



• **Water Surplus and Drought Management Plan**

Summary

This report provides a preliminary accounting of water supply, demand, and storage conditions for calendar year (CY) 2018. This report considers conditions as of June 1, 2018.

Hydrologic conditions in both the Upper Colorado River Basin and the northern Sierra Nevada have tracked below average this water year and will likely end the year in September below average. Metropolitan's water supply from the Colorado River system, despite long-term drought conditions, are not expected to be impacted this year. Supplies from northern California have been slow to improve since the beginning of the water year in October given below normal hydrologic conditions and uncertainties in supply development in Lake Oroville. Late season storms did provide a needed boost allowing the Department of Water Resources to increase the State Water Project (SWP) allocation to 35 percent.

Metropolitan anticipates minimal changes to dry-year storage reserves this year. This Water Surplus and Drought Management (WSDM) report details supply/demand balances under the current 35 percent SWP allocation and identifies uncertainties that could impact those supply/demand balances.

Purpose

Informational

Attachments

Attachment 1: Projected 2018 WSDM Storage Detail (35% SWP allocation)

Detailed Report

This report provides the Board with an update on hydrologic conditions and a detailed accounting of WSDM conditions that impact water supply reliability for CY 2018.

2018 Estimated Colorado River Aqueduct Supplies

The annual snowpack peak accumulation occurs on or about April 1. This year, the peak occurred in early April and measured 74 percent of average. The current forecast by the Colorado River Basin River Forecast Center projects an inflow to Lake Powell of 5.5 million acre-feet (MAF) or 51 percent of normal for water year 2018. Even with this below average forecast, the annual release volume from Lake Powell during water year 2018 is projected to be 9.0 MAF, which would not result in water supply impacts to Metropolitan.

The table below shows staff's estimate of Colorado River Aqueduct (CRA) supply from the Colorado River for CY 2018 prior to water management actions. This supply is referred to as the CRA base supply and is comprised of two components, Metropolitan's Basic Apportionment of 550 thousand acre-feet (TAF) and the established Colorado River supply programs estimated at 395 TAF in CY 2018. Metropolitan's Basic Apportionment is variable and can fluctuate based on higher priority agricultural uses. Past water practices by the higher priority agricultural users have increased and decreased Metropolitan's water supply by as much as 100 TAF in a single year. The agricultural use will be better known as the year progresses at which time the appropriate adjustments will be made to the Colorado River supply projection. The estimated CRA base supply is shown without an adjustment at this time.

Board Report (Water Surplus and Drought Management Plan)

2018 Colorado River Aqueduct Supply Estimate (Acre-Feet)	
Basic Apportionment	550,000
IID/MWD Conservation Program	85,000
PVID Following Program	76,000
Exchange with SDCWA (IID Transfer and Canal Lining)	209,000
Exchange with USBR (San Luis Rey Settlement Agreement)	16,000
Lower Colorado Water Supply Project	9,000
Total CRA Supply Estimate	945,000

2018 Estimated State Water Project Supplies

Hydrologic conditions in northern California improved with above normal precipitation in the months of March and April. As of June 1, 2018, northern Sierra precipitation observed at eight weather stations, known as the 8-Station Index, was 40.53 inches or 82 percent of normal for that date. The northern Sierra snowpack peaked in late March and measured 50 percent of the April 1 average with a snow water content of 13.8 inches.

On May 21, 2018, Department of Water Resources (DWR) increased the SWP allocation to 35 percent reflecting the improved hydrologic conditions. Additional increases may be possible under certain scenarios (e.g., additional precipitation, less restrictive fishery constraints allowed under the Biological Opinions, maximizing storage in Oroville). The table below shows the associated SWP supplies under the current 35 percent SWP allocation. The Table also includes Yuba County Water Agency (YCWA) transfers of approximately 17 TAF of surface supplies explained in more detail in the *“Transfers and Exchanges”* section.

2018 State Water Project Supply Estimate (Acre-Feet)	
Table A Supply	669,000
Yuba Transfers	17,000
Total SWP Supply Estimate	686,000

2018 Demands and Losses Estimate

The table below summarizes the estimated demands, obligations and losses for CY 2018. These demands include Member Agency consumptive use, including water exchanged with San Diego County Water Authority and sea water barrier requirements. Member Agency replenishment demands include water for groundwater basin and surface reservoir recharge. CY 2018 demands also include deliveries to the Coachella Valley Water District under a long-term delivery and exchange agreement. Losses for CY 2018 are an estimate of Metropolitan distribution system losses, and evaporative and contractual losses from storage.

2018 Estimated Demands, Losses and Obligations (Acre-Feet)	
Member Agency Consumptive Demands	1,438,000
Member Agency Replenishment Demands	90,000
Coachella Valley Water District Agreement	35,000
System and Storage Losses	69,000
Total Estimated Demands and Losses	1,632,000

Board Report (Water Surplus and Drought Management Plan)

2018 Water Supply and Demand Balance

The following table shows the estimated net balance between demands and water supplies at the current SWP allocation of 35 percent SWP allocation for CY 2018.

2018 Water Supply and Demand Balance Estimate (Acre-Feet)	
CRA Supplies	945,000
SWP Supplies	686,000
Total Supplies	1,631,000
Total Demands and Losses	1,632,000
Net Water Supply and Demand Balance	-1,000

The increase to the SWP allocation and lower demand trends has reduced the amount of water needed to balance supplies and demands. As shown above, under the current 35 percent SWP allocation staff projects that supplies would more-or-less balance with demands.

There still remain many factors, however, that can impact these balances including SWP supplies, retail demand levels, local supply levels and water demands of the higher priority agricultural water users on the Colorado River system. The water usage for the higher priority agricultural water users, for example, currently suggests a reduction to Metropolitan's Colorado River supply. Staff will continue to monitor and make appropriate adjustments as the year progresses.

The WSDM Plan provides guidelines for water management actions to be taken to balance supplies with demands. Consistent with the WSDM Plan, withdrawals from or puts to dry-year storage within and outside of the service area would satisfy the needs identified above. As shown in **Attachment 1**, Metropolitan has ample water in reserves and storage capacity available along with the necessary put and take capacities to cover the deficit or storage needs identified for the year.

Transfers and Exchanges

Staff has investigated transfer and exchange opportunities in CY 2018. Considerations for pursuing transfers and exchanges include water supply need, cost, supply availability, and the ability to move those supplies across the Delta. Although the potential supply deficit identified in this report is minimal, there still remains uncertainty that can impact Metropolitan's supply/demand balances. Depending on conditions, the purchase of an estimated 17 TAF of YCWA surface water supplies (Yuba Transfers) can help minimize the impact of reduced CRA supplies due to higher priority Colorado River water usage, minimize dry-year storage withdrawals or potentially bolster dry-year storage. Authorization to purchase YCWA surface water supplies was granted by Metropolitan's Board in October 2014 along with fixed pricing based on hydrologic conditions for surface supplies through 2020. The official 2018 year type classification is "Below Normal" resulting in a final cost of \$150/AF. In addition to the low cost of water, these Yuba Transfer supplies are low risk in that Metropolitan is only responsible to purchase what is actually delivered. However, given the balanced conditions, staff is not pursuing additional transfers at this time.

Dry-Year Storage Adjustments

Metropolitan's end of year storage levels are subject to change based on accounting adjustments, contractual terms or other actions. Periodic updates are made to incorporate changes to the WSDM dry-year storage reserve levels as they are confirmed. These changes are reflected in **Attachment 1**. To date, key changes include a reduction to the cyclic program supply balance to reflect the sale of nearly 70 TAF of cyclic program supplies and a net increase to Metropolitan's Intentionally Created Surplus (ICS) supply balance by roughly 32 TAF. Metropolitan's ICS net increase reflects a correction to previously under reported return flow credits of nearly 72 TAF along with other accounting adjustments identified in the Bureau of Reclamation's 2017 Water Accounting Report published in mid-May.

Board Report (Water Surplus and Drought Management Plan)

Future Payback Agreements

Metropolitan has two types of payback agreements: Dry-year Exchanges and Operational Exchanges. The following table shows a list of the future dry-year exchange payback amounts from programs in which Metropolitan participates. Dry-year exchanges are those with payback provisions that are beyond one year from the exchange date.

The exchange agreement with the Southern Nevada Water Authority (SNWA) was executed in 2004 and later amended. The agreement allows Metropolitan to store unused Nevada apportionment of Colorado River water in California. SNWA may request recovery of this stored water in the future. Return may commence as early as 2022; however, SNWA has other supplies available that would likely delay the need for returns until after this date. Metropolitan did not store any SNWA water in 2017.

The California Extraordinary Conservation ICS agreement with the Imperial Irrigation District (IID) and other agencies executed in 2007, and later amended in 2015 to expand volumes, allows Metropolitan to store conserved IID water in excess of its Quantification Settlement Agreement (QSA) conservation commitments. The water may be returned at IID's request.

The table below shows all outstanding Dry-year Exchange payback amounts.

Dry-year Exchange/Program	Payback Amount	Payback Term
Storage and Interstate Release Agreement with Southern Nevada Water Authority	330,000	Up to 30,000 AFY (no earlier than 2022)
California ICS Agreement - IID	132,000	Any year, conditional on whether or not Metropolitan is implementing a WSAP
Total	462,000	

The following table shows the future operational exchange payback amounts from the programs in which Metropolitan participates. Operational exchanges are those with payback provisions that may be within one year of the exchange date and provide Metropolitan increased flexibility in the timing and conveyance of deliveries.

In 2014, Metropolitan took possession of 5 TAF of water from Irvine Ranch Water District (Irvine Ranch). Metropolitan returned 1 TAF in 2015 and the remaining 4 TAF is to be returned no later than 2024 at Irvine Ranch's request. Metropolitan has also taken possession of 7 TAF of water from Dudley Ridge Water District in coordination with Irvine Ranch. Half of this supply must be returned to Dudley Ridge and the other half to Irvine Ranch no later than 2022.

Operational Exchange/Program	Payback Amount	Payback Term
Strand Ranch - Irvine Ranch	4,000	No later than 2024
Dudley Ridge WD – Irvine Ranch	7,000	No later than 2022
Total	11,000	

2018 WSDM Storage Detail (35% SWP Allocation)

WSDM Storage	1/1/2018 Storage Levels	CY 2018 Take Capacity ¹	CY 2018 Put Capacity	2018 Total Storage Capacity
Colorado River Aqueduct Delivery	479,000	438,000	390,000	1,563,000
Lake Mead ICS	479,000	438,000	390,000	1,563,000
State Water Project System	1,026,000	697,000	170,000	1,879,000
MWD SWP Carryover	200,000	200,000	53,000	350,000 ²
DWCV SWP Carryover	97,000	97,000		
Castaic Lake (DWR Flex Storage)	154,000	154,000	0	154,000
Lake Perris (DWR Flex Storage)	65,000	65,000	0	65,000
Arvin Edison Storage Program	149,000	40,000	45,000	350,000
Semitropic Storage Program	187,000	61,000	32,000	350,000
Kern Delta Storage Program	138,000	50,000	30,000	250,000
Mojave Storage Program	27,000	21,000	0	330,000
AVEK Storage Program	9,000	9,000	10,000	30,000
In-Region Supplies and WSDM Actions	1,012,000	695,000	327,000	1,536,000
Diamond Valley Lake	747,000	557,000	63,000	810,000
Lake Mathews	139,000	61,000	43,000	182,000
Lake Skinner	38,000	8,000	6,000	44,000
IEUA/TVMWD (Chino Basin)	36,000	33,000	25,000	100,000
Long Beach (Central Basin)	0	0	3,000	13,000
Long Beach (Lakewood)	0	0	1,000	4,000
Foothill (Raymond and Monckhill)	0	0	0	9,000
MWDOC (Orange County Basin)	0	0	17,000	66,000
Three Valleys (Live Oak)	0	0	0	3,000
Three Valleys (Upper Claremont)	1,000	1,000	1,000	3,000
Western	3,000	3,000	3,000	12,000
Cyclic - Upper San Gabriel	32,000 ³	16,000	68,000	100,000
Cyclic - Three Valleys	0 ⁴	0	40,000	40,000
Cyclic - Burbank	6,000	6,000	29,000	35,000
Cyclic - Eastern	1,000	1,000	9,000	10,000
Cyclic - Calleguas	0	0	5,000	5,000
Cyclic - MWDOC	9,000 ⁵	9,000	14,000	100,000
Other Programs	556,000	118,000	277,000	1,128,000
Other Emergency Storage	328,000	0	0	328,000
DWCV Advanced Delivery Account	228,000	118,000	277,000	800,000
Total	3,073,000	1,948,000	1,164,000	6,106,000
Emergency	626,000	0	0	626,000
Total WSDM Storage ⁶	2,447,000	1,948,000	1,164,000⁷	5,480,000

¹ Annual take capacity assumed under a 35% SWP Table A Allocation. Take capacity may decrease depending on distribution system operations and timing of demands.

² Total Storage Capacity of 350,000 acre-feet is estimated to be the practical operational limit for carryover storage considering Metropolitan's capacity to take delivery of carryover supplies before San Luis Reservoir fills.

³ Reflects sale from cyclic account reducing storage balance by approximately 16,000 AF

⁴ Reflects sale from cyclic account reducing storage balance by approximately 2,000 AF

⁵ Reflects sale from cyclic account reducing storage balance by approximately 49,000 AF

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

⁷ Put capacity may increase if in-lieu deliveries occur.