

# Water Supply Outlook for March 2009

## Conditions improve, but will it be enough to avoid rationing?

In early January 2009, the Metropolitan Water District (Metropolitan) estimated that there was a 1 in 2 chance it would need to implement some level of rationing, starting this July, under its Water Shortage Allocation Plan (WSAP). The remainder of January brought dry conditions and further analysis of the impacts of the recently released Biological Opinion for the Delta smelt. Based on the analysis and lack of precipitation, Metropolitan revised its estimate of the chances of rationing upward to 3 in 4 in early February and indicated that the reductions could be as high as 30%. Since then, heavy precipitation in key watersheds feeding the State Water Project (SWP) has improved conditions such that SWP contractors, including Metropolitan, will likely avoid receiving a record-low allocation in 2009. With precipitation in these watersheds at 146% of normal in February and more rain and snow in the forecast, indications are that the chances of WSAP implementation are now closer to 1 in 2 again, with a lower level of rationing (5% - 10%) likely if any rationing is necessary at all.

While critical, ultimately the 2009 hydrology will be one of many factors that determine if and how much Metropolitan ration its supplies. The Governor's called for rationing, impacts to Metropolitan's finances and rates, and how much of its dwindling water supply reserves it wants to save for future years will all impact these decisions.

### *Precipitation Conditions as of February 25, 2008*

Despite a wet February, California water supply conditions have a ways to go to make up for a critically dry January. Statewide, January 2009 was the eighth driest January on record, with precipitation at about 30 percent of average for the month. However, since February 1, precipitation in watersheds crucial to southern California supplies has improved significantly raising the water year (Oct. 1 – Sept. 31) to date percent of average from 65% to 88%.

Despite the recent rain and snow, runoff levels are well below normal. In addition, the low reservoir storage levels entering the water year require that runoff must be at least 75% of average for the year just to maintain the already low northern California reservoir levels. If the runoff for the year is close to average (95-100%), the northern California reservoirs could be restored to normal levels.

As of the end of January, unimpaired runoff on the Sacramento River was about 2.1 million acre-feet, which is about 36 percent of average. However, conditions have improved significantly as recent cold, wet storms blanketed the entire Sierra Nevada with heavy snowfall accumulations and soaked the valley floors with impressive rainfall totals. On average, basins in the northern reaches of the State performed better than those in the south. Additional precipitation last weekend brought moderate to heavy rainfall totals in many regions of Northern California, as well as significant inflow into many of the large reservoirs. The next runoff forecast is scheduled for March 1st.

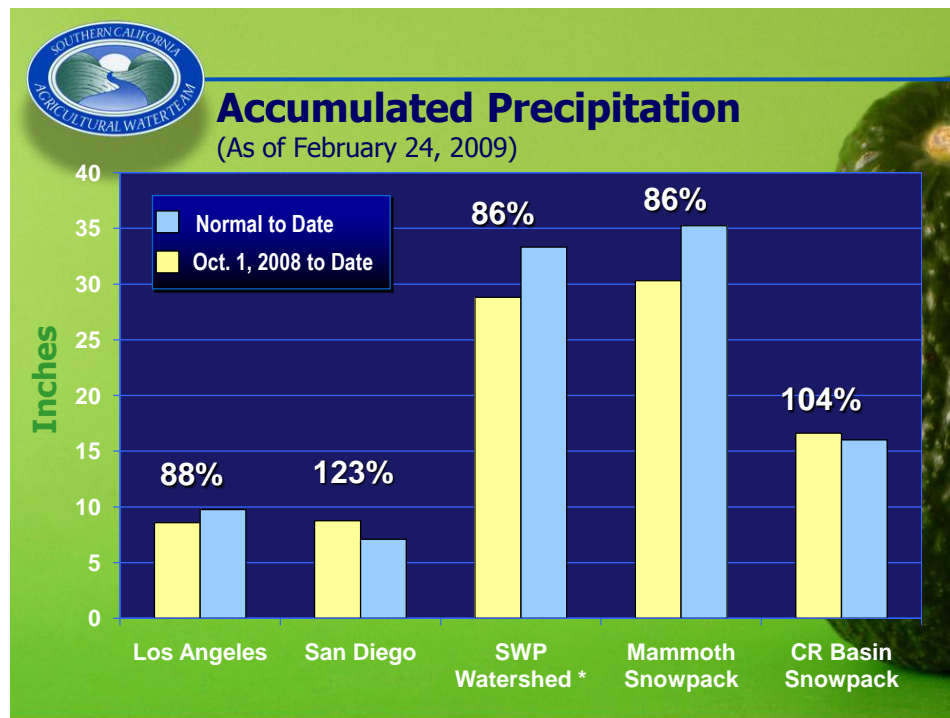
The latest National Weather Service's long-range weather outlook for March 2009, issued February 18, 2009, forecasts average precipitation for all of California. Additionally, current forecasts for interior northern California call for rain and snow for the first 6 days of March.

As shown in the table below, precipitation levels in southern California are deviating from normal with the San Diego area receiving more precipitation than Los Angeles so far this year. Rainfall at the Los Angeles Civic Center was 8.6" or 88% of normal while rainfall at Lindberg Field in San Diego was 8.7" or 123% of normal.

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As for imported supplies, conditions in the State Water Project (SWP) watershed, as measured by the California Department of Water Resources' (DWR) 8-Station Index, have improved dramatically with February precipitation to date already 145% of normal. Following the critically dry January, during which precipitation levels were only 34% of normal, the 8-Station index reading for the year is currently 86% of normal at 17.7". Conditions in the eastern Sierras have also improved significantly with Mammoth Pass precipitation also now at 86% of normal at 30.3 inches as compared to the beginning of February when the percent of normal was just under 70%. Finally, precipitation conditions in the Colorado River Basin continue to track above normal at 104% with 16.6" of precipitation.

One less positive reading is the snow-water content for northern California, which shows that levels are 68% of the April 1 average through February 26, 2009 or 12% lower than the average of 80% for this date on average.



\* DWR Northern Sierra 8-Station Precipitation Index

## Key Storage Conditions as of February 24, 2009

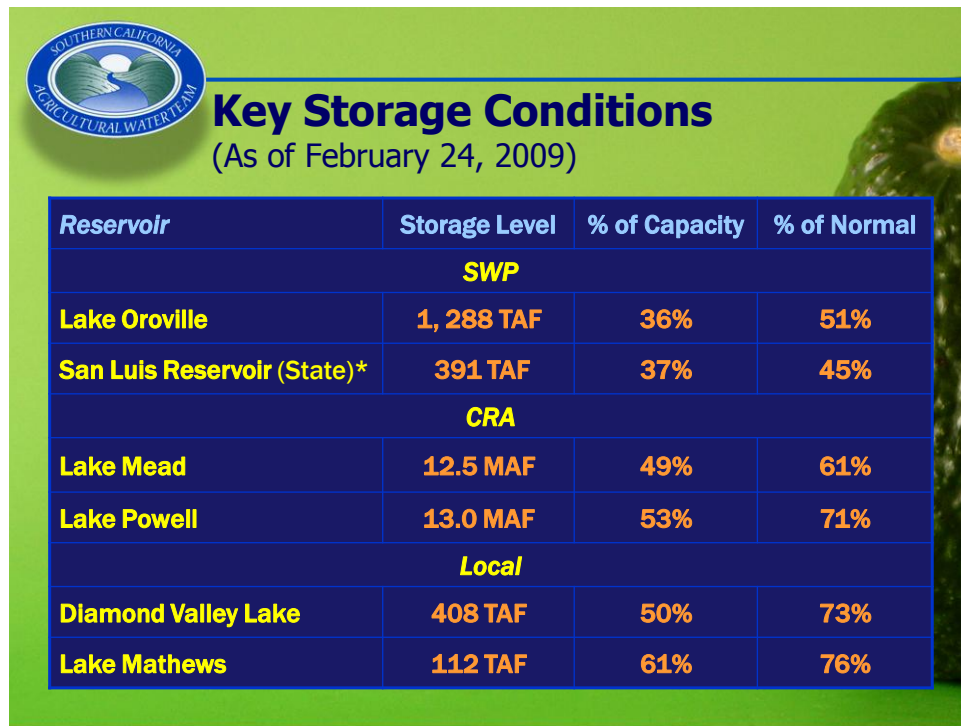
Storage conditions in the key State Water Project (SWP) reservoirs remain at levels not seen since 1991. Lake Oroville storage remained below 1 MAF for much of January and the storage level increased by only 43 TAF for the month. However, since February 1<sup>st</sup>, Lake Oroville has added 263 TAF of storage, which already exceeds the normal February increase in storage for the reservoir. However, Lake Oroville storage is only 1.29 MAF or 51% of normal for this date. As of February 1<sup>st</sup>, DWR's share in San Luis Reservoir remains at its lowest February level since 1991 at 391 TAF or 45% of normal.

Conditions on the Colorado River System have improved over the last year with Lake Powell storage currently at 71% of average as compared to 60% a year ago. The storage level in Lake Mead remains slightly below its storage level at this time last year - 61% vs. 64% - but overall conditions have

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improved such that the likelihood of the implementation of shortage criteria on the Colorado River system has been greatly reduced.

Locally, Metropolitan's Diamond Valley Lake remains at levels not seen since the reservoir was filled in 2000 and is at 73% while Lake Mathews is 76% of normal.



\* As of February 1, 2009

## SWP

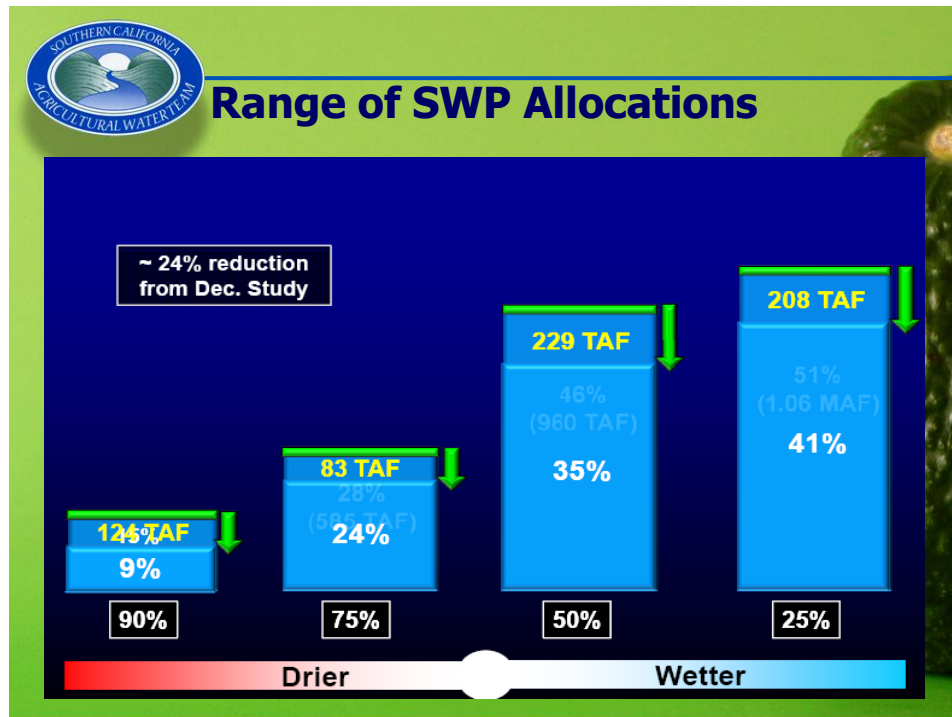
As we entered February, there was a significant likelihood that SWP contractors would receive a record low allocation for 2009. The continuing dry conditions, coupled with reduced pumping from the Sacramento Bay Delta because of environmental restrictions, have resulted in a current SWP allocation of just 15%. In fact, conditions at the end of January did not even support a 15% percent allocation, but rather a 9% allocation. However, as shown in the graphic below, the current allocation is conservative with a 90% chance that the final allocation will be greater than 15% (shown as 9%).

In addition, the graphic also shows that even with median rainfall through May, the final allocation will only be roughly 35%, based on DWR's studies. Based on historical data, the average precipitation from February through May in the watersheds measured by the 8-Station Index is 20.9". Given February rainfall through February 24<sup>th</sup> of 11.1 inches, we are currently at 168% of that average to date. If the watersheds receive only average precipitation through May of 14.3", the total for the February through May time period would be 25.4" or 121% of normal. Thus, given the current forecasts for continued rain and snow in northern California, chances are that the final SWP allocation is likely to be at least 35%.

Under the current 15 percent Table A allocation, Metropolitan would receive Table A supplies of 287 TAF. Metropolitan would also take delivery of 26 TAF from Metropolitan's transfer and exchange agreements with the Desert Water Agency and Coachella Valley Water District and the City of Port

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Hueneme. Total CY 2009 SWP contract supplies under a 15% allocation are projected at 315 TAF. If the conditions warrant a 35% allocation, Metropolitan SWP supplies would total greater than 800 TAF.




## Colorado River Aqueduct

Metropolitan staff's estimate of base Colorado River supplies for CY 2009 remains at 887 TAF based on the anticipated initial 2009 diversion schedule of Metropolitan's approved water order from the U.S. Bureau of Reclamation. This schedule includes Metropolitan's Basic Apportionment (550 TAF) and all other Colorado River supplies developed to date, including water transfers, that are diverted at Metropolitan's intake at Lake Havasu. This also represents the 68 TAF increase in the estimated CRA supplies due to unused California agricultural apportionment at the end of 2008, which also allowed Metropolitan to keep water in the Lake Mead ICS program for use this year.

## WSDM Supplies

In addition to base SWP and CRA supplies, Metropolitan has a total of approximately 1.1 MAF of storage in its WSDM resource portfolio as of the beginning of CY 2009 (this figure excludes water stored for emergency purposes). Accounting for conveyance constraints, approximately 580 – 620 TAF of this amount is available in CY 2009, depending upon the final SWP allocation. Some of the programs have contract provisions that allow for a supply increase in relation to an increase in SWP allocation. A breakdown of the available WSDM supplies is shown below.

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## 2009 WSDM Actions

<i>WSDM Actions</i>	<i>Annual Yield</i>
<b>Transfers &amp; Exchanges</b>	<b>24,000</b>
<b>Surface Water</b>	<b>352,000</b>
<b>Groundwater Storage</b>	<b>88,000</b>
<b>Central Valley Programs</b>	<b>125,000</b>
<b>Total</b>	<b>589,000</b>

### *Demands on Metropolitan*

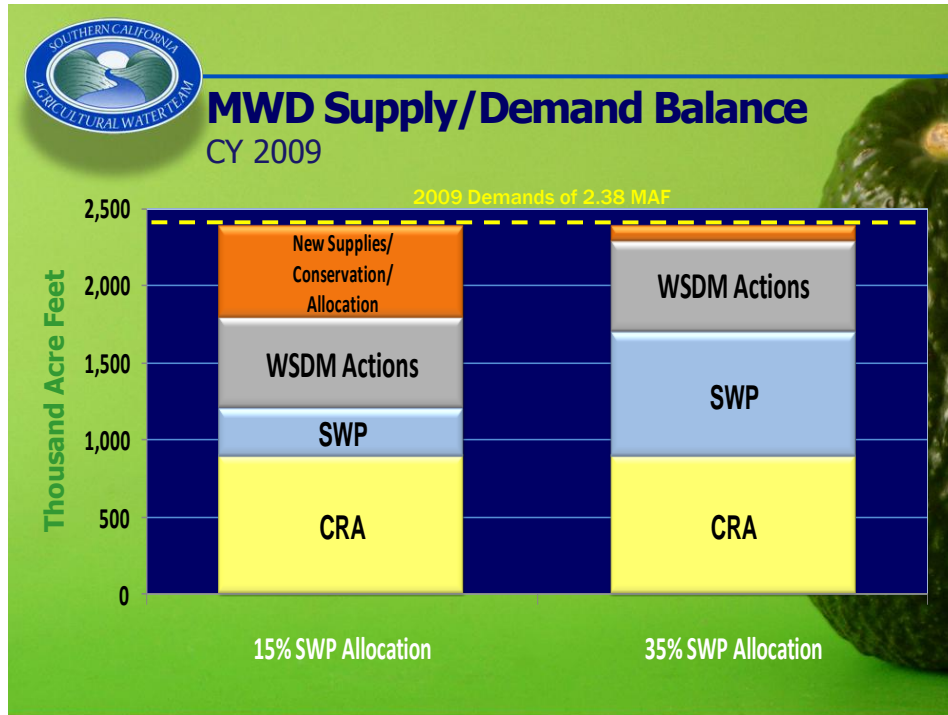
Metropolitan's water demands for calendar year 2009 are projected to be 2.38 MAF at the current trend, with a range of 1.85 MAF under wet/cool conditions to 2.83 MAF under hot/dry conditions. This range reflects discontinued water sales under the replenishment program for 2009, greater demands from groundwater agencies for firm imported water supplies and a 30% in agricultural sales under the Interim Agricultural Water Program and that approximately 75 TAF of demand has been "opted-out" of the program by the member agencies.

### *Water Balance and Actions*

With current trend demands of 2.38 MAF and base supplies on the SWP and CRA of 1.2 MAF (based on a 15% SWP allocation); there is a resulting supply gap of approximately 1.18 MAF for CY 2009. If Metropolitan were to utilize the full 590 TAF amount available of WSDM actions to meet the current trend demand, there is still a balance of 590 TAF that would need to be met through a combination of additional supplies and extraordinary conservation efforts resulting from Metropolitan's Five-Year Supply Plan or implementation of Metropolitan's Water Shortage Allocation Plan (WSAP).

If the SWP allocation increases to 35% and base supplies on the SWP and CRA amount to 1.7 MAF, there is a remaining supply gap of approximately 680 TAF for CY 2009. If Metropolitan were to utilize the full 590 TAF of available WSDM actions to meet the current trend demand, there is still a balance of 90 TAF that would need to be met through a combination of additional supplies and extraordinary conservation efforts resulting from Metropolitan's Five-Year Supply Plan or implementation of the WSAP.

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## *Five-Year Supply Plan Resource Options*

Metropolitan staff continues to identify a set of additional resource options for 2009 as part of its Five-Year Supply Plan. These options could yield approximately 426 TAF for CY 2009 of additional supply or reduced demand if successfully implemented. The resource options focus on six initiatives: extraordinary conservation, Colorado River transactions, near-term Delta actions (0 for 2009), SWP transactions, groundwater recovery, and local resources. It should be noted that 40% of the anticipated supplies result from extraordinary conservation over and above the savings now being achieved. The achievement of these savings will be crucial if Metropolitan is to avoid implementation of its Allocation Plan. Metropolitan is not considering additional revenue to support these conservation efforts and has in fact reduced the conservation incentive budget in its proposed 2009-2010 budget. Metropolitan has included the costs associated with the other potential resource options in their 2009-2010 budget. This month's estimate of 426 TAF for CY 2009 represents a 70 TAF decrease attributable to a net decrease of 65 TAF in SWP Transactions (75 TAF decrease in Drought Water Bank estimates and 10 TAF increase in In-Delta Transfers) and a 5 TAF decrease in Groundwater Recovery (inability to recover water from San Bernardino Valley MWD due to a low SWP allocation).

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## MWD Five-Year Supply Plan

<i>Resource Options</i>	<i>Annual Yield</i>
<b>Extraordinary Conservation</b>	<b>215 TAF</b>
<b>Colorado River Transactions</b>	<b>158 TAF</b>
<b>Near-Term Delta Actions</b>	<b>0 TAF</b>
<b>SWP Transactions</b>	<b>45 TAF</b>
<b>Groundwater Recovery</b>	<b>3 TAF</b>
<b>Local Resources</b>	<b>5 TAF</b>
<b>Total</b>	<b>426 TAF</b>

## Implementation of the Water Supply Allocation Plan

In January 2009, Metropolitan estimated that the chance of needing to implement some level of rationing under the WSAP in July was approximately 1 in 2. With the release of the Biological Opinion and the dry conditions in January, Metropolitan's staff issued an update of water supply impacts on the SWP at its February Board meeting. With precipitation and snowpack significantly below normal through January, the range of potential SWP allocations expected for 2009 significantly decreased. In February, Metropolitan estimated that the chances of implementing the WSAP had increased to 3 in 4. With the heavy February precipitation, the chances of WSAP implementation are likely now closer to 1 in 2.

These Metropolitan's staff analyses do not include potential additional curtailments of SWP supplies from regulatory actions to protect Longfin smelt and Chinook salmon. It is not clear at this time how those actions, if any, will increase the curtailments already accounted for in the current water supply conditions.

Should it be necessary, the timeline for implementing the WSAP is shown below. At this time, Metropolitan staff continues to recommend to its Board of waiting until April before making a final decision on implementing the WSAP allocation to ensure that the allocation level is appropriate.

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