

- Water Surplus and Drought Management Plan on water supply and demand as of August 21, 2008

## Summary

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This is the monthly report on the CY 2008 regional water supply and demand conditions as of August 21, 2008. Staff will provide oral updates to this report at the monthly meeting of the Water Planning and Stewardship Committee. The Water Surplus and Drought Management Plan (WSDM Plan) provides the overall strategy for managing Metropolitan's resources to meet the range of estimated demands for the calendar year. The following are report highlights for this month:

- SWP (35 percent Table A allocation) and CRA Base Supplies<sup>1</sup>: 1.47 MAF
- WSDM Storage Balances as of January 1, 2008: 1.75 MAF
- WSDM Storage that is accessible through CY 2008: 759 TAF
- Identified Transfers and Exchanges for CY 2008: 153 TAF
- Current Trend Total Demand: 2.22 MAF
- Firm Supplies accessible in CY 2009 under a 10 percent and 20 percent SWP Allocation: 1.7 – 1.9 MAF
- Resource Options available in CY 2009: 517 TAF – 1.25 MAF

## Attachments

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[Attachment 1: Projected CRA and SWP Supplies for CY 2008](#)

[Attachment 2: Projected WSDM Supplies for CY 2008](#)

[Attachment 3: Initial 2009 Supply Outlook \(Critically Dry-Year\)](#)

[Attachment 4: Firm Supplies for 2009](#)

[Attachment 5: Potential Resource Options for the Next Five Years](#)

## Detailed Report

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This letter is the tenth monthly WSDM Plan report on water supplies and demands for CY 2008. The purpose of this report is to keep the Board apprised of developing conditions that may impact water supply reliability and any potential WSDM actions that may be required for the year.

### Water Supply and Demand Balance

#### *Colorado River Aqueduct*

Staff's estimate of total Colorado River supplies for CY 2008 is approximately 871 TAF of current diversions, based on Metropolitan's most recent schedule submitted to the Federal Bureau of Reclamation. This schedule includes Metropolitan's Basic Apportionment (550 TAF) and all other Colorado River supplies, including water transfers, that are diverted at Metropolitan's intake at Lake Havasu. Colorado River base supplies, which are net of water transfers, are approximately 731 TAF. A detailed listing of the Colorado River's current diversion schedule is included in [Attachment 1](#).

Since last month's report, the scheduled CRA diversions are unchanged.

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<sup>1</sup> This figure does not include 15 TAF of water from the SNWA agreement described under 'Transfers and Exchanges', 25 TAF of Central Arizona Storage Recovery water, and the 20 TAF increase in PVID program since last year, 34 TAF of Drop 2 Reservoir water, and 46 TAF of Lake Mead ICS water.

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### *State Water Project*

Since February 1, 2008, the State Water Project (SWP) allocation for Metropolitan has remained at 35 percent of the Table A contract amount. This allocation reflects the record dry conditions experienced in March through May and the resulting low projection of runoff. This allocation considers conservative assumptions for SWP operational constraints, including Delta export restrictions resulting from the Federal District Court's remedy order to protect Delta Smelt.

Since last month's report, the projected amount of SWP remains unchanged. Under the current 35 percent Table A allocation, Metropolitan is planning on receiving a total SWP supply of 743 TAF in CY 2008. A detailed listing of SWP supplies is listed in [Attachment 1](#).

### **Water Demands**

Metropolitan's current trend estimated for water demand is 2.22 MAF, with a range of 2.10 MAF under wet/cool conditions to 2.33 MAF under hot/dry conditions. This range of estimated demand covers total water deliveries, a part of which is included in Metropolitan's projections of its rates and revenues. It reflects that water sales under the replenishment program have been discontinued, and that water sales under the Interim Agricultural Water Program are reduced by 30 percent. The total demands do not include deliveries of water as part of the exchange with Desert Water Agency and Coachella Valley Water District (DWCV). At this time, Metropolitan intends to recover water stored in the Advance Delivery Account.

Since last month's report, total demand at the current trend is higher by about 8 TAF.

### **WSDM Supplies and Management Actions**

#### *WSDM Storage Portfolio*

In addition to base CRA and SWP supplies, Metropolitan had a total of approximately 1.75 MAF of storage in its WSDM resource portfolio as of the beginning of CY 2008. The available WSDM supplies and management actions for calendar year 2008 are approximately 759 TAF. This estimate reflects the contractual minimum amounts of the programs and/or any agreed upon increase in minimum contractual amounts with banking partners. Some of the programs also have contract provisions that allow for a supply increase in relation to an increase in SWP allocation. Detailed program level estimates of operational WSDM supplies for 2008 under the current SWP allocation, along with projected storage levels, are shown in [Attachment 2](#). Metropolitan staff will continue to work cooperatively with its member agencies and other partners to ensure coordination and effective program management. [Attachment 2](#) also shows any water supply programs currently under development (unavailable in 2008) and separates out emergency storage reserves in Metropolitan's reservoirs and in storage facilities operated by the California Department of Water Resources. At this time, Metropolitan has access to approximately 674 TAF of emergency storage supplies.

Since last month's report, there has been a decrease in the projected available WSDM storage supplies for CY 2008 of about 2 TAF. This decrease is due to a change in the projected supply available to Metropolitan from Central Valley Storage Programs.

#### *Transfers/Exchanges*

In November 2007, the Board authorized the General Manager to enter into an agreement with the State Water Project Contractors Authority to pursue up to 200 TAF of water transfer agreements with sellers located in the Sacramento and San Joaquin Valleys for CY 2008. Contracts have been signed for up to 47 TAF in the Sacramento Valley (net of delta conveyance losses), and up to 12 TAF south of the Delta.

In addition to these State Water Project transfers, there is 25 TAF of recovered water from the 1992 Central Arizona groundwater storage program and approximately 20 TAF of increased PVID following from last year that would increase CY 2008 supplies. Furthermore, an exchange agreement that started in 2002 with the SNWA allows Metropolitan to store unused Nevada apportionment of Colorado River water in California. Most recently, an additional 15 TAF acre-feet under this agreement was stored for CY 2008. In subsequent years, Nevada may request recovery of this stored water. In April, the Board approved the joint funding agreement for the Drop 2 Reservoir

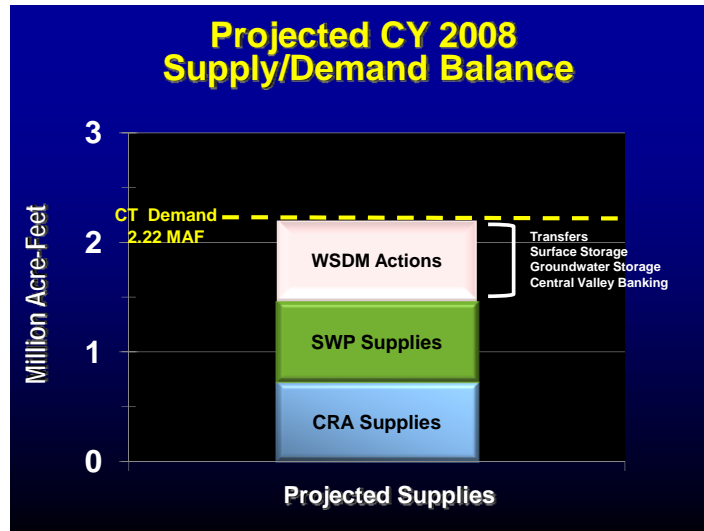
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Project that will result in approximately 34 TAF of new supplies available to Metropolitan in CY 2008. These Colorado River actions could produce a combined total of 94 TAF acre-feet in CY 2008, bringing the total amount of transfers and exchanges identified for the year to 153 TAF.

There has been no change in the amount of transfers since last month's report.

**Water Balance and Actions**

With currently allocated supplies on the SWP and CRA of 1.47 MAF, Metropolitan would be required to execute approximately 747 TAF of WSDM actions to meet the current trend total demand of 2.22 MAF.



The table below shows the current estimate of the actions that will be taken to balance the currently allocated SWP and CRA base supplies and demand.

<b>Current Trend Demand:</b>	2,220,000
<b>Base Supplies</b>	1,473,000
<b>WSDM ACTIONS</b>	<b>747,000</b>

Table of Identified WSDM Actions	Actions Under Current Trend Demand	Amount Taken to Date
Transfers and Exchanges	153,000	-
Central Valley Programs	182,000	101,900
In-Basin Groundwater	51,000	11,700
Surface Water	361,000	-
<b>TOTAL</b>	<b>747,000</b>	<b>113,600</b>

In the situation that calendar year demands exceed identified WSDM actions, the additional supply needs will be supplemented by surface storage reserves. Conversely, if the demands turn out to be lower than anticipated, the excess supply will be stored in surface reservoirs, enhancing the flexibility for CY 2009.

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The table below shows that Metropolitan has a total of 1.34 MAF in surface water storage, of which 667 TAF is available for dry-year yield. Under the current demand and supply projections, 361 TAF of surface water would be utilized, along with the other WSDM actions, to meet the current trend demand. Based on the table below, a balance of 306 TAF of surface water would remain in dry year storage for future years.

Storage	Emergency Storage	Dry-Year	Total
Diamond Valley Lake, Lake Mathews, and Lake Skinner	319,200	417,300	736,500
Flex Storage	-	203,600	203,600
Lake Mead ICS	-	46,200	46,200
DWR Emergency Storage	354,300		354,300
<b>Total</b>	<b>673,500</b>	<b>667,100</b>	<b>1,340,600</b>
Projected Take at Current Trend Demand		361,000	361,000
<b>Remaining Balance</b>	<b>673,500</b>	<b>306,100</b>	<b>979,600</b>

### 2009 Supply Situation

The water conditions that we face in 2009 are partly a result of water supply conditions and resource actions that have occurred over the preceding years, including several extraordinary events, such as the extended eight-year drought on the Colorado River watershed, the record dry hydrology in Southern California, and the federal court restrictions on SWP deliveries due to Delta smelt. In addition, 2009 water conditions will also be affected by weather and precipitation that occurs beginning in October 2008. If critically dry conditions continue, layered on top of court-ordered SWP restrictions, the initial supply conditions for 2009 are anticipated to be as follows:

- A 10 percent – 20 percent initial SWP allocation (210 to 418 TAF), due to forecasted low SWP reservoir levels leading into 2009;
- About 900 TAF of Colorado River Aqueduct (CRA) supplies, based on the expected USBR approved order, leading to a CRA that is about three-quarters full;
- Demands of 2.2 to 2.4 MAF due to significant decreases in local groundwater storage, reservoir storage, and Los Angeles Aqueduct supplies. Demands reflect the suspension of groundwater replenishment deliveries and a 30 percent reduction in Interim Agricultural Water Program Sales due to assumed dry conditions;
- Available withdraws of up to 130,000 AF from the Central Valley Banking Programs, leaving approximately one to two years of reserves;
- Available withdraws of up to 350,000 AF from dry-year storage reserves in DVL and the Flexible Storage accounts, assuming all emergency storage supplies are maintained.

Under this 2009 scenario, Metropolitan's firm supplies would total 1.7 to 1.9 MAF based on the critically dry SWP allocations and approved order for CRA deliveries, combined with withdrawals from Central Valley Banking Programs, conjunctive use programs, and system reservoirs. Compared to demands of 2.2 to 2.4 MAF, the potential shortfall of firm supplies could be as much as 700 TAF. To meet this potential gap between dry-year supplies and demands, staff has developed an inventory of resource options that can be implemented in 2009.

### Resource Options

A set of potential resource options for 2009 has been evaluated based on the feasibility of specific projects and transactions. These options could yield from 520 TAF to 1.25 MAF of additional supplies in 2009, if successfully implemented. The low end of the range, 520 TAF is used for planning purposes under a critically-dry scenario. The specific resource options are projects or transactions that would be implemented or expedited by Metropolitan and are shown in [Attachment 3](#). If these options are selected and successfully implemented, together with the

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estimated firm supplies, the total amount of available supplies in 2009 would amount to 2.2 to 3.2 MAF. The set of resource options focus on six initiatives: conservation, Colorado River transactions, near-term Delta actions, SWP transactions, groundwater recovery, and local resources. Project feasibility assessments are being conducted and will continue over the next several months.

A review of these critically dry demands, firm supplies and potential resource options were provided in a written Board report and oral presentation to the Water Planning and Stewardship Committee in August. Over the next few months, staff will provide updates on the 2009 Supply situation and progress in implementing the resource options. In addition, workshops with member agencies to develop local resource and conservation actions will continue.

**CY 2008 Projected CRA and SWP Supplies**

<b>Colorado River Diversion Schedule</b>	
Basic Total Apportionment	550,000
IID-MWD Conservation Program	85,000
Water Exchanged with SDCWA (IID Transfer & All American Canal Lining)	71,500
Canal Lining Water to MWD	4,500
Central Arizona storage recovery	25,000
Lower Colorado Water Supply Project	6,679
PVID Land Fallowing	82,109
Southern Nevada Water Authority Water Exchange	15,000
System Efficiency ICS (Drop 2 Reservoir)	34,000
Extraordinary Conservation ICS (Lake Mead ICS)	46,170
MWD Water Budget Agricultural Adjustment	-49,276
<i>Priority 1,2, and 3b</i>	-45,834
<i>Imperial ID</i>	0
<i>Coachella Valley WD</i>	0
<i>Misc and Indian PPR's</i>	-3,442
<b>Colorado River Supplies Total</b>	<b>870,682</b>
<b>State Water Project Supplies</b>	
Table A (35 percent allocation)	669,025
Turnback pool	1,689
Desert Water/Coachella Valley exchange (Table A/Turnback Pool)	60,036
San Bernardino Valley MWD Coordinated Operation Agreement	10,000
Port Hueneme Agreement	1,850
<b>State Water Project Supplies Total</b>	<b>742,600</b>
<b>Total</b>	<b>1,613,282</b>

**Projected WSDM Supplies for CY 2008**

<b>Program</b>	<b>1/1/2008 Storage Levels</b>	<b>Amount Available at 35% SWP Allocation</b>	<b>CY 2008 Put Capacity</b>
<b>SURFACE STORAGE</b>	<b>667,100</b>	<b>477,000</b>	<b>514,900</b>
<i>Lake Mead ICS Account</i>	46,200	46,200	200,000
<i>Castaic Lake (DWR Flex Storage)</i>	138,600	138,600	15,400
<i>Lake Perris (DWR Flex Storage)</i>	65,000	65,000	0
<i>Diamond Valley Lake</i>	390,100	200,000	213,000
<i>Lake Mathews &amp; Lake Skinner (Dry-Year Storage)</i>	27,200	27,200	86,500
<b>CENTRAL VALLEY BANKING PROGRAMS</b>	<b>489,900</b>	<b>181,600</b>	<b>131,700</b>
<i>Arvin Edison Storage Program</i>	189,400	39,100	45,000
<i>Semitropic Storage Program</i>	250,300	125,800	31,700
<i>Kern Delta Storage Program</i>	31,300	8,200	55,000
<i>Mojave Storage Program</i>	18,900	8,500	0
<b>GROUNDWATER STORAGE PROGRAMS</b>	<b>540,700</b>	<b>50,600</b>	<b>187,950</b>
<b>CONJUNCTIVE USE PROGRAMS</b>	<b>214,600</b>	<b>43,600</b>	<b>37,950</b>
<i>IEUA/TVMWD (Chino Basin)</i>	88,000	22,000	12,000
<i>Long Beach (Cent. Basin)</i>	9,800	2,200	3,300
<i>Long Beach (Lakewood)</i>	1,800	0	900
<i>Foothill (Raymond and Monkhill)</i>	3,400	1,700	2,250
<i>Calleguas (N. Las Posas)</i>	59,700	6,000	0
<i>MWDOC (Orange County Basin)</i>	49,700	11,000	15,000
<i>Three Valleys (Live Oak)</i>	700	0	750
<i>Three Valleys (upper Claremont)</i>	0	0	750
<i>Compton</i>	1,100	300	0
<i>Western</i>	400	400	3,000
<b>CYCLIC PROGRAMS</b>	<b>63,600</b>	<b>0</b>	<b>0</b>
<i>Cyclic - USG</i>	48,300	<i>Up to stored volume</i>	0
<i>Cyclic - PM (Three Valleys)</i>	15,300	<i>Up to stored volume</i>	0
<i>Cyclic - IEUA (Chino Basin)</i>	0	0	0
<b>SUPPLEMENTAL PROGRAMS</b>	<b>27,000</b>	<b>7,000</b>	<b>0</b>
<i>Supplemental Storage Program (Los Angeles)</i>	20,000	0	0
<i>Supplemental Storage Program (MWDOC)</i>	7,000	7,000	
<b>OTHER PROGRAMS</b>	<b>235,500</b>	<b>0</b>	<b>150,000</b>
<i>Advance Delivery Account (DWCV) *</i>	121,400	0	150,000
<i>SBVMWD Coordinated Operating Agreement **</i>	50,000	0	0
<i>Central Arizona Storage Demonstration Project **</i>	64,100	0	0
<b>OTHER WSDM ACTIONS</b>	<b>50,000</b>	<b>50,000</b>	<b>0</b>
<i>EWA Wet/Dry Exchange</i>	50,000	50,000	
<b>TOTAL</b>	<b>1,747,700</b>	<b>759,200</b>	<b>834,550</b>

\* DWCV is shown as zero because it has been accounted for in base supplies.

\*\* Central Arizona and SBVMWD COA are shown as zero because they have been accounted for in Transfers & Exchanges.

**Programs Under Development in 2008**

<b>Program</b>	<b>1/1/2008 Storage Levels</b>	<b>Amount Available at 35% SWP Allocation</b>	<b>CY 2008 Put Capacity</b>
<i>Conj. Use - Pasadena</i>	21,700	0	0
<i>Hayfield Storage Program</i>	73,000	0	0
<i>MWD '08 Carryover</i>	0	0	200,000
<i>DWCV '08 Carryover</i>	0	0	85,550
<i>Sacramento Valley Transfers Stored in Shasta</i>	47,000	0	0
<b>TOTAL</b>	<b>141,700</b>	<b>0</b>	<b>285,550</b>

**Emergency Storage Reserves**

<b>Program</b>	<b>1/1/2008 Storage Levels</b>	<b>Amount Available at 35% SWP Allocation</b>	<b>CY 2008 Put Capacity</b>
<b>Metropolitan Emergency Storage</b>	<b>319,200</b>	<b>319,200</b>	<b>n/a</b>
<i>Diamond Valley Lake</i>	206,900	206,900	N/A
<i>Lake Mathews</i>	78,500	78,500	N/A
<i>Lake Skinner</i>	33,800	33,800	N/A
<b>DWR Emergency Storage</b>	<b>354,300</b>	<b>354,300</b>	<b>n/a</b>
<i>Castaic Lake</i>	170,600	170,600	N/A
<i>Pyramid Lake</i>	158,300	158,300	N/A
<i>Silverwood</i>	20,000	20,000	N/A
<i>Lake Perris</i>	5,400	5,400	N/A
<b>TOTAL</b>	<b>673,500</b>	<b>673,500</b>	



## 2009 Resource Options

<u>Resource Options</u>	<u>Annual Yield</u>
	<u>TAF</u>
Conservation	215 – 415
CR Transactions	117 – 135
Near-Term Delta Actions	0 – 200
SWP Transactions	150 – 428
Groundwater Recovery	30 – 70
Local Resources	5 – 7
<b>Total</b>	<b>517 – 1,255</b>