THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Report
Water Resource Management Group

• Water Surplus and Drought Management Update *Conditions as of 10/19/2023*

Summary

This report provides highlights for water year (WY) 2022-2023 hydrologic conditions, and an accounting of water supply, demand, and preliminary storage balances for calendar year (CY) 2023, as of October 19, 2023. Updated supply and hydrologic information will be provided during the oral report in November.

2023 Highlights:

Water Year 2022-2023 began on the heels of an exceptionally dry period in the Western United States, marked by persistent dry conditions in October and November 2022. However, improved hydrologic conditions emerged in late December and persisted through the winter months leading to a significant turnaround in the water year's outcome. By the water year's end, it had become one of the wettest periods in recent history for both northern California and the Colorado River Basin. The following are notable highlights for the year:

State Water Project Supplies

- A series of atmospheric river storms and cold temperatures boosted the State snowpack allowing for the State Water Project (SWP) allocation to increase to 100 percent of Table A, the first time since 2006.
- Article 21 surplus supplies were also made available as San Luis Reservoir filled.
- Northern Sierra snowpack peaked with twice the snow water equivalent amount making it one of the largest snowpacks on record.
- Above normal runoff into the Sacramento River - more than twice the amount of the previous year.

Colorado River Aqueduct Supplies

- Snowpack in the Colorado River Basin was one of the largest in the past thirty years.
- Above normal inflows into Lake Powell - more than twice the amount of the previous year.
- Water usage by the higher priority water users is trending low.
- Improved hydrologic conditions eliminated the risk of Metropolitan making Drought Contingency Plan (DCP) Contributions in 2024 and 2025 and reduced the probability of Metropolitan making DCP contributions in 2026.

Demands on Metropolitan

- Lowest projected combined member agency consumptive and replenishment demands on Metropolitan for CY 2023 since 1979.
- Continued conservation and behavioral water use reductions following the drought.

Water Management Tools

- Rescinded the Water Shortage Emergency Condition for the SWP Dependent Area and terminated the Emergency Water Conservation Program due to improved hydrologic conditions.
- Pre-delivered water to local storage managed by its member agencies through the Cyclic Program and initiated the Cyclic Cost-Offset Program to help member agencies offset the additional costs incurred from capturing increased volumes of water into their cyclic accounts.
- Reduced obligations to return and/or deliver water by (1) delivering water to member agencies who deferred deliveries through the Reverse Cyclic Program, (2) returned water to the California Department of Water Resources (DWR) for human health and safety supply received in CY 2022 and for flexible storage takes in CY 2021 and 2022, and (3) delivered water to Desert Water Agency/Coachella Valley Water District.
- Stored surplus supply in Metropolitan's dry-year storage reserves. Metropolitan's dry-year storage reserves at the end of CY 2023 is projected to be approximately 3.4 million acre-feet (MAF), a record-high storage balance for Metropolitan.

Purpose

Informational

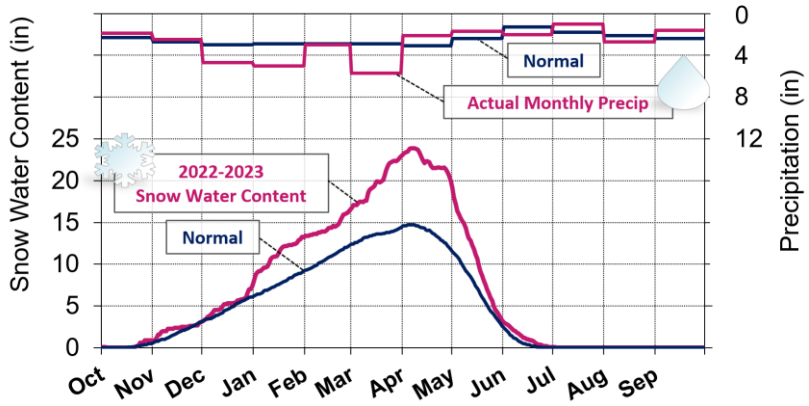
Attachments

Attachment 1: Projected 2023 WSDM Storage Detail (100 percent SWP Table A allocation)
Attachment 2: Future Contributions and Obligations and Cyclic Program

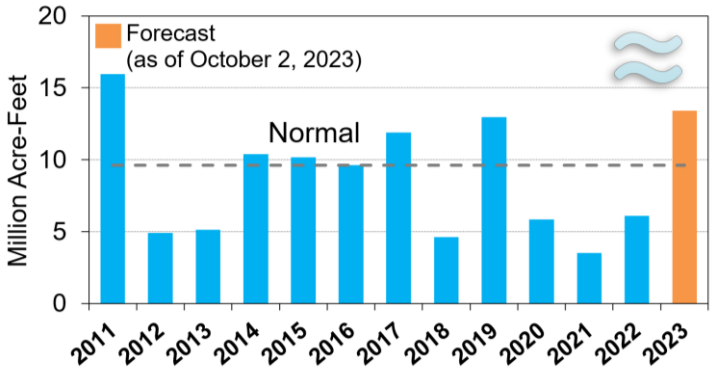
Detailed Report

This Water Surplus and Drought Management (WSDM) report summarizes the hydrologic conditions for WY 2022-2023 and provides the water supply and demand conditions for CY 2023.

Upper Colorado Basin Snowpack & Precipitation



Powell Unregulated Water Year Inflow



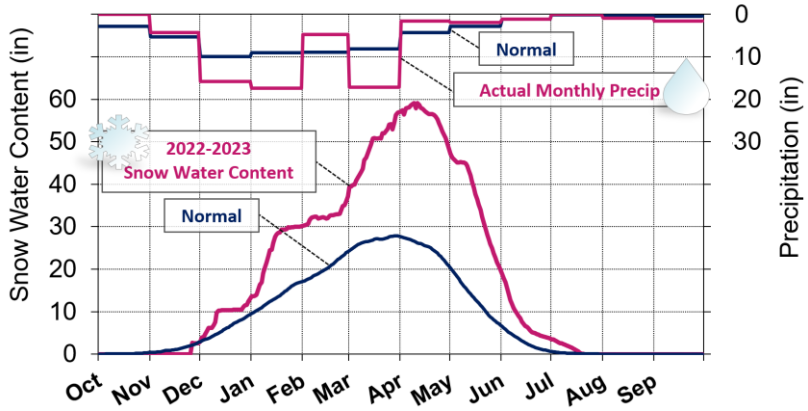
Upper Colorado River Basin

❄ Peak snowpack water content:
23.9 inches or 164% of April 1 normal.

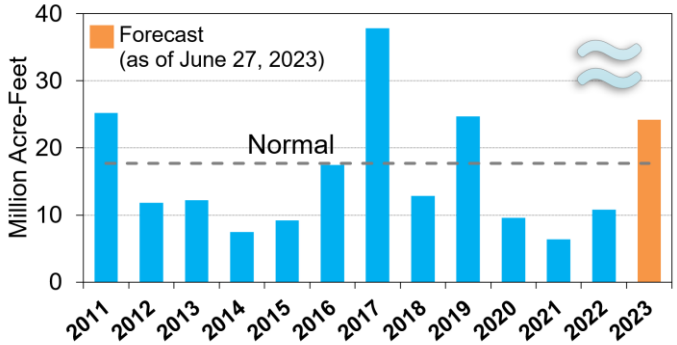
💧 Above normal precipitation:
33.9 inches or 114% of normal.

≈ Above normal runoff into Lake Powell:
13.4 MAF or 140% of normal.

Northern Sierra Snowpack & 8 Station Precipitation



Sacramento River Water Year Runoff



Sacramento River Basin

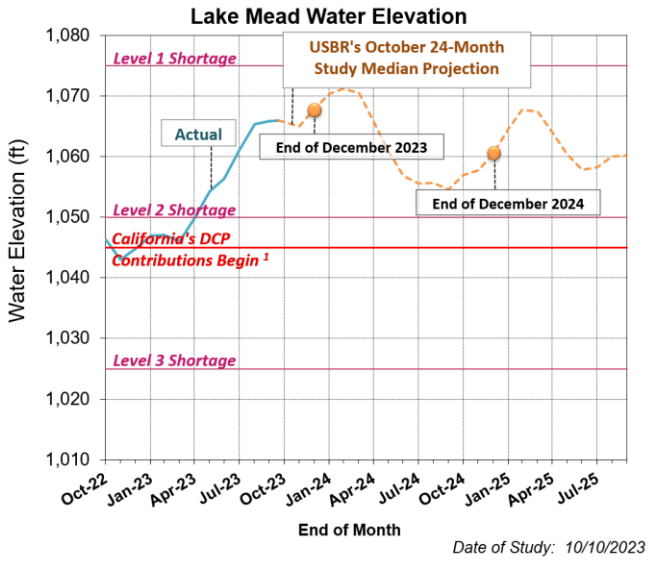
❄ Peak snowpack water content:
59.1 inches or 199% of April 1 normal.

💧 Above normal precipitation:
66.6 inches or 125% of normal.

≈ Above normal runoff into the Sacramento River:
24.1 MAF or 137% of normal.

CRA Supplies	Acre-Feet (AF)
Basic Apportionment	*550,000*
IID/ MWD Conservation Program	*105,000*
CVWD - 2nd Amendment, Exchange of Additional Water	*57,000*
PVID Fallowing Program	*38,000*
Exchange w/ SDCWA (IID/Canal Lining)	*278,000*
Exchange w/ USBR (San Luis Rey Tribe)	*16,000*
Lower Colorado Water Supply Project	*9,000*
Bard Seasonal Fallowing Program	*5,000*
Quechan Diversion Forbearance	*0*
Quechan Seasonal Fallowing Program [1]	*0*
Higher Priority Water Use Adjustment	*190,000*
Total CRA Supplies [2,3]	**1,248,000**

[1] Rounded to the nearest thousand. Supply is 281 AF.
[2] Per United States Bureau of Reclamation (USBR) Forecast (10/16/2023) and is likely to change based on approval of proposals for system conservation, resulting in wet water remaining in Lake Mead.
[3] Total may not sum due to rounding.

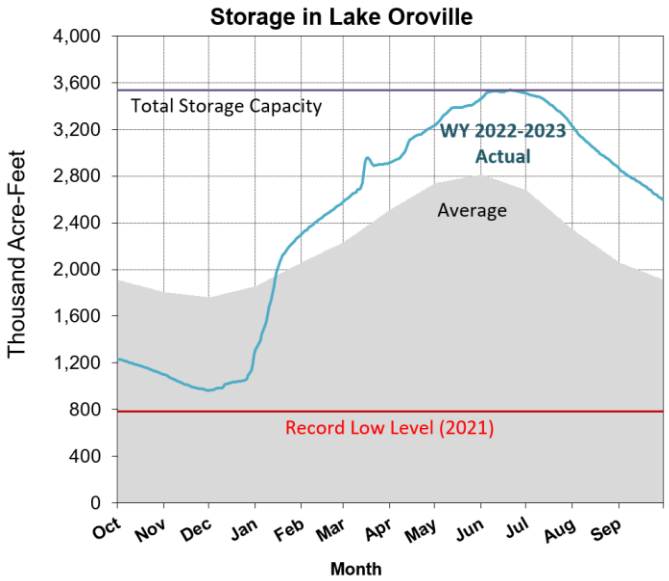


[1] Metropolitan is required to make Drought Contingency Plan (DCP) contributions in the following year if the August 24-month Study projects Lake Mead's elevation is at or below 1,045 feet on January 1. Since the August 2023 24-month Study projected Lake Mead's elevation to be above 1,045 on January 1, 2024, Metropolitan is not required to make DCP contributions in 2024. This figure reflects the latest 24-month study (October) available at the time of this report.

- Lake Mead began the water year with 7.33 MAF in storage (28 percent of total capacity). By the end of the water year, Lake Mead gained 1.54 MAF in storage ending the water year with 8.87 MAF in storage (34 percent of capacity).
- The Lower Basin is at a Level 2a shortage in CY 2023. Under this level, Metropolitan is not impacted.
- The Lower Basin will be in a Level 1 shortage in CY 2024, an improvement over last year's determination. This determination does not affect Metropolitan's operations.

SWP Supplies	Acre-Feet
Table A (100% SWP allocation)	*1,912,000*
Port Hueneme	*2,000*
Unbalanced Exchange [1]	*3,000*
Article 21	*134,000*
Purchase of SDCWA's Semitropic Supply	*4,000*
Total SWP Supplies [2]	**2,055,000**
Total Supplies (CRA + SWP) (Prior to storage actions) [2]	**3,303,000**

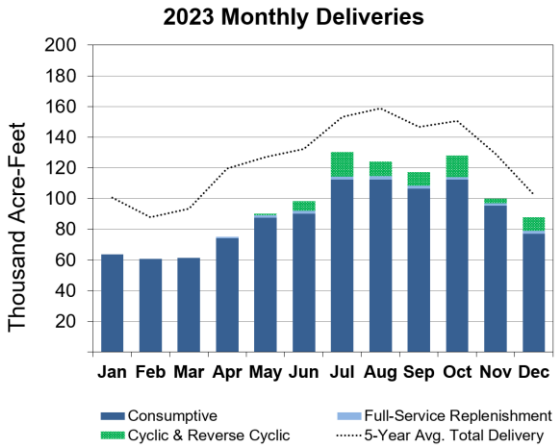
[1] Unbalanced exchange with the Santa Clarita Valley Water Agency.
[2] Total may not sum due to rounding.



- The SWP Table A allocation for CY 2023 is 100 percent following the three driest years on record.
- Lake Oroville started the water year with 1.23 MAF in storage (35 percent of total capacity or 64 percent of the historical average) and was full in June. By the end of the water year, Lake Oroville gained 1.37 MAF of water ending the water year with 2.60 MAF (73 percent of capacity or 136 percent of the historical average).

Current Demand	Acre-Feet
Member Agency Consumptive [1]	*1,051,000*
Member Agency Replenishment	*16,000*
Coachella Valley Water District Agreement	*135,000*
Imperial Irrigation District Return [2]	*0*
Exchange w/ San Luis Rey Tribe	*16,000*
System and Storage Losses	*103,000*
Cyclic Deliveries [3]	*60,000*
2022 Reverse Cyclic Deliveries	*17,000*
2022 Human Health & Safety Water Return	*134,000*
Total Demands [4]	**1,532,000**

[1] Includes exchange w/ SDCWA (IID/Canal Lining) and CUP sales.
[2] Per USBR Forecast (10/16/2023).
[3] Includes an estimate of 10,000 AF of deliveries through the Cyclic Cost-Offset Program.
[4] Total may not sum due to rounding.

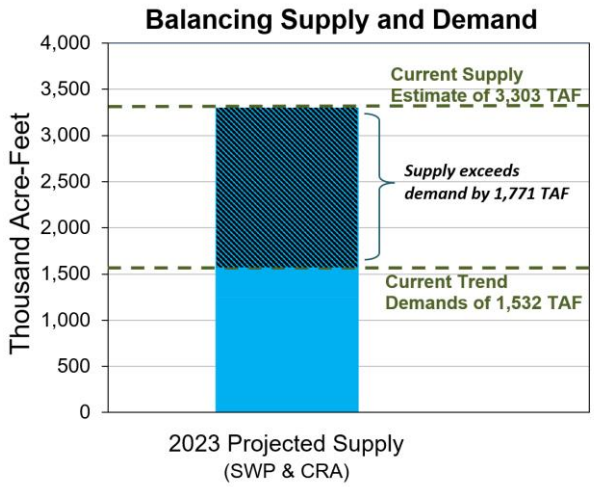


Due to above average in-region precipitation and local supplies, member agency deliveries for CY 2023 are projected to be the lowest going back to 1979.

MANAGING REGIONAL SUPPLY AND DEMAND

Supply/Demand Balance	Acre-Feet
Total Supplies	*3,303,000*
Total Demands	*1,532,000*
Current Balance Estimate [1]	**1,771,000**

[1] Total may not sum due to rounding.



WSDM Strategies/Actions

The following summarizes the WSDM strategies/actions taken to address the estimated supply/demand balance in 2023.

- Balanced the use of available imported supplies from both the SWP and Colorado River.
- Pre-delivered water to local storage managed by its member agencies through the Cyclic Program and initiated the Cyclic Cost-Offset Program to help manage surplus supply by offsetting member agency cost associated with taking additional Metropolitan deliveries.
- Delivered water to member agencies who deferred deliveries through the Reverse Cyclic Program and returned water to DWR for human health and safety supply received in CY 2022 and for flexible storage takes in CY 2021 and 2022.
- Delivered water to Desert Water Agency/Coachella Valley Water District.
- Stored surplus supplies in a manner to achieve equitable reliability across the region.
- Continued to utilize and manage storage assets to satisfy current and future year demands, with special emphasis on rebuilding storage for SWP Dependent Area.
- Metropolitan is projecting to store an estimated 1.20 MAF of the 1.77 MAF of surplus supplies available in CY 2023. Metropolitan's dry-year storage reserves at the end of CY 2023 is projected to be approximately 3.4 MAF, a record-high storage balance for Metropolitan.

2023 WSDM Storage Detail

WSDM Storage	1/1/2023 Storage Levels	Net Projected Storage Action Put (+) / Take (-) [1]	Projected End of Year 2023 Balance [2]	2023 Total Storage Capacity
Colorado River Aqueduct Delivery System	1,128,000	**416,000**	**1,544,000**	**1,657,000**
Lake Mead ICS	1,128,000 [3]	416,000	1,544,000	1,657,000
State Water Project System	**502,000**	**486,000**	**988,000**	**1,889,000**
MWD & DWCV Carryover	39,000	258,000	297,000	350,000 [4]
MWD Articles 14(b) and 12(e)	0	0	0	N/A
Castaic and Perris DWR Flex Storage	3,000	216,000	219,000	219,000
Arvin Edison Storage Program	119,000	-19,000 [5]	100,000	350,000
Semitropic Storage Program	158,000	33,000	191,000	350,000
Kern Delta Storage Program	137,000	-12,000	125,000	250,000
Mojave Storage Program	19,000	0	19,000	330,000
AVEK High Desert Water Bank Program [6]	27,000	10,000 [7]	37,000	40,000 [8]
In-Region Supplies and WSDM Actions	**698,000**	**344,000**	**1,042,000**	**1,246,000**
Diamond Valley Lake	494,000	285,000	779,000	810,000
Lake Mathews and Lake Skinner	194,000	8,000	202,000	226,000
Conjunctive Use Programs (CUP) [9]	10,000	51,000	61,000	210,000
Other Programs	**662,000**	**-38,000**	**624,000**	**1,181,000**
Other Emergency Storage	381,000	0	381,000	381,000
DWCV Advanced Delivery Account	281,000	-38,000	243,000	800,000
Total	**2,990,000**	**1,208,000**	**4,198,000**	**5,973,000**
Emergency	750,000	0	750,000	750,000
Total WSDM Storage (AF) [10]	**2,240,000**	**1,208,000**	**3,448,000**	**5,223,000**

[1] Storage program losses included where applicable.

[2] Preliminary end of year balances, subject to DWR adjustments and USBR final accounting in May 2024.

[3] Reflects USBR's final accounting for 2022, released May 2023. This amount is net of the water Metropolitan stored for IID in Lake Mead in an ICS sub-account.

[4] Total storage capacity varies year-to-year based on prior year remaining balance added to current year contractual limits.

[5] Via exchange of surface water supplies.

[6] Includes water previously stored under the AVEK Storage Program.

[7] Represents early recharge in the AVEK High Desert Water Bank Program.

[8] Reflects a portion of the AVEK High Desert Water Bank Program's total storage capacity. The total storage capacity will be reflected once the program is fully constructed. Anticipated to be fully operational by 2027.

[9] Total of all CUP programs including IEUA/TVMWD (Chino Basin); Long Beach (Central Basin); Long Beach (Lakewood); Foothill (Raymond and Monk Hill); MWDOC (Orange County Basin); Three Valleys (Live Oak); Three Valleys (Upper Claremont); and Western.

[10] Total WSDM Storage level subject to change based on accounting adjustments.

Future Contributions and Obligations and Cyclic Programs

Table 1: Future Obligations [1]

	Beginning of Year 2023 Balance	Projected End of Year 2023 Balance
Water Stored for IID under the California ICS Agreement and its Amendment or the 2021 Settlement Agreement with IID	266,000	266,000 [2]
Storage and Interstate Release Agreement with Southern Nevada Water Authority	330,000	330,000 [3]
Coachella Valley Water District Agreement	210,000	105,000 [4]
DWR Flex Storage	216,000 [5]	0
2022 Reverse Cyclic	25,000 [6]	8,000
2022 Human Health & Safety	134,000 [7]	0
Total (AF)	**1,181,000**	**709,000**

[1] Rounded to the nearest thousand. Subject to change based on accounting adjustments.

[2] Reflects final accounting under USBR's 2022 Water Accounting Report released May 15, 2023. IID can request return in any year, conditional on agreement terms.

[3] Up to 30,000 AF per year.

[4] Obligation must be met by the end of 2026.

[5] Flexible storage withdrawals from Castaic Lake and Lake Perris must be returned within five calendar years. Metropolitan is required to return 170,000 AF by 2026 for withdrawals in 2021. Metropolitan is required to return 46,000 AF by 2027 for withdrawals in 2022.

[6] Deferred delivery from Calleguas Municipal Water District, Upper San Gabriel Valley Municipal Water District, and Three Valleys Municipal Water District. Metropolitan is required to deliver water to the member agencies by 2027.

[7] Metropolitan's CY 2022 Human Health & Safety deliveries. This water must be returned by 2027.

Table 2: Potential Magnitude of California's Drought Contingency Plan Contribution

	2023	2024	2025	2026
Likelihood of Required California Drought Contingency Plan Contribution [1]	0%	0%	0%	13%
Average Metropolitan DCP Contribution When Contributions Are Required (AF)	0	0	0	214,000

[1] Results from USBR's October 2023 Colorado River Mid-Term Modeling System (CRMMS) model run.

Table 3: Cyclic Program Activity

CY	Starting Balance (AF)	CY Actions (AF)				Ending Balance (AF)
		Cyclic Pre-Delivery	Cyclic Cost-Offset Pre-Delivery	Total Pre-Delivery	Sale Out of Cyclic to Date	
2019	51,000	147,000	19,000	166,000	91,000	126,000
2020	126,000	2,000	0	2,000	50,000	79,000
2021	79,000	0	0	0	28,000	51,000
2022	51,000	0	0	0	27,000	24,000
2023 [1]	24,000	16,000	7,000	23,000	5,000	42,000

[1] This table is updated with actual 2023 Cyclic Program activity on a monthly basis.