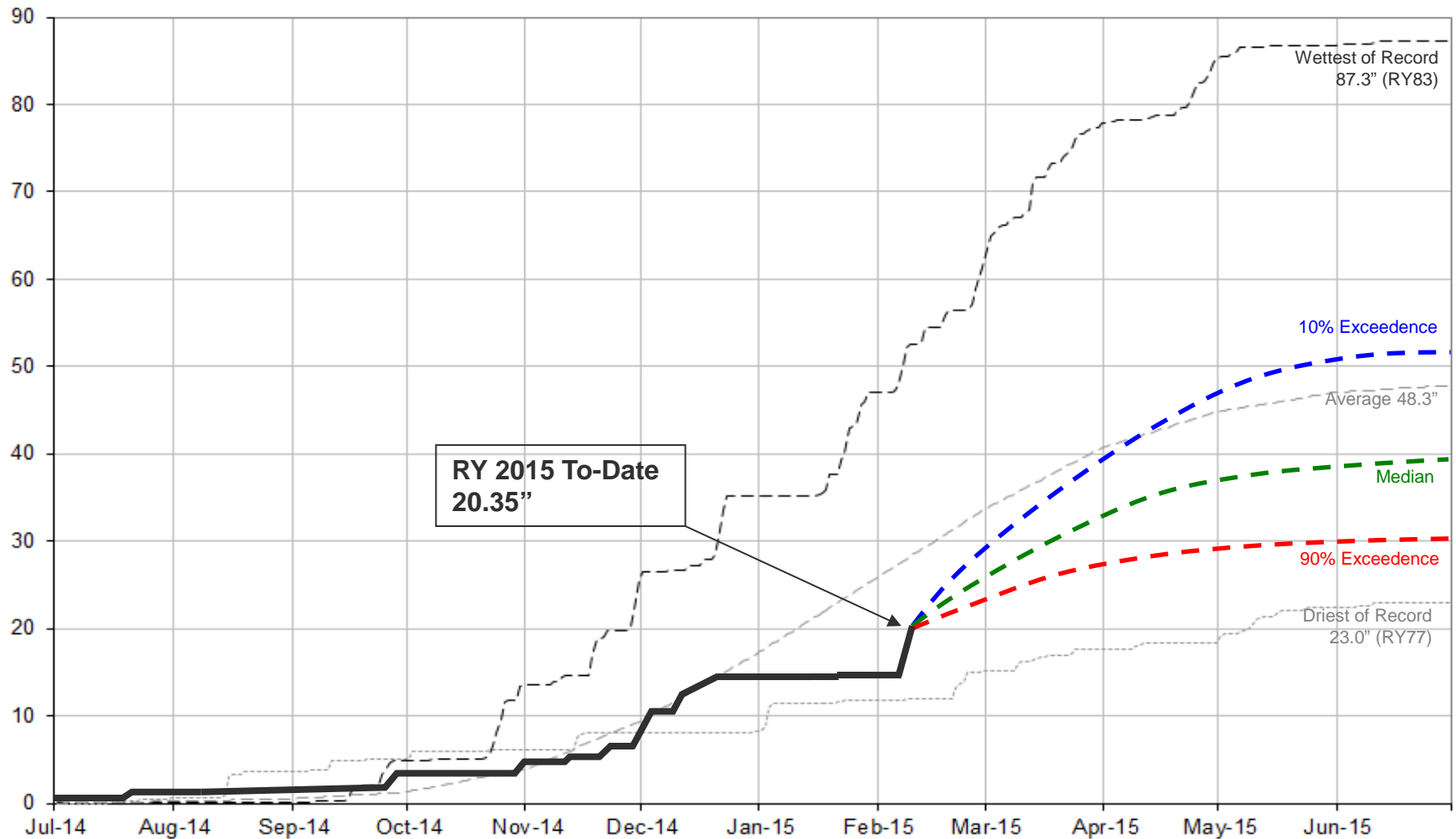
San Francisco Bay Delta

# Water Supply Projections

## Mokelumne Precipitation Rainfall Year 2015



Mokelumne 4-Station Average Precipitation (in)  
Rainfall Year 2015 Projection



# Water Supply Projections

(Runoff Projections as of February 9, 2015)



| <b>Forecast</b>                              | <b>Annual<br/>Runoff</b> | <b>Total System<br/>Storage<br/>(on Sept 30, 2015)</b> |
|--|--------------------------|--|
| 90% Exceedence<br>(9 of 10 years are wetter) | 310 TAF                  | 375 TAF  |
| 50% Exceedence<br>(5 of 10 years are wetter) | 520 TAF                  | 510 TAF  |
| 10% Exceedence<br>(1 of 10 years is wetter)  | 810 TAF                  | 630 TAF  |
| Average Year                                 | 745 TAF                  | 630 TAF  |



# Water Year 2015

## Water Supply Review



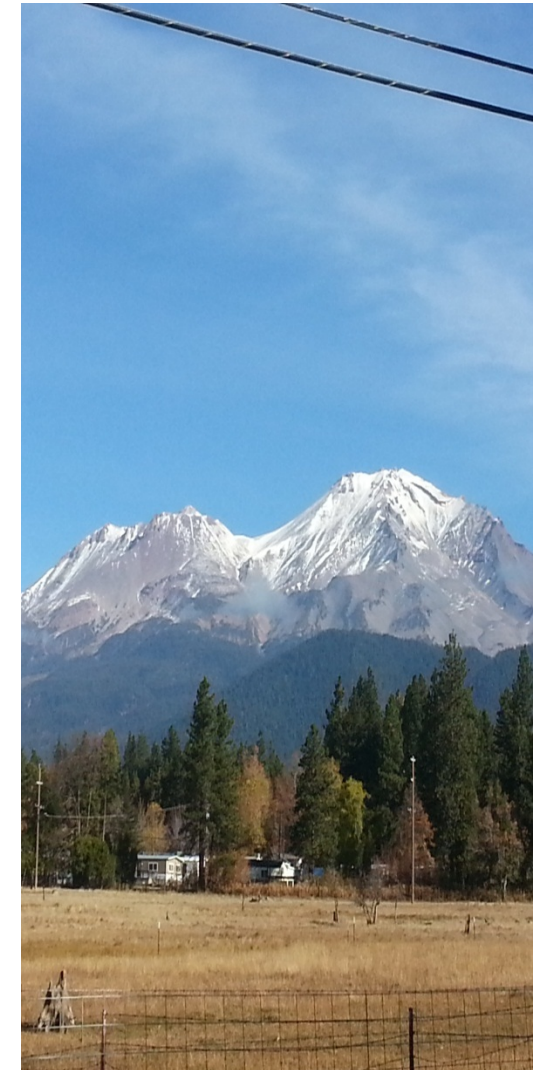
- Mokelumne River basin runoff is 59 TAF
- Projected end of water year storage is 375 – 630 TAF
- Mokelumne River basin season precipitation is 71% of average
- East Bay season to-date precipitation is 104% of average
- Precipitation accumulation season – 59% complete (41% remaining)

# Water Year 2015

## Water Supply Schedule



| Date              | Activity   |
|-------------------|--|
| Feb 1             | • DWR February Snow Survey   |
| Feb 20            | • USBR Initial Allocation  |
| Mar 1             | • DWR March Snow Survey  |
| February to April | • Water Supply Updates<br>• Continue public outreach                                     |
| April 1           | • DWR April Snow Survey  |
| April 28          | • Water Supply Availability and Deficiency Report<br>• Consider approval of Freeport use |



# Hoping for Late Winter Rebound



# WATER SUPPLY ENGINEERING DAILY REPORT

Monday, February 09, 2015

## RESERVOIR STORAGE AND ELEVATION

|                             | <u>WATER SURFACE</u> |       | <u>STORAGE</u> |             | <u>MAXIMUM CAPACITY</u> |                | Release | Spill |
|-----------------------------|----------------------|-------|----------------|-------------|-------------------------|----------------|---------|-------|
|                             | Elevation            | +Gain | +Gain          | +Gain       | Elevation               | Storage        |         |       |
|                             | Feet                 | -Loss | Ac-Ft          | -Loss       | Feet                    | Ac-Ft          | Cfs     | Cfs   |
| <b>MOKELUMNE</b>            |                      |       |                |             |                         |                |         |       |
| Pardee                      | 556.64               | 2.86  | 174,410        | 5810        | 567.65                  | 197,950        | 11      | 0     |
| Camanche                    | 185.83               | -0.06 | 129,550        | -240        | 235.50                  | 417,120        | 226     | 0     |
| <b>EAST BAY</b>             |                      |       |                |             |                         |                |         |       |
| Briones                     | 568.28               | 0.14  | 54,970         | 100         | 576.14                  | 60,510         | 0       | 0     |
| Chabot                      | 218.56               | 0.06  | 7,630          | 20          | 227.25                  | 10,350         | 0       | 0     |
| Lafayette                   | 444.00               | 0.02  | 3,620          | 0           | 449.16                  | 4,250          | 0       | 0     |
| San Pablo                   | 297.18               | 0.00  | 26,220         | 0           | 313.68                  | 38,600         | 0       | 0     |
| Upper San Leandro           | 438.73               | -0.01 | <u>24,340</u>  | <u>-10</u>  | 459.98                  | <u>37,960</u>  | 0       | 0     |
| <b>Total East Bay Res.</b>  |                      |       | <u>116,780</u> | <u>110</u>  |                         | <u>151,670</u> |         |       |
| <b>TOTAL SYSTEM STORAGE</b> |                      |       | <b>420,740</b> | <b>5680</b> |                         | <b>766,740</b> |         |       |

| <b>DISTRIBUTION SYSTEM</b>                |                 |                 |  | <b>MOKELUMNE SYSTEM</b>                        |                |                        |                 |
|---|-----------------|-----------------|--|--|----------------|------------------------|-----------------|
| <b><u>DISTRIBUTION RESERVOIRS</u></b>     |                 |                 |  | <b><u>AQUEDUCT DELIVERIES</u></b>              |                |                        |                 |
|   | Storage         | Operating       |  |  | <u>MG</u>      | <u>Flow Conditions</u> |                 |
|   | <u>MG</u>       | <u>Capacity</u> |  | Line 1   | 24.0           | THROTTLE               |                 |
| Today                                     | 429.0           | 812             |  | Line 2   | 10.5           | SHUTDOWN               |                 |
| Total Previous Day                        | <u>438.0</u>    |                 |  | Line 3   | <u>72.2</u>    | THROTTLE               |                 |
| Total Change                              | -9.0            |                 |  | TOTAL  | 106.7          | 165 Cfs                |                 |
|   |                 |                 |  | FSCC TO MOK AQUEDUCTS                          |                |                        | 0               |
| <b><u>WATER PRODUCTION AND DEMAND</u></b> | Million Gallons | Capacity MGD    |  | <b><u>RIVER FLOWS AND RELEASES</u></b>         |                |                        | <u>Cfs</u>      |
| Lafayette WTP                             | 0.0             | 25              |  | Mokelumne River Natural Flow                   |                |                        | 8339            |
| Orinda WTP                                | 48.0            | 190             |  | Pardee Reservoir Inflow                        |                |                        | 3110            |
| San Pablo WTP                             | 0.0             | 30              |  | Pardee Release to Camanche Res.                |                |                        | 11              |
| Sobrante WTP                              | 20.6            | 50              |  | Pardee Release to JVID                         |                |                        | 0               |
| Upper San Leandro WTP                     | 27.6            | 45              |  | Camanche Release to Mokel. River               |                |                        | 226             |
| Walnut Creek WTP                          | 25.6            | 90              |  |  |                |                        |                 |
| <b><u>TOTAL SURFACE PRODUCTION</u></b>    | 121.8           | 430             |  | <b><u>PG&amp;E CO. STORAGE (Acre-feet)</u></b> |                |                        |                 |
| Miscellaneous(Estimated)                  | 0.4             |                 |  |  |                | Maximum                |                 |
| <b><u>TOTAL WATER PRODUCTION</u></b>      | 122.2           |                 |  |  | <u>Storage</u> | <u>Change</u>          | <u>Capacity</u> |
| Change in Distribution System             | -9.0            |                 |  | Old Reservoirs                                 | 11,682         | -189                   | 26,560          |
| Wash Water from Distribution Sys.         | <u>1.2</u>      |                 |  | Salt Springs Res.                              | 21,766         | 8,014                  | 141,857         |
| <b><u>SYSTEM DEMAND</u></b>               | 130.0           |                 |  | Lower Bear Res.                                | <u>15,377</u>  | <u>2,546</u>           | <u>52,025</u>   |
| East-of-Hills Demand                      | 23.1            |                 |  | Total  | 48,825         | 10,371                 | 220,442         |
| West-of-Hills Demand                      | 106.9           |                 |  |  |                |                        |                 |

| <b>RAW WATER TRANSMISSION</b>          |              |              | <b>PRECIPITATION (Inches)</b>             |              |                     |                       |                       |                     |
|--|--------------|--------------|---|--------------|---------------------|-----------------------|-----------------------|---------------------|
|  | <u>INPUT</u> | <u>DRAFT</u> | <u>THIS YEAR</u>                          |              | <u>AVERAGE YEAR</u> |                       |                       |                     |
|  |              |              | <u>STATION</u>                            | <u>Today</u> | <u>This Month</u>   | <u>Season to-Date</u> | <u>Season to-Date</u> | <u>Season Total</u> |
| Briones Res.                           | 102          | 0            | USL WTP                                   | 0.00         | 2.54                | 18.27                 | 15.88                 | 25.33               |
| San Pablo Res.                         | 0            | 67           | Orinda WTP                                | 0.02         | 3.21                | 21.55                 | 19.75                 | 32.06               |
| U. San Leandro Res.                    | <u>0</u>     | <u>95</u>    | Lafayette Reservoir                       | 0.04         | 2.77                | 16.45                 | 17.61                 | 28.18               |
| <b>TOTAL</b>                           | 102          | 162          | Walnut Creek WTP                          | 0.02         | 4.40                | 16.71                 | 14.5                  | 23.02               |
| <b><u>REMARKS</u></b>                  |              |              | Camp Pardee                               | 0.00         | 3.40                | 14.98                 | 12.56                 | 21.56               |
| WID Canal Diversion = 0 cfs            |              |              | Salt Springs P.H.                         | 0.50         | 5.12                | 19.09                 | 26.76                 | 45.51               |
| Mokelumne River below WID = 211 cfs    |              |              |   |              |                     |                       |                       |                     |
|  |              |              | <b><u>CAPLES LAKE (7,830 FT) DATA</u></b> |              |                     |                       |                       |                     |
| PG&E data as of 4:00 pm previous date. |              |              |   | <u>Today</u> | <u>Average</u>      |                       |                       |                     |
| All other data as of midnight.         |              |              | Snow Depth                                | 24 Inches    | 67 Inches           |                       |                       |                     |
| WTP capacities are sustainable rates.  |              |              | Water Content                             | 8.8 Inches   | 22.6 Inches         |                       |                       |                     |