



● **Water Surplus and Drought Management Update** *Conditions as of 12/31/2022*

Summary

This report provides a preliminary accounting for water supply, demand, and storage conditions for calendar year (CY) 2023 as of December 31, 2022. This report also tracks the hydrologic conditions for water year (WY) 2022-2023.

Currently, the estimated amount of imported supply available to help meet demand, prior to withdrawing water from storage is 1.13 million acre-feet (MAF) for CY 2023. The State Water Project (SWP) portion is 291 thousand acre-feet (TAF), which includes the initial SWP Table A allocation of five percent and 195 TAF of human health and safety (HH&S) water from the Department of Water Resources (DWR). Any HH&S supply Metropolitan receives must be returned to DWR in a future year. The initial Colorado River supply is 843 TAF. This reflects the United States Bureau of Reclamation's (USBR) initially approved higher priority water usage that will likely change as the year progresses. Water usage by the higher priority water users impacts Metropolitan's supply. Through the priority system, water not used by the higher priority water users becomes available as supply to Metropolitan. USBR will release its daily water use forecasts early this year which will be reflected in subsequent WSDM reports. However, Metropolitan's supply may change throughout the year as hydrologic conditions develop.

The demand on Metropolitan is currently estimated to be 1.71 MAF for CY 2023. Since supply is less than demand, Metropolitan's current supply/demand gap is estimated to be 574 TAF. Operational decisions to protect Metropolitan's future Colorado River Aqueduct (CRA) diversions, potential conservation mandates from USBR, and future water obligations and potential contributions, as shown in **Attachment 2**, may limit access and availability to Metropolitan's dry-year storage accounts for CY 2023. To mitigate need to draw upon storage in CY 2023, Metropolitan's Board of Directors declared a Regional Drought Emergency for all of Southern California on December 13, 2022, and called upon water agencies to immediately reduce their use of all imported supplies from both the SWP and the Colorado River.

The Emergency Water Conservation Program (EWCP) in 2022 was effective in reducing demand and in ensuring water use did not exceed available supply. As shown in **Attachment 3**, the SWP Dependent Area member agencies achieved the 2022 EWCP objective and used three percent less SWP supply than the 2022 volumetric limit. To manage demands with the continued limited SWP supply in 2023, the EWCP will continue through June 2023 for the SWP Dependent Area with new volumetric limits. Any unused water from 2022 will be redistributed to the SWP Dependent area for use in 2023.

Should drought conditions persist or worsen in the coming months, Metropolitan's Board of Directors will consider implementing a regional Water Supply Allocation Plan (WSAP) for all member agencies beginning fiscal year 2023-2024. Under this plan, the Board may determine a regional shortage, establish a shortage level, and implement a surcharge for water use above a member agency's annual allocation. In preparation for a possible WSAP, staff will hold a series of coordination meetings with member agencies in the upcoming months.

It is early in the year and a wide range of supply and demand balances remain possible. As shown in **Attachment 4**, constructing plausible scenarios with different supply and demand assumptions helps broaden the understanding of plausible, but uncertain, future conditions that can unfold. Regardless of the conditions that may materialize in the next two years, Metropolitan will continue to adhere to the WSDM Plan to capture surplus amount of water in normal to wet conditions and use stored water and drought actions in drought conditions.

Purpose

Informational

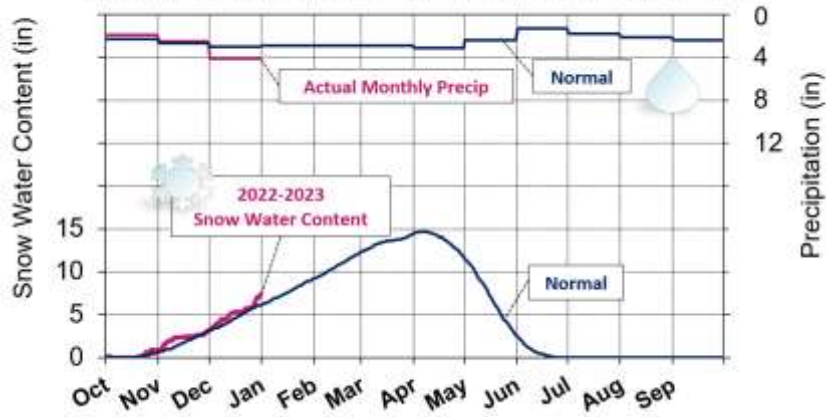
Attachments

- Attachment 1: Projected 2023 WSDM Storage Detail (5 percent SWP Table A allocation)
- Attachment 2: Future Contributions and Obligations and Cyclic Programs
- Attachment 3: Emergency Water Conservation Program Performance
- Attachment 4: Future Supply and Demand Gaps

Detailed Report

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

Upper Colorado Basin Snowpack & Precipitation



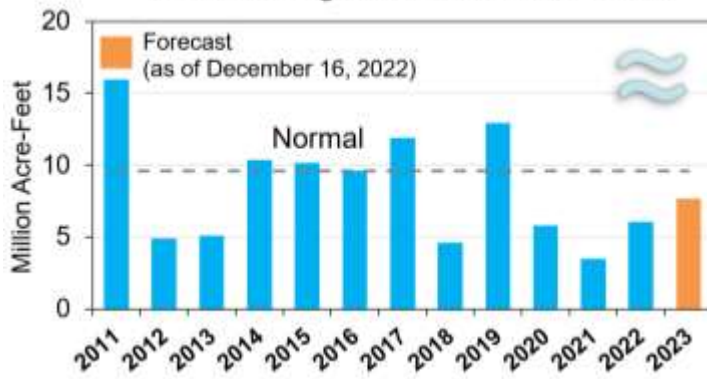
Upper Colorado River Basin

- ✳ Above normal snowpack water content for this date (7.4 inches or 121% of normal for this date). Snow data early in the season may not provide a valid measure of conditions.

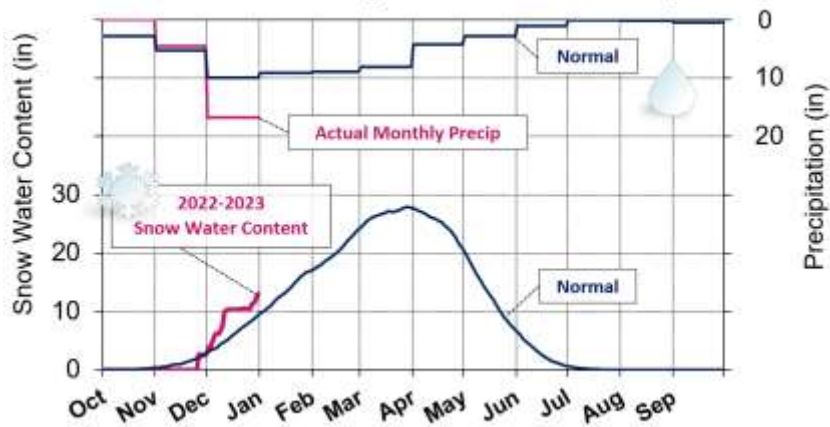
- ◆ Above normal precipitation to date (8.5 inches or 106% of normal for this date).

- ≈ Runoff into Lake Powell for WY 2023 is forecasted at 80% of normal.

Powell Unregulated Water Year Inflow



Northern Sierra Snowpack & 8 Station Precipitation



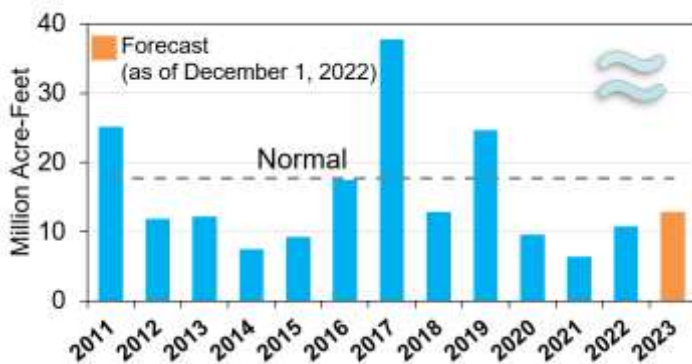
Sacramento River Basin

- ✳ Above normal snowpack water content for this date (13.0 inches or 136% of normal for this date). Snow data early in the season may not provide a valid measure of conditions.

- ◆ Above normal precipitation to date (21.5 inches or 116% of normal for this date).

- ≈ Runoff into the Sacramento River for WY 2023 is forecasted at 73% of normal.

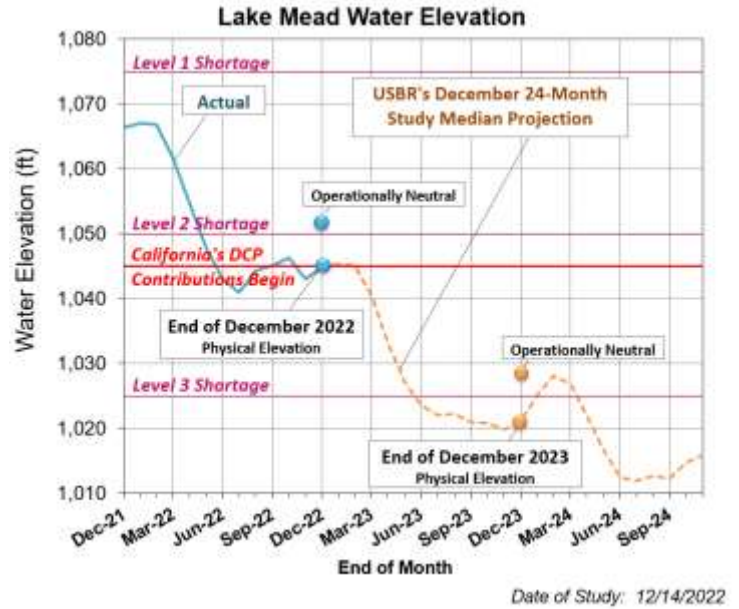
Sacramento River Water Year Runoff



CRA Supplies	Acre-Feet
Basic Apportionment	550,000
IID/ MWD Conservation Program	105,000
PVID Following 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 Following Program	6,000
Quechan Diversion Forbearance	6,000
Quechan Seasonal Following Program	3,000
Higher Priority Water Use Adjustment	-169,000
Total CRA Supplies ^{1,2}	843,000

¹ Per USBR-approved water order (12/16/22).

² Total may not sum due to rounding.



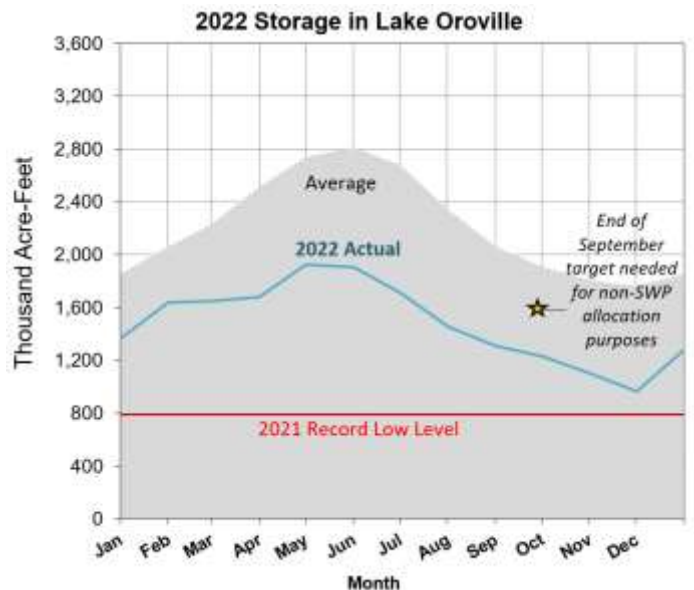
- Lake Mead storage is currently 7.31 MAF or elevation 1,044.8 feet (28 percent of total capacity).
- The Lower Basin is at a Level 2a shortage in CY 2023. Under a Level 2a shortage, Metropolitan will not be impacted. However, due to the critical conditions on the Colorado River, USBR has called on the Basin states to develop additional conservation to protect critical elevations in Lakes Powell and Mead. Metropolitan and other California water agencies that rely on Colorado River supplies have committed to reduce water use by up to 400,000 acre-feet each year beginning in 2023 through 2026.
- Metropolitan may use ICS to meet future DCP contributions; additional use of ICS to meet service area demand remains uncertain.

SWP Supplies	Acre-Feet
Table A (5% SWP allocation)	96,000
Port Hueneme ¹	0
Human Health & Safety Supply	195,000
Total SWP Supplies ²	291,000

Total Supplies (CRA + SWP) (Prior to storage actions)	1,134,000
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¹ Rounded to the nearest thousand.

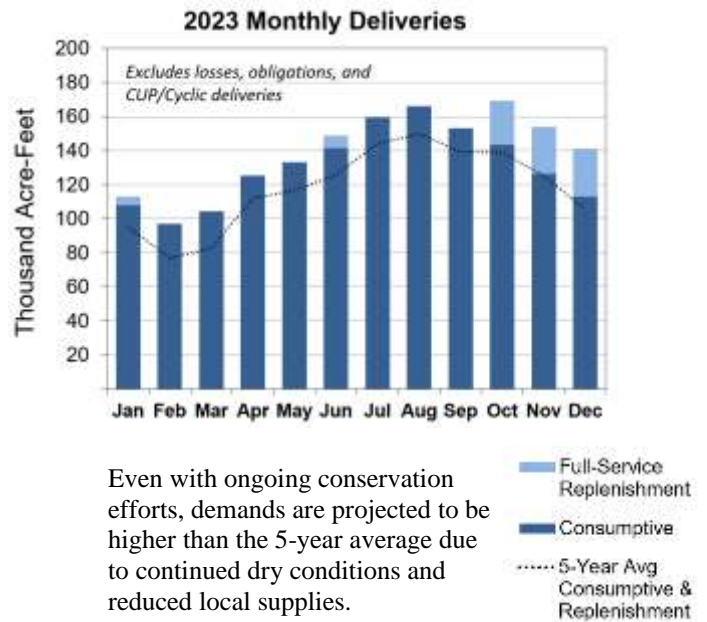
² Total may not sum due to rounding.



- In addition to the 5 percent Table A allocation, DWR is providing water for Contractors' unmet Human Health and Safety needs (HH&S) in CY 2023. DWR expects Contractors receiving HH&S water to take mandatory conservation measures and return any HH&S water to the SWP in a future year. DWR has approved 195 TAF of HH&S supply for Metropolitan.
- Lake Oroville is currently at 1.27 MAF (36 percent of total capacity) or 69 percent of historical average as of the date of this report.

Current Demand	Acre-Feet
Member Agency Consumptive ¹	1,581,000
Member Agency Replenishment	46,000
Coachella Valley Water District Agreement	15,000
Return to Imperial Irrigation District ²	0
Exchange w/ San Luis Rey Tribe	16,000
System and Storage Losses	50,000
Cyclic Deliveries	0
Total Demands ³	1,708,000

¹ Includes exchange w/ SDCWA (IID/Canal Lining) and CUP sales.
² Per USBR-approved water order (12/16/22).
³ Total may not sum due to rounding.

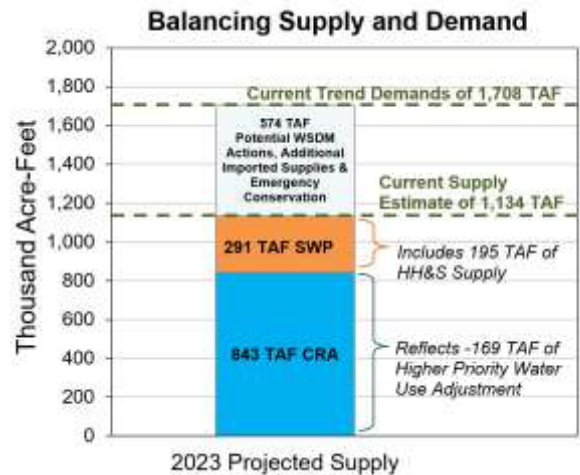


Even with ongoing conservation efforts, demands are projected to be higher than the 5-year average due to continued dry conditions and reduced local supplies.

MANAGING REGIONAL SUPPLY AND DEMAND

Supply/Demand Balance	Acre-Feet
Total Supplies	1,134,000
Total Demands	1,708,000
Current Balance Estimate ¹	-574,000

¹ Total may not sum due to rounding.



Dry-Year WSDM Strategies/Actions

The following WSDM actions are being pursued or are underway to satisfy the estimated supply/demand gap in 2023, enhance Metropolitan’s capability of delivering supplies to the SWP Dependent Areas, and reduce storage withdrawals in 2023. Should conditions warrant, surplus supplies will be stored in a manner to achieve equitable reliability across the region.

- Actively pursuing additional transfer supplies.
- Receive deliveries of HH&S supply from DWR to help meet demands of SWP Dependent Area.
- Balance use of available imported supplies from both the SWP and Colorado River.
- Continue coordination with our partners to maximize supply development.
- Continue to allocate available SWP supplies for EWCP.
- Continue to utilize and manage storage assets to satisfy current and future year demands.
- Incorporate new drought actions into existing suite of WSDM actions.

2023 WSDM Storage Detail

	1/1/2023 Estimated Storage Levels ¹	CY 2023 Take Capacity ²	2023 Total Storage Capacity
WSDM Storage			
Colorado River Aqueduct Delivery System	1,198,000	TBD	1,657,000
Lake Mead ICS	1,198,000	TBD ³	1,657,000
State Water Project System	484,000	96,000	1,879,000
MWD SWP Carryover ⁴	22,000	22,000	350,000
DWCV SWP Carryover ⁴			
MWD Articles 14(b) and 12(e)	0	0	N/A
Castaic and Perris DWR Flex Storage	3,000	3,000	219,000
Arvin Edison Storage Program	120,000	0	350,000
Semitropic Storage Program	163,000	45,000	350,000
Kern Delta Storage Program	130,000	26,000	250,000
Mojave Storage Program	19,000	0	330,000
AVEK Storage Program	27,000	0	30,000
In-Region Supplies and WSDM Actions	699,000	330,000	1,246,000
Diamond Valley Lake	494,000	237,000	810,000
Lake Mathews and Lake Skinner	194,000	82,000	226,000
Conjunctive Use Programs (CUP) ⁵	11,000	11,000	210,000
Other Programs	664,000	25,000	1,181,000
Other Emergency Storage	381,000	0	381,000
DWCV Advanced Delivery Account	283,000	25,000	800,000
Total	3,045,000	451,000	5,963,000
Emergency	750,000	0	750,000
Total WSDM Storage (AF) ⁶	2,295,000	451,000	5,213,000

¹ Preliminary start of year balances, subject to DWR adjustments and USBR final accounting in May 2023.

² Take capacity assumed under a five percent SWP Table A Allocation. Storage program losses included where applicable.

³ Take capacity will be based on planned maintenance activities, current CRA supply estimate, and operational decisions to protect Metropolitan's future CRA diversions. Although capacity is currently available, Metropolitan is planning to limit its take of ICS in 2023.

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

⁵ 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.

⁶ Total WSDM Storage level subject to change based on accounting adjustments.

Future Contributions and Obligations and Cyclic Programs

Table 1: Future Obligations

	Future Returns ¹
Water Stored for IID under the California ICS Agreement and its Amendment or the 2021 Settlement Agreement with IID	254,000 ²
Storage and Interstate Release Agreement with Southern Nevada Water Authority	330,000 ³
Coachella Valley Water District Agreement	210,000 ⁴
DWR Flex Storage	216,000 ⁵
2022 Reverse Cyclic	25,000 ⁶
2022 Human Health & Safety	134,000 ⁷
Total (AF)	1,169,000

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

² Reduced by 8,000 AF from last month's report to account for 2022 evaporation loss. IID can request return in any year, conditional on agreement terms.

³ Up to 30,000 AF per year.

⁴ Obligation to 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 will 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%	64%	71%	70%
Average Metropolitan DCP Contribution When Contributions Are Required (AF)	0	258,000	279,000	281,000

¹ Results from USBR's December 2022 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	
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	0	0	0	24,000	0

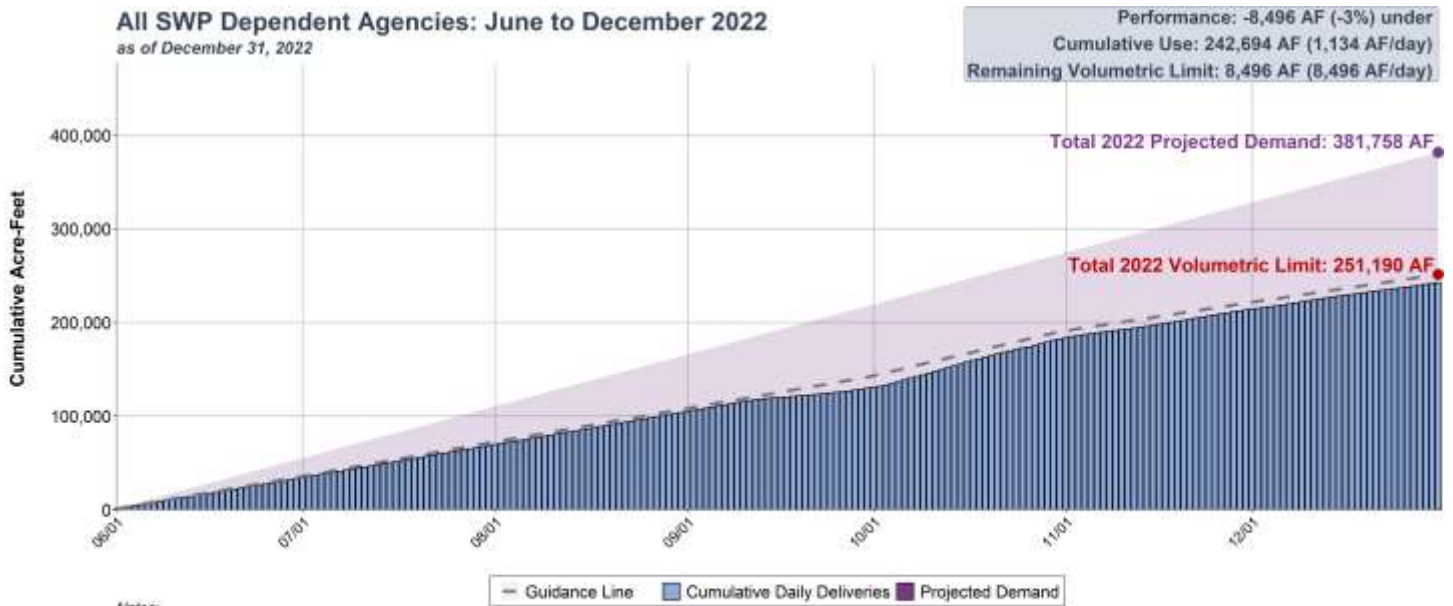
¹ Projected Cyclic program activity for the year. Subject to change.

Table 4: Reverse Cyclic Program Activity

CY	Starting Balance (AF)	CY Actions (AF)		Ending Balance (AF)
		Purchase of Deferred Delivery	Reverse Cyclic Deliveries	
2022	0	25,000 ¹	0	25,000

¹ Deferred delivery from Calleguas Municipal Water District, Upper San Gabriel Valley Municipal Water District, and Three Valleys Municipal Water District. Metropolitan will deliver water to the member agencies no later than five full calendar years from the date of purchase.

Emergency Water Conservation Program Performance



Notes:

1. Guidance line is a representation of the total volumetric limit on a cumulative daily basis. It assumes a linear path, unless a monthly pattern is provided by a member agency.
2. Performance is the acre-foot and corresponding percent deviation from the guidance line, per as of date.
3. For Path 2 agencies, monthly penalties paid will be credited if actual total water use is below the total volumetric limit at the end of the seven-month period.
4. Tracking of cumulative daily deliveries only include those agencies planning to receive SWP supplies June - December 2022.
5. Projected demand as of April 28, 2022.

Disclaimer: Data presented is preliminary and subject to change based on monthly reconciled billing data.

Future Supply and Demand Gaps (Estimate as of December 2022)

Metropolitan's Water Surplus and Drought Management Plan provides a framework for managing Metropolitan's resources in periods of surplus and shortage. To guide the WSDM actions, Metropolitan constructs plausible scenarios with different supply and demand assumptions. The table below shows the projected range of plausible end-of-year supply and demand balances for CY 2023 and 2024. These ranges provide a bookend for the wide range of supply and demand balances that can unfold.

To reflect a reasonable range of future outcomes, the low supply is coupled with high demand as one bookend and the high supply is coupled with the low demand for the other bookend. In 2023, the shortage for the service area can be ~520 TAF with a five percent SWP Table A allocation and Human Health and Safety (HH&S) supply, low Colorado River supply, and high demands. As for the other bookend, the surplus can be as high as ~725 TAF with a 70 percent SWP Table A allocation, high Colorado River supply, and low demands. For 2024, the range of supply and demand balances can range from a shortage of ~920 TAF to a surplus of ~865 TAF. Regardless of the conditions that may materialize in the next two years, Metropolitan will continue to adhere to the WSDM Plan to capture surplus amount of water in normal to wet conditions and use stored water and drought actions in drought conditions.

Item	2023 (TAF)		2024 (TAF)	
	Low Supply/High Demand	High Supply/Low Demand	Low Supply/High Demand	High Supply/Low Demand
SWP ¹	+300	+1,340	+300	+1,340
Colorado River ²	+960	+1,005	+660	+985
Demand on Metropolitan ³	-1,700	-1,400	-1,800	-1,200
Additional Obligations ⁴	-80	-220	-80	-260
Supply/Demand Balance ⁵	(-520)	725	(-920)	865

¹ SWP supplies are based on a low of 5% Table A allocation + HH&S to a high of 70% Table A allocation.

² Colorado River supplies are based on estimated transfers, exchanges, higher priority water use, and DCP contributions.

³ Demand on Metropolitan reflect the total of replenishment and consumptive demand.

⁴ Additional obligations include system losses, repayment of HH&S, etc.

⁵ The supply demand balances should not be interpreted as an absolute range as they were determined by explicit assumptions to represent reasonable outcomes. The actual supply and demand balance, shown in the WSDM report, may fall outside of this range as information becomes available for specific components throughout the year.