THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Report

Water Resources Management

- **Water Surplus and Drought Management Plan**

Summary

This report provides a preliminary accounting of water supply, demand, and storage conditions for calendar year (CY) 2019. This report considers conditions as of January 25, 2019.

Storm activity in early January brought hydrologic conditions to near normal levels for both the northern Sierra and the Upper Colorado River Basin. A wide range of supply and demand balance outcomes still are possible for the year. Staff currently estimates that a SWP allocation in the range of 30 to 60 percent is required to balance supplies with demands in CY 2019. It is still early in the water year and there is a high probability that the SWP allocation will increase and reach this range. The SWP allocation is currently 15 percent. Should the SWP allocation remain at 15 percent, Metropolitan has ample dry-year storage available to satisfy any potential supply gap in 2019.

Purpose

Informational

Attachments

Attachment 1: Projected 2019 WSDM Storage Detail (15% SWP allocation)

Detailed Report

This Water Surplus and Drought Management (WSDM) report provides an update on 2018 end of year storage balances and an estimate on water supply and demand conditions for CY 2019 including an update on hydrologic conditions.

2019 Estimated Colorado River Aqueduct Supplies

Since the December WSDM reporting, the Upper Colorado River Basin received additional snowfall. As of January 25, 2019, the basin weighted snow water content increased from 4.7 to 9.6 inches or 106 percent of normal for that date. This year, Lake Powell is closer to a trigger level that may result in a lower release of flows to Lake Mead. Consequently, the developing snowpack and resulting runoff plays an important role and will be tracked closely this year. Lower releases from Lake Powell can impact Lake Mead storage elevations, increasing the likelihood of a shortage declaration by the United States Bureau of Reclamation (Reclamation).

The table below shows staff's estimate of Colorado River Aqueduct (CRA) supplies from the Colorado River for CY 2019 prior to WSDM actions. The total of 949 TAF is referred to as the CRA base supply and is an estimate that varies based on higher priority agricultural use. The agricultural use will be better known as the year progresses, at which time the appropriate adjustments will be made to the CRA supply projection. At this time, the estimated water supply only includes Metropolitan's Basic Apportionment (550 TAF), established CRA supply programs and exchange water.

2019 Colorado River Aqueduct Base Supply Estimate (Acre-Feet)	
Basic Apportionment	550,000
IID/MWD Conservation Program	85,000
PVID Fallowing Program	49,000
Exchange with SDCWA (IID Transfer and Canal Lining)	239,000
Exchange with Reclamation (San Luis Rey Settlement Agreement)	16,000
Lower Colorado Water Supply Project	10,000
CRA Supply Before Water Management And Storage Actions	**949,000**

2019 Estimated State Water Project Supplies

Since the December WSDM reporting, northern California received a series of powerful storm systems that boosted precipitation totals. As of January 25, 2019, the 8-Station Index increased from 10.7 to 26.1 inches or 101 percent of normal for that date.

On January 25, 2019, the Department of Water Resources (DWR) increased the SWP allocation to 15 percent for CY 2019. The allocation assumes a dry hydrologic condition for the remainder of the water year. Increases to the allocation depend on improvements to the actual hydrologic conditions in northern California. Staff expects additional increases to the SWP allocation in the coming months.

The table below shows Metropolitan's Table A supplies under the current 15 percent SWP allocation.

2019 State Water Project Supply Estimate (Acre-Feet)	
SWP Allocation	15%
Table A Supply	**287,000**

2019 Demands and Losses Estimate

The table below summarizes the estimated demands, obligations and losses for CY 2019 under the current trend demand projection. Demands on Metropolitan include Member Agency consumptive use, which includes water exchanged with San Diego County Water Authority and sea water barrier requirements. Member Agency replenishment demands include water for groundwater basins and surface reservoir recharge. CY 2019 demands also include arrangements to deliver water to the Coachella Valley Water District under a long-term delivery and exchange agreement. Also included is an agreement to deliver water to the San Luis Rey River Indian Water Authority with an equal amount of Colorado River supplies provided by the Reclamation as part of a settlement. Losses for CY 2019 are an estimate of Metropolitan distribution system losses, and evaporative and contractual losses from storage.

2019 Estimated Demands, Losses and Obligations (Acre-Feet)	
Member Agency Consumptive Demands	1,524,000
Member Agency Replenishment Demands	136,000
Coachella Valley Water District Agreement	35,000
Exchange with USBR – San Luis Rey	16,000
System and Storage Losses	66,000
Total Estimated Demands and Losses	**1,777,000**

2019 Water Supply Balance

It is early in the water year and a wide range of supply and demand balance outcomes remain possible. Demands on Metropolitan, for example, are uncertain and largely dependent on local weather and snowpack conditions in the southern Sierra that drive Los Angeles Aqueduct supplies and can fluctuate up to +/- 200 TAF. Adjustments to the SWP allocation are dependent on the changing hydrologic conditions in northern California. And finally,

the water use of the higher priority water users on the Colorado River is uncertain and has historically swung supplies for Metropolitan +/- 100 TAF per year.

The table below indicates a potential supply gap of 540 TAF using the current trend demand and supply described earlier in this report at a 15 percent SWP allocation. A final SWP allocation of 45 percent would satisfy this supply gap without implementing WSDM actions.

2019 Water Supply and Demand Balance Scenarios (Million Acre-Feet)	
	Current Trend
Supply Estimate	1.24
Demand and losses Estimate	1.78
Potential Supply Gap [1]	***0.54***
SWP allocation to balance without taking WSDM actions	45%

[1] Based on a 15 percent SWP allocation

The SWP allocation to satisfy this range of potential supply gap is between 30 to 60 percent without taking WSDM actions. There is a high probability that the SWP allocation will reach this range in CY 2019. As the year progresses and supply and demands are better known, staff will narrow this range. Should the SWP allocation remain at 15 percent, however, Metropolitan has ample storage and take capacity to balance this range of supply and demand as shown in **Attachment 1**.

2018 Storage Adjustment

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. For example, Metropolitan's Intentionally Created Surplus (ICS) supply balance was increased by 102 TAF. This increase reflects additional supplies made available to Metropolitan from higher priority water users due to adjustments and decreased use near the end of calendar year 2018. This and other key adjustments are footnoted in **Attachment 1**. Metropolitan is now estimating a net storage gain of approximately 7 TAF in calendar year 2018.

Transfers/Exchanges

Given the uncertainty of Metropolitan's final supply/demand balances, Metropolitan is monitoring opportunities for transfers and/or exchanges in CY 2019. Depending on hydrologic conditions, these supplies could help meet demands, help offset potential draws from or supplement storage reserves, and meet water quality objectives.

At the current 15 percent SWP allocation, there would be capacity to convey water transfer supplies through the SWP Banks Pumping Plant. The decision to supplement supplies with transfers and exchanges, including any necessary board actions, will be made at a later date when more is known of hydrologic conditions and Metropolitan's supply needs.

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 CY 2018.

The California Extraordinary Conservation ICS agreement with the Imperial Irrigation District (IID) and other agencies 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[1]	Any year, conditional on whether or not Metropolitan is implementing a Water Supply Allocation Plan
Total	**462,000**	

[1] Metropolitan may store additional IID water in 2018 pending agreement approval

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 Water District 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**	

2019 WSDM Storage Detail

WSDM Storage	1/1/2019 Storage Levels	CY 2019 Take Capacity [1]	2019 Total Storage Capacity
Colorado River Aqueduct Delivery System	**593,000**	**302,000**	**1,563,000**
Lake Mead ICS	593,000[2]	302,000[3]	1,563,000
State Water Project System	**982,000**	**572,000**	**1,879,000**
MWD SWP Carryover [4]	256,000[5]	256,000	350,000
DWCV SWP Carryover [4]	0	0	N/A
Castaic Lake (DWR Flex Storage)	154,000	154,000	154,000
Lake Perris (DWR Flex Storage)	65,000	65,000	65,000
Arvin Edison Storage Program	154,000	0[6]	350,000
Semitropic Storage Program	187,000	46,000	350,000
Kern Delta Storage Program	138,000	40,000	250,000
Mojave Storage Program	19,000	4,000	330,000
AVEK Storage Program	9,000	7,000	30,000
In-Region Supplies and WSDM Actions	**977,000**	**614,000**	**1,536,000**
Diamond Valley Lake	702,000	512,000	810,000
Lake Mathews	141,000	63,000	182,000
Lake Skinner	37,000	7,000	44,000
IEUA/TVMWD (Chino Basin)	42,000	10,000	100,000
Long Beach (Central Basin)	0	0	13,000
Long Beach (Lakewood)	0	0	4,000
Foothill (Raymond and Monkhill)	0	0	9,000
MWDOC (Orange County Basin)	0	0	66,000
Three Valleys (Live Oak)	0	0	3,000
Three Valleys (Upper Claremont)	1,000	1,000	3,000
Western	5,000	4,000	12,000
Cyclic - Upper San Gabriel	48,000	16,000	100,000
Cyclic - Three Valleys	0	0	40,000
Cyclic - Burbank	0	0	35,000
Cyclic - Calleguas	0	0	5,000
Cyclic - Eastern	1,000	1,000	10,000
Cyclic - MWDOC	0	0	100,000
Other Programs	**563,000**	**74,000**	**1,128,000**
Other Emergency Storage	328,000	0	328,000
DWCV Advanced Delivery Account	235,000	74,000	800,000
Total	**3,115,000**	**1,562,000**	**6,106,000**
Emergency	626,000	0	626,000
Total WSDM Storage [7]	**2,489,000**	**1,562,000**	**5,480,000**

[1] Take capacity assumed under a 15% SWP Table A Allocation.

[2] Increased to reflect additional supplies made available to Metropolitan from higher priority water users due to adjustments and decreased use near the end of calendar year 2018.

[3] Capacity available to fill Colorado River Aqueduct assuming 949,000 AF of base supplies (no agricultural adjustment).

[4] Total Storage Capacity varies year to year based on prior year remaining balance added to current year contractual limits.

[5] Adjusted to reflect more Table A deliveries in CY 2018 reducing supplies available for carryover.

[6] Withdrawls are limited due to water quality constraints offset by potential exchange opportunities.

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