

The Metropolitan Water District of Southern California

Agenda

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

IW Committee

G. Peterson, Chair
D. Erdman, Vice Chair
L. Ackerman
R. Atwater
G. Cordero
L. Dick
S. Faessel
F. Jung
T. McCoy
J. Morris
B. Pressman
T. Quinn
M. Ramos
R. Record
T. Smith

Imported Water Committee

Meeting with Board of Directors *

December 12, 2022

2:00 p.m.

Live streaming is available for all board and committee meetings on mwdh2o.com ([Click Here](#))

A listen only phone line is also available at 1-877-853-5257; enter meeting ID: 831 5177 2466. Members of the public may present their comments to the Committee on matters within the committee's jurisdiction as listed on the agenda via in-person or teleconference. To participate via teleconference (833) 548-0276 and enter meeting ID: 815 2066 4276.

Monday, December 12, 2022 Meeting Schedule

09:00 a.m. Sp BOD
10:00 a.m. F&I
11:00 a.m. OP&T
12:00 p.m. A&E
12:30 p.m. E&O
02:00 p.m. IW
03:00 p.m. WP&S

MWD Headquarters Building • 700 N. Alameda Street • Los Angeles, CA 90012

* The Metropolitan Water District's meeting of this Committee is noticed as a joint committee meeting with the Board of Directors for the purpose of compliance with the Brown Act. Members of the Board who are not assigned to this Committee may participate as members of the Board, whether or not a quorum of the Board is present. In order to preserve the function of the committee as advisory to the Board, members of the Board who are not assigned to this Committee will not vote on matters before this Committee.

1. Opportunity for members of the public to address the committee on matters within the committee's jurisdiction (As required by Gov. Code Section 54954.3(a))

**** CONSENT CALENDAR ITEMS -- ACTION ****

2. CONSENT CALENDAR OTHER ITEMS - ACTION

- A. Approval of the Minutes of Imported Water Committee Meeting [21-1734](#)
held November 7, 2022 (Copies have been submitted to each Director, Any additions, corrections, or omissions)

Attachments: [12122022 IW 2A Minutes.pdf](#)

3. CONSENT CALENDAR ITEMS - ACTION

NONE

Zoom Online and Boardroom

**** END OF CONSENT CALENDAR ITEMS ****

4. OTHER BOARD ITEMS - ACTION

NONE

5. BOARD INFORMATION ITEMS

NONE

6. COMMITTEE ITEMS

- a. Report on Colorado River Evaporation Loss [21-1736](#)

Attachments: [12122022 IW 6a Presentation](#)

- b. Update on Water Surplus and Drought Management and Water Shortage Emergency Condition [21-1737](#)

Attachments: [12122022 IW 6b Report](#)
[12122022 IWC 6b Presentation](#)

7. MANAGEMENT REPORTS

- a. Colorado River Manager's Report [21-1738](#)

Attachments: [12122022 IW 7a Report](#)

- b. Bay-Delta Manager's Report [21-1739](#)

Attachments: [12122022 IW 7b Report](#)

8. FOLLOW-UP ITEMS

NONE

9. FUTURE AGENDA ITEMS

10. ADJOURNMENT

NOTE: This committee reviews items and makes a recommendation for final action to the full Board of Directors. Final action will be taken by the Board of Directors. Agendas for the meeting of the Board of Directors may be obtained from the Board Executive Secretary. This committee will not take any final action that is binding on the Board, even when a quorum of the Board is present.

Writings relating to open session agenda items distributed to Directors less than 72 hours prior to a regular meeting are available for public inspection at Metropolitan's Headquarters Building and on Metropolitan's Web site <http://www.mwdh2o.com>.

Requests for a disability related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting should be made to the Board Executive Secretary in advance of the meeting to ensure availability of the requested service or accommodation.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

MINUTES

IMPORTED WATER COMMITTEE

November 7, 2022

Committee Chair Peterson called the teleconference meeting to order at 1:31 p.m.

Members present: Chair Peterson, Vice Chair Erdman, Directors Ackerman, Atwater, Cordero, Dick, Jung, Morris, Pressman, Record, and Smith.

Members absent: Directors Faessel, McCoy, Quinn, and Ramos.

Other Board Members present: Directors Abdo, Blois, Cordero, De Jesus, Fellow, Fong-Sakai, Goldberg, Kurtz, Lefevre, Miller, and Tamaribuchi.

Committee Staff present: Arakawa, Coffey, Hagekhalil, Hasencamp, Horton, Upadhyay, Winn, and Zinke

1. OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE COMMITTEE ON MATTERS WITHIN THE COMMITTEE'S JURISDICTION

None

CONSENT CALENDAR ITEMS -- ACTION

2. CONSENT CALENDAR OTHER ITEMS -- ACTION

- A. Approval of the Minutes of the Meeting of the Imported Water Committee held October 10, 2022

3. CONSENT CALENDAR ITEMS – ACTION

Director Jung made a motion, seconded by Director Dick to approve the consent calendar consisting of items 2A.

The vote was:

Ayes: Directors Ackerman, Atwater, Cordero, Dick, Erdman, Jung, Morris, Peterson, Pressman, Record, and Smith.

Noes: None

Abstentions: None

Absent: Directors Faessel, McCoy, Quinn, and Ramos.

The motion for item 2A passed by a vote of 11 ayes, 0 noes, 0 abstention, 4 absent.

END OF CONSENT CALENDAR ITEMS

4. OTHER BOARD ITEMS – ACTION

None

5. BOARD INFORMATION ITEMS

None

6. COMMITTEE ITEMS

- a. Subject: Palo Verde Valley Community Improvement Fund Presented by:
Jay Abbs, Board Chair and Marilee Harkinson, Chief Executive Officer

Presented by: Jay Abbs, Board Chair

Marilee Harkinson, Chief Executive Officer

Bill Hasencamp, Colorado River Resources Manager, introduced the speakers.

Mr. Abbs provided information about Palo Verde Valley Community Improvement Fund (CIF), including a description of the organization, its directors, senior management, and funding.

Ms. Harkinson explained the purpose of CIF and how it has helped local businesses in their small city with loans over the years. She gave examples that included restaurants, a pharmacy, a nursing home, a hospital, a hotel, and many more. She concluded her presentation by noting plans for the future.

The following Directors provided comments or asked questions:

1. Erdman
2. Record
3. Peterson

The presenters responded to the Directors' questions and comments.

Chair Peterson announced that there would be a reordering of the meeting agenda. The Management reports would be heard next then item 6e before 6b, 6c, and 6d.

7. MANAGEMENT REPORTS

- a. Subject: Colorado River Manager's Report
Presented by: Bill Hasencamp, Colorado River Resources Manager

Mr. Hasencamp reported on an October Colorado River employee field trip for new employees, on a Salinity Control Forum meeting that occurred two weeks prior to this meeting, on California's proposal to conserve Colorado River Water, and introduced Shanti Rosset to talk about the federal government's potential action.

- a1. Subject: Update on the U.S. Bureau of Reclamation
Notice of Intent to Prepare a Supplemental
Environmental Impact Statement for the 2007
Interim Guidelines.

Presented by: Shanti Rosset, Colorado River Resources Policy
Manager

Ms. Rosset reported on the Bureau of Reclamation's October 28 announcement on plans to prepare a supplemental Environmental Impact Statement for the 2007 Interim Guidelines. She explained what the Interim Guidelines are, and what they mean for Metropolitan and described the potential revisions and the reasons for them.

The following Director provided comments or asked questions:

- 1. Lefevre

Staff responded to the Director's questions and comments.

- b. Subject: Bay-Delta Manager's Report
Presented by: Steve Arakawa, Bay-Delta Initiatives Manager

Mr. Arakawa highlighted Bay-Delta Initiatives (BDI) science efforts that were mentioned in the written Bay-Delta Management Report that covered October 2022 activities, including the effects of pesticides on flood plain management, and longfin smelt distribution studies. The studies have been published and BDI's Shawn Acuña was one of the scientists involved. He also announced that a Delta Islands report that will be provided at the December 2022 Real Property and Asset Management Committee meeting.

- c. Subject: Water Resource Management Manager's Report
 Presented by: Brad Coffey, Water Resource Management Group Manager

Mr. Coffey reported that the California Department of Water Resources has updated their Delivery Capability Report and explained how it is used and what the model shows. He also noted that there will be a more comprehensive update in the 2023 delivery capability report.

6. COMMITTEE ITEMS (Continue)

- e. Subject: Report on California Proposal to Conserve Water for Lake Mead

Presented by: Bill Hasencamp, Colorado River Resources Manger

Mr. Hasencamp provided information on California's voluntary offer to conserve up to an additional 400,000 acre-feet of water in Lake Mead each year from 2023 to through 2026. He also described the federal government's proposal to provide short-term and long-term drought mitigation actions and noted next steps.

The following Directors provided comments or asked questions:

1. Lefevre
2. Record
3. Erdman

Staff responded to the Directors' questions and comments..

- b. Subject: Update on Bay-Delta Salmon Research
 Presented by: Alison Collins, Bay-Delta Initiatives Senior Resource Specialist

Steve Arakawa, Bay-Delta Initiatives Manager, explained the projects importance and introduced the speaker.

Ms. Collins presented information regarding the Salmonid Recovery Project (project) by describing its goal, the planning teams, background, and the three phases of the project: Framework to Define Recovery, Engagement, Decision Support.

The following Directors provided comments or asked questions:

1. Record
2. Cordero

Staff responded to the Directors' questions and comments.

- c. Subject: Update on Delta Conveyance Public Draft Environmental Impact Report

Presented by: Dee Bradshaw, Bay-Delta Initiatives Program Manager

Jennifer Nevills, Bay-Delta Initiatives Program Manager

Nina Hawk, Bay-Delta Initiatives Policy Manager, reminded the Committee that Part 1 of the presentation on the Delta Conveyance Public Draft Environmental Impact Report (DEIR) was provided at the October Imported Water Committee meeting, gave a brief outline of today's Part 2 presentation, and introduced the speakers.

Ms. Bradshaw provided a brief recap of last month's presentation (Part 1), described the Delta Conveyance Project (DCP) Stakeholder Engagement Committee's purpose and its activities, and highlighted Chapter 32 of the DEIR regarding Tribal Cultural Resources.

Ms. Nevills provided an overview of the Environmental Justice Analysis and related outreach efforts as detailed in Chapter 29 of the DCP DEIR. She also highlighted Chapter 24 regarding the Community Benefits Program including its intent and framework and briefly mentioned the next steps.

- d. Subject: Update on Water Surplus and Drought Management and Water Shortage Emergency Condition

Presented by: Noosha Razavian, Water Resource Management Associate Resource Specialist

Brad Coffey, Water Resource Management Manager, introduced the speaker.

Ms. Razavian provided an update on the current water supply demand balance, and she addressed a question raised at the earlier Engineering and Operations Committee meeting regarding current take capacity on the Central Valley storage programs. She also gave an update on the Emergency Water Conservation Program, on planning efforts for calendar year 2023, and highlighted next steps.

The following Directors provided comments or asked questions:

1. Smith
2. Miller
3. Pressman

Staff responded to the Directors' questions and comments..

8. FOLLOW-UP ITEMS

None

9. FUTURE AGENDA ITEMS

None

Meeting adjourned at 3:49 p.m.

Glen Peterson
Chair



Imported Water Committee

Report on Colorado River Evaporation Loss

Item 6a

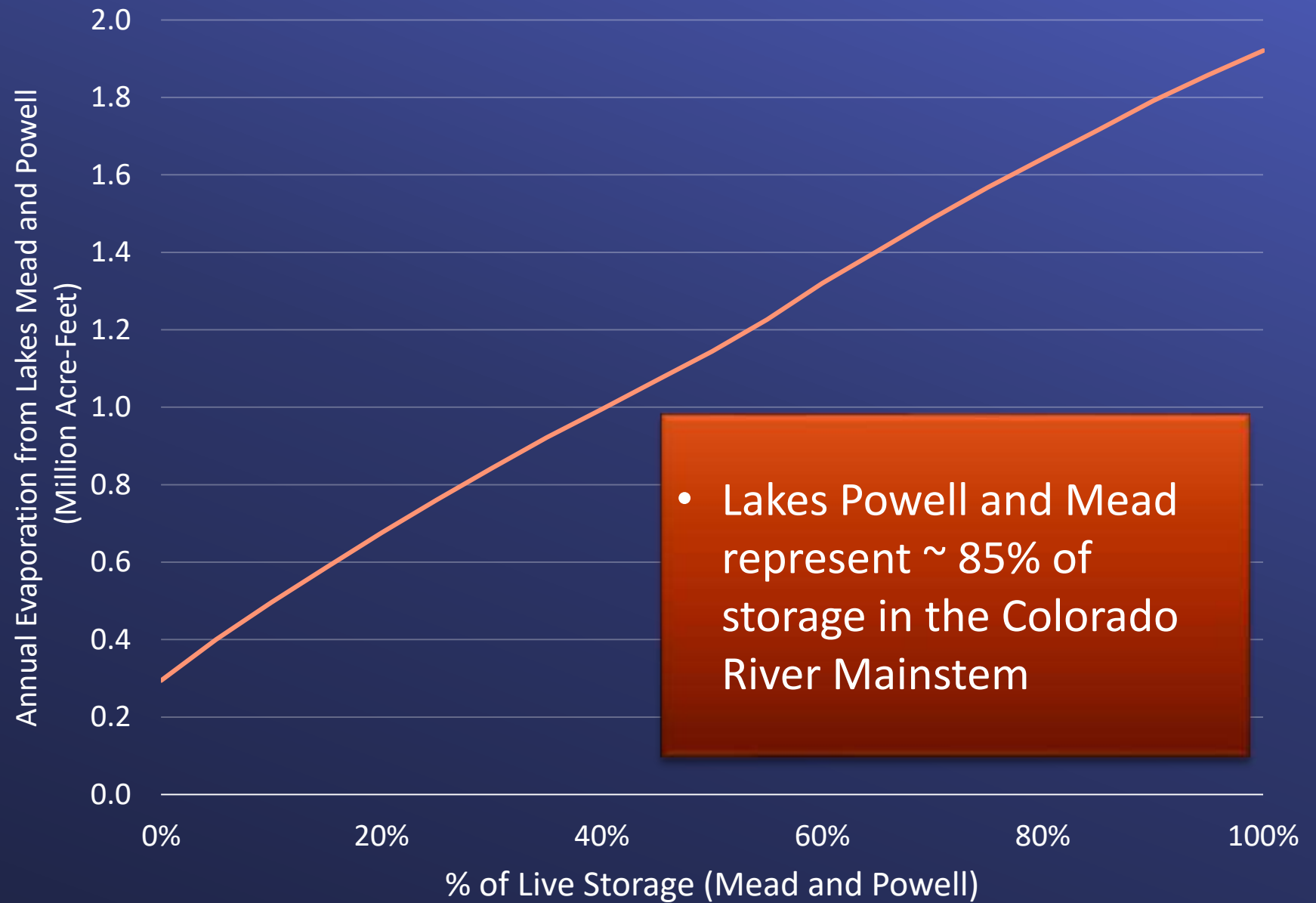
December 12, 2022

Colorado River is Highly Regulated

Total storage capacity in the Colorado River system is ~4 times the average annual flow of the river



Significant Colorado River System Storage Comes with Evaporation Losses



Upper and Lower Colorado River Basins Address Evaporation in Different Ways



- Net reservoir evaporation is charged to Upper Basin as a whole.
 - Has not impacted allocations to date.



- Reservoir evaporation is not charged to state allocations.
- Evaporation losses influence shortage declarations.

Lower Basin Evaporation in the News

Four things to know about the lower Colorado River basin

Western Slope water officials tour sites integral to lower basin consumption

News [FOLLOW NEWS](#) | Nov 24, 2022

Evaporation loss not accounted for in lower basin

“We are asking for (the lower basin) to be treated the same way we are so the system and the playing field is even,” Mueller said. “Once we are on an even playing table, then we can address the way we work in the future, but it’s really hard to do that when the rules they play by down here enable so much more water use than what we have in the upper basin.”



SOUTHERN NEVADA WATER AUTHORITY®

New analysis wants to pinpoint the water lost to evaporation on the Lower Colorado River

KUNC | By Luke Runyon
Published October 27, 2022 at 2:00 AM MDY

SUMMARY OF ASSESSMENTS BY STATE / MX

State	afy
AZ	401,018
CA	771,486
NV	17,570
MX	352,926
TOTAL	1,543,000

SUMMARY OF WATER USER ASSESSMENTS

Reach	State	Major Water Users	afy
1	NV	LVVWD/SNWA - SNWP	15,514
3	AZ	Central Arizona Water Conservation District	190,474
3	CA	The Metropolitan Water District of Southern California	110,464
4	AZ	AZ Colorado River Indian Reservation	45,378
4	AZ	Wellton-Mohawk I.D.D.	51,654
4	AZ	Yuma County Water Users' Association	47,611
4	AZ	Yuma Mesa I.D.D.	28,657
4	CA	Coachella Valley Water District	70,074
4	CA	Imperial Irrigation District	509,508
4	CA	Palo Verde Irrigation District	71,335
5	MX	Mexico	352,926
Subtotal			1,493,596
Reach	State	Remaining Water Users	afy
All	AZ	Other Users in AZ	37,243
All	CA	Other Users in CA	10,105
All	NV	Other Users in NV	2,056
Subtotal			49,404
TOTAL			1,543,000

Variance in Water Accounting Rules Between Basins

Calculating Consumptive Use

Source of Accounted Water



Human-Made Depletions

Tributary
&
Mainstem



Diversion – Return Flow

Mainstem Only

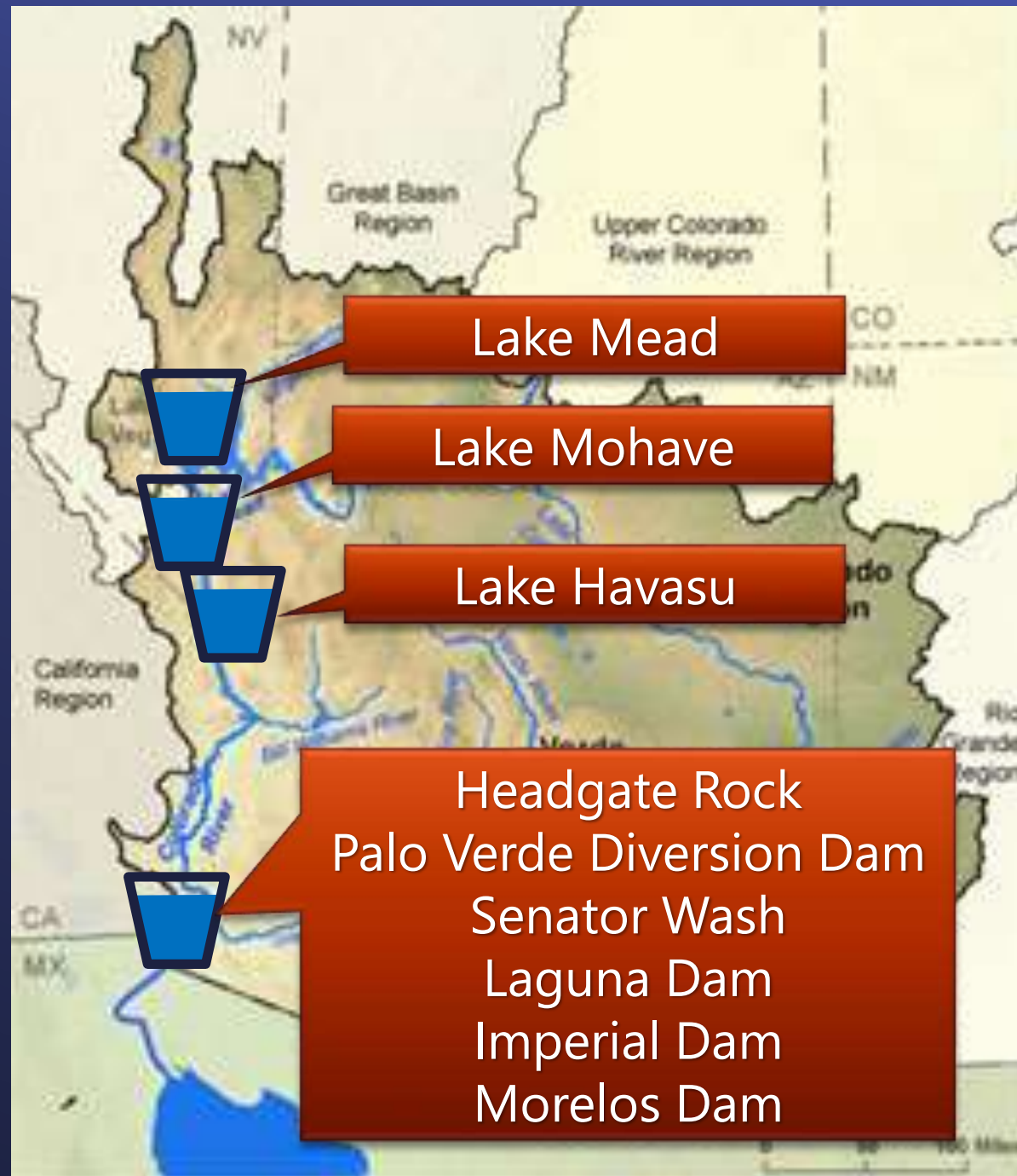


What if the Lower Basin
Treated Losses Similarly to
the Upper Basin?

Governing Principles of Hypothetical Analysis:

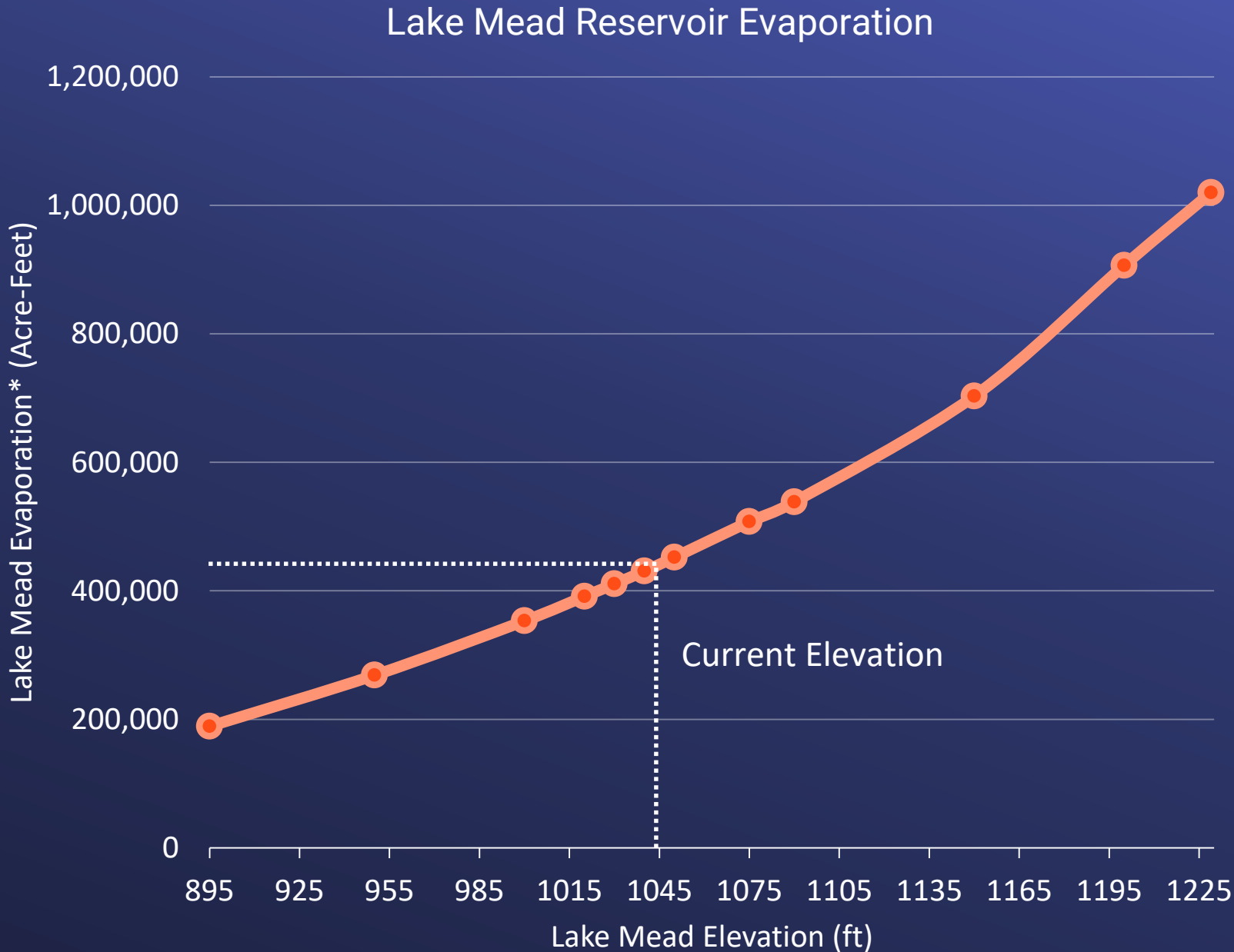
- Human-made Depletion
- Mainstem + Tributary

Lower Colorado River Basin Mainstem Reservoirs



Lake Mead Evaporation* Varies based on Lake Elevation

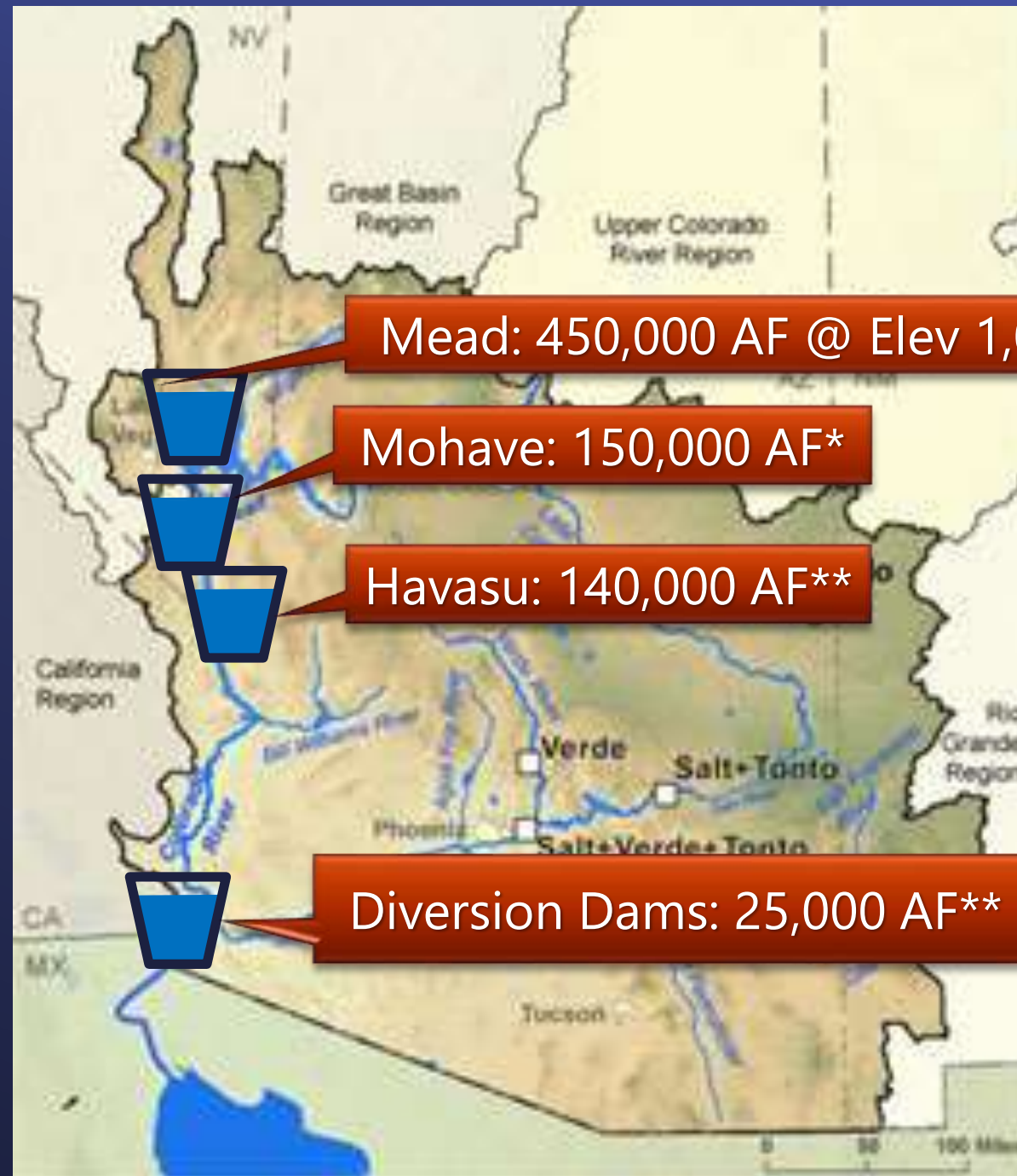
*Gross Evaporation



Current Lower Basin Mainstem Reservoir Evaporation

Sources:
*2022 Report on Implementation Effects of
New Evaporation Coefficient for Lake Mead
and Lake Mohave
**CU&L 2001-2005 Average

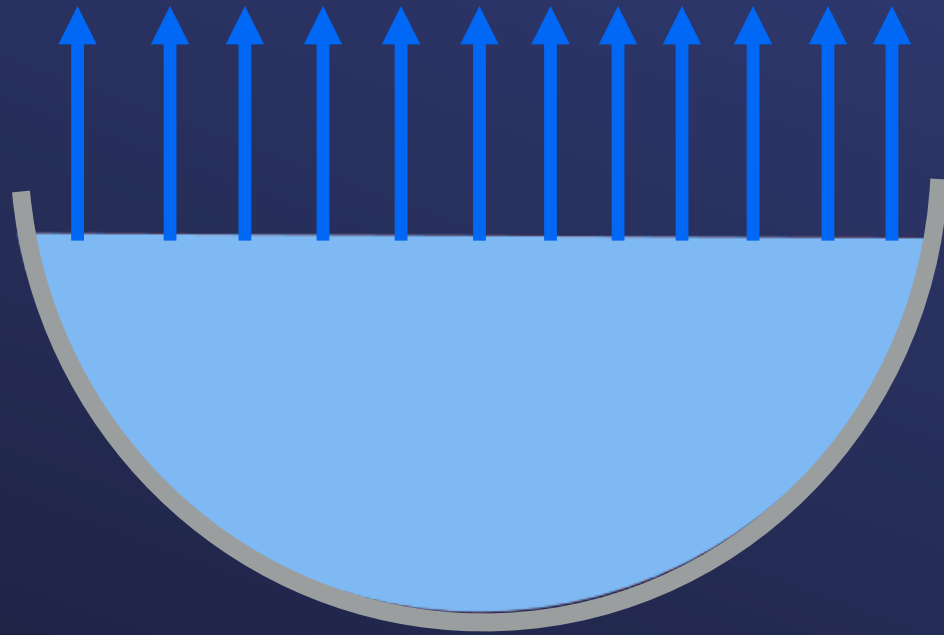
December 12, 2022



Davis Dam Fun Facts:

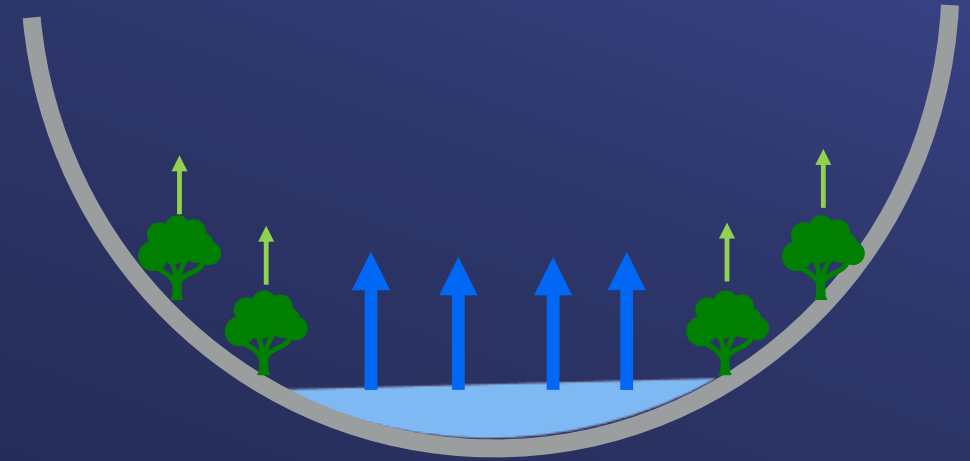
- 1944 Mexican Treaty, Section 12(b), Obligated the United States to build Davis Dam.
- A part of the capacity of Lake Mohave would be to regulate Mexican Treaty Deliveries of Colorado River Water.

Human-Made Depletions Looks at Difference between With and Without Reservoir Conditions



With Reservoir
Condition

—



Without Reservoir
Condition

Upper Basin Considers Both Tributary and Mainstem Use when Assessing Mainstem Reservoir Losses



Tributary &
Mainstem

Tributary &
Mainstem

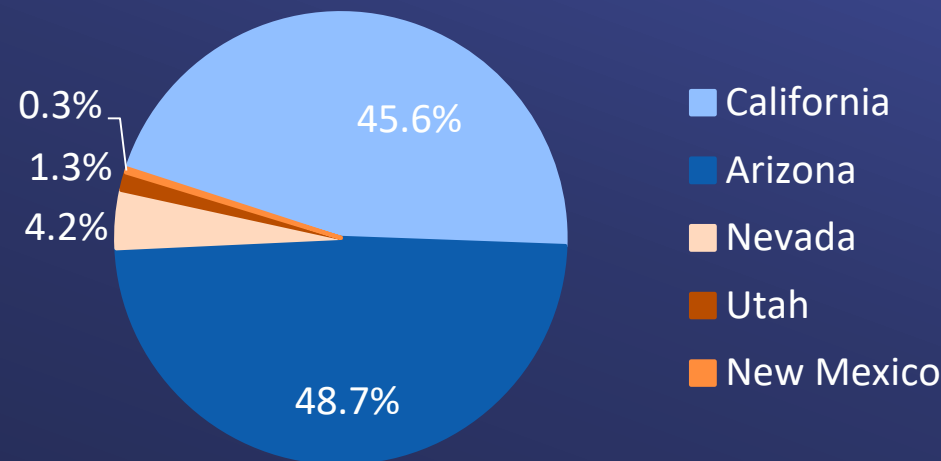
Lower Basin Tributary Use is Significant

- All actions within the Colorado River Basin borders impact the Colorado River
- Impacts both Upper Division and Lower Basins



*CU&L 2001-2005 Average

Proportion of Lower Colorado River Basin Use by State



	California	Arizona	Nevada	Utah	New Mexico	Lower Basin States Total
Basic Apportionment	4,400,000	2,800,000	300,000	0	0	7,500,000
Tributary Use	0	1,900,000	102,000	124,000	28,000	2,154,000
Total	4,400,000	4,700,000	402,000	124,000	28,000	9,654,000

Hypothetical: Calculating Lower Basin Net Reservoir Evaporation Using Upper Basin Approach

	Net Evaporation	Upper Division States	California	Arizona	Nevada	Utah	New Mexico
Lake Mead	350,000	-	159,500	170,400	14,600	4,500	1,000
Lake Mohave*	117,000	58,500	27,089	28,936	2,475	0	0
Lake Havasu	109,000	-	49,700	53,100	4,500	1,400	300
Diversion Dam	19,000	-	8,700	9,300	800	200	100
Total	595,000	58,500	244,989	261,736	22,375	6,100	1,400

- Gross reservoir evaporation converted to net evaporation. Assumed ratio of Lake Powell gross to net evaporation.
- Reservoir evaporation assigned to states, proportional to use of water from the Lower Basin
- *Lake Mohave net evaporation split between basins, then assigned to Lower Division states proportional to use of water from Lower Basin.

Conclusions

- Evaporation losses are accounted and applied differently between the Upper and Lower Basin
- If there was a collective desire to voluntarily change how evaporation losses are applied, there are many potential approaches
- Aligning accounting and application methodologies is one potential approach
- Methodology has a significant impact in outcome





● **Water Surplus and Drought Management Update** *Conditions as of 11/29/2022*

Summary

This report accounts for water supply, demand, and storage conditions for calendar year (CY) 2022 as of November 29, 2022. This report also tracks the hydrologic conditions for water year (WY) 2022-2023.

For CY 2022, an estimated 1.34 million acre-feet (MAF) of imported supply are available to help meet demand. The State Water Project (SWP) supply is 258 thousand acre-feet (TAF), which includes 134 TAF of water allocated for Human Health and Safety needs from the Department of Water Resources (DWR) consistent with terms of the State Water Contract. The Colorado River supply is 1,083 TAF and reflects the adjustment to Metropolitan's supply from higher priority water use as reported by the United States Bureau of Reclamation (USBR). Through the priority system, water not used by the higher priority water users in California becomes available as a supply to Metropolitan. The higher priority water users continue to use less water than their approved water orders, resulting in an increase in Metropolitan's projected Colorado River supply by an estimated 35 TAF. This estimate may continue to fluctuate as we approach the end of the year.

The demand on Metropolitan is currently estimated at 1.66 MAF for CY 2022. The demand projection has been decreasing all year from previous estimates. This reflects the effectiveness of ongoing conservation efforts and the increased use of local supplies that is reducing the need for the limited SWP supply. SWP Dependent Area agencies under the Emergency Water Conservation Program (EWCP) have dropped their water use by roughly 35 percent below their expected water use and are collectively 3 percent below the collective volumetric limits set in the EWCP. The current estimated supply/demand gap is estimated to be 322 TAF. Metropolitan will satisfy this gap through withdrawals from storage as detailed on **Attachment 1** and through continued demand reductions from the EWCP. Metropolitan is projecting to end the year with 2.3 MAF of water in its dry-year storage accounts.

As for CY 2023, DWR announced its initial SWP allocation on December 1, 2022. Given the continuation of unprecedented drought conditions and limited water supply in 2022, the initial allocation for 2023 is 5 percent of Table A contract amounts. DWR is also provisionally allocating additional SWP supplies to meet Human Health and Safety needs. Allocations will be updated monthly as snowpack and runoff information is assessed, with a final allocation typically determined in May or June 2023. Hydrologic conditions to date are presented on page 2. Metropolitan is not planning for a full Colorado River Aqueduct (CRA) in CY 2023 due to dire conditions on the Colorado River.

Operational limitations, potential conservation mandates from USBR, and future water obligations will limit access and availability to Metropolitan's dry-year storage accounts for CY 2023. In response, Metropolitan staff will update the Board of Directors in December on initial volumetric limits for the SWP Dependent Area EWCP for 2023 and call for immediate outdoor water use reductions and extraordinary conservation in Blended and Colorado River Exclusive Areas. Metropolitan is also anticipating the need for regionwide imported supply restrictions under a Water Supply Allocation Plan to be put into effect later in 2023. Effective and timely conservation by the region is crucial to stretch the limited supply we have and mitigate the region's need for deeper mandatory impacts in future years.

Purpose

Informational

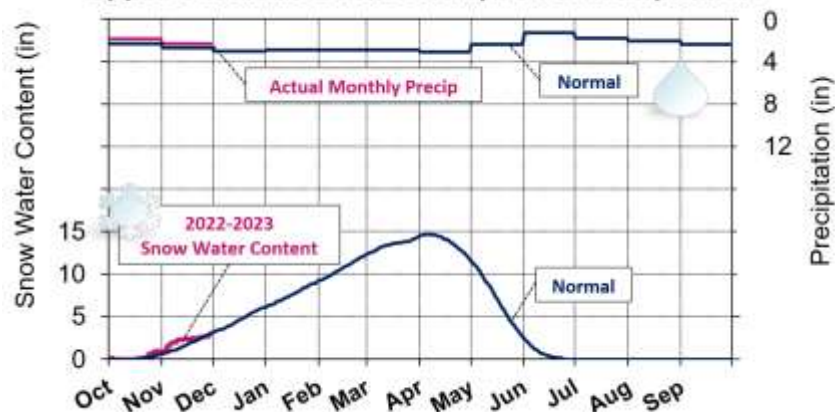
Attachments

- | | |
|---------------|---|
| Attachment 1: | Projected 2022 WSDM Storage Detail (5 percent SWP Table A allocation) |
| Attachment 2: | Agreements to Exchange or Return Stored Water and Cyclic Program Balances |
| Attachment 3: | Emergency Water Conservation Program Performance |

Detailed Report

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

Upper Colorado Basin Snowpack & Precipitation



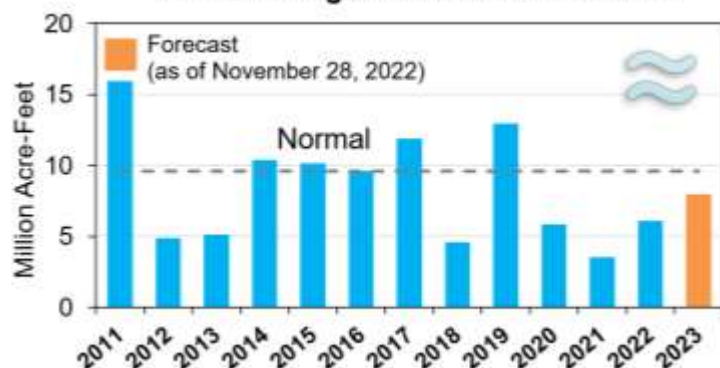
Upper Colorado River Basin

✱ Normal snowpack water content for this date (3.0 inches or 100% of normal for this date). Snow data early in the season may not provide a valid measure of conditions.

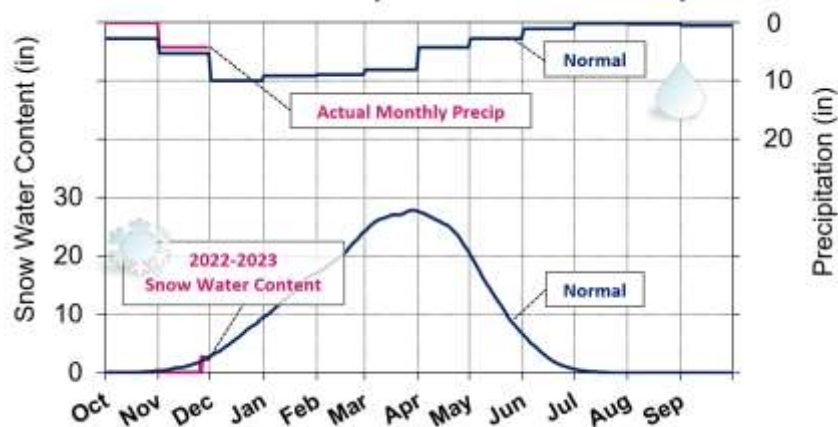
◆ Below normal precipitation to date (4.2 inches or 86% of normal for this date).

≈ Runoff into Lake Powell for WY 2023 is forecasted at 83% of normal.

Powell Unregulated Water Year Inflow



Northern Sierra Snowpack & 8 Station Precipitation



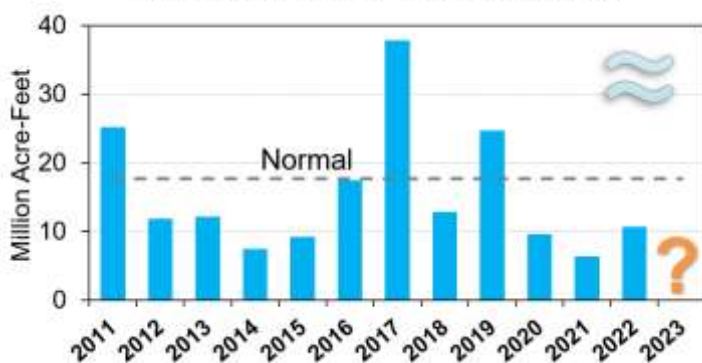
Sacramento River Basin

✱ Near normal snowpack water content for this date (2.5 inches or 98% of normal for this date). Snow data early in the season may not provide a valid measure of conditions.

◆ Below normal precipitation to date (4.3 inches or 54% of normal for this date).

≈ Runoff forecast for WY 2023 unavailable at the time of this report.

Sacramento River Water Year Runoff



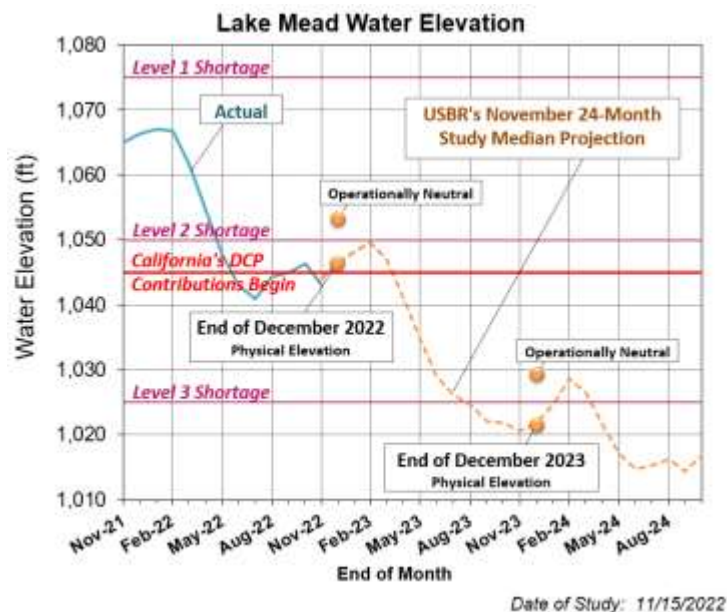
CRA Supplies	Acre-Feet
Basic Apportionment	550,000
IID/ MWD Conservation Program	105,000
CVWD - 2nd Amendment, Exchange of Additional Water	53,000
PVID Following Program	25,000
Exchange w/ SDCWA (IID/Canal Lining)	280,000
Exchange w/ USBR (San Luis Rey Tribe)	16,000
Lower Colorado Water Supply Project	9,000
Bard Seasonal Following Program	3,000
Quechan Diversion Forbearance	6,000
Quechan Seasonal Following Program ¹	0
Higher Priority Water Use Adjustment ²	35,000
Total CRA Supplies³	1,083,000

¹ Rounded to the nearest thousand.

² Per USBR Forecast (11/29/22).

³ Total may not sum due to rounding.

- Lake Mead storage is currently 7.2 MAF or elevation 1,043.1 feet (28 percent of total capacity).
- The Lower Basin is at a Level 1 shortage in CY 2022. Supplies to Metropolitan will not be curtailed and Metropolitan will have full access to its Intentionally Created Surplus (ICS) in CY 2022 to fill the CRA.
- The Lower Basin will be in a first-ever 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 will use ICS to meet future DCP contributions; additional use of ICS to meet service area demand remains uncertain.



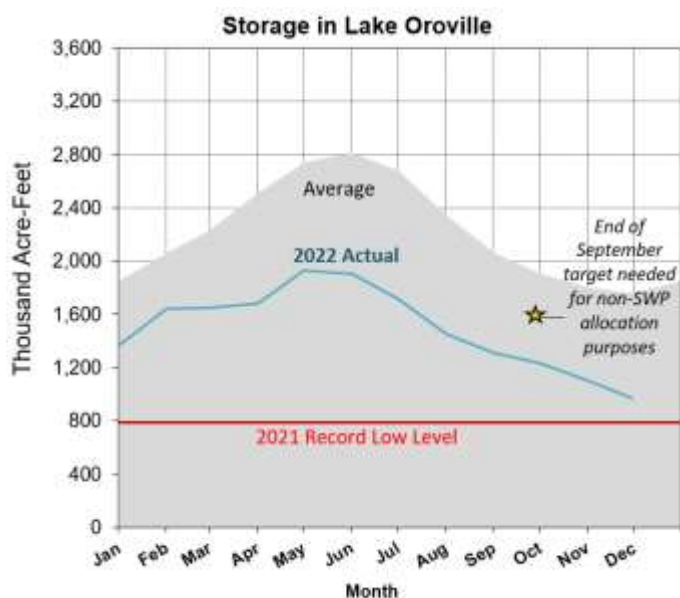
SWP Supplies	Acre-Feet
Table A (5% SWP allocation)	96,000
Article 21	0
Port Hueneme ¹	0
SWC Buyers Group Transfers ²	6,000
Yuba Accord Dry-Year Purchase Program ²	14,000
MWDOC/IRWD Partnership	4,000
Purchase of SDCWA's Semitropic Supply	4,000
Human Health & Safety Supply	134,000
Total SWP Supplies³	258,000
Total Supplies (CRA + SWP)	1,341,000
(Prior to storage actions)	

¹ Rounded to the nearest thousand.

² Current estimate subject to change based on buyer/seller participation and losses.

³ 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 2022. 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 134 TAF of HH&S supply for Metropolitan.
- Lake Oroville is currently at 968 TAF (27 percent of total capacity) or 55 percent of historical average as of the date of this report.
- The initial SWP Table A allocation for CY 2023 is 5 percent plus additional supplies to meet HH&S needs.

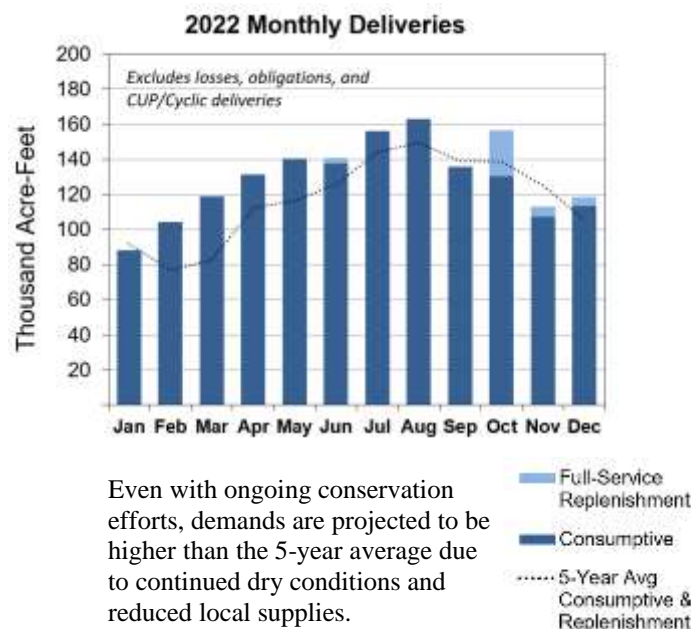


Current Demand	Acre-Feet
Member Agency Consumptive ¹	1,542,000
Member Agency Replenishment	40,000
Coachella Valley Water District Agreement	15,000
Return to Imperial Irrigation District ²	0
Exchange w/ San Luis Rey Tribe	16,000
System and Storage Losses	50,000
Cyclic Deliveries	0
Total Demands ³	1,664,000

¹ Includes exchange w/ SDCWA (IID/Canal Lining) and CUP sales.

² Per USBR Forecast (11/29/22).

³ Total may not sum due to rounding.

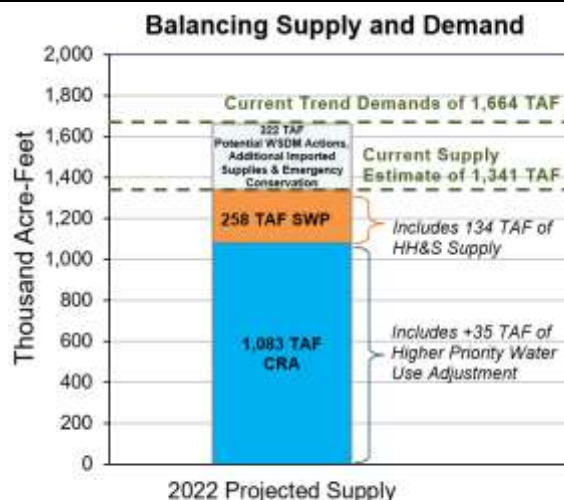


Even with ongoing conservation efforts, demands are projected to be higher than the 5-year average due to continued dry conditions and reduced local supplies.

MANAGING REGIONAL SUPPLY AND DEMAND

Supply/Demand Balance	Acre-Feet
Total Supplies	1,341,000
Total Demands	1,664,000
Current Balance Estimate ¹	-322,000

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 2022, enhance Metropolitan's capability of delivering supplies to the SWP Dependent Areas, and reduce storage withdrawals in 2022.

- Strategic withdrawals of water from dry-year storage reserves.
- Coordinating with member agencies to identify new drought actions targeted at Metropolitan's SWP Dependent Areas.
- Executed an agreement with DWR to allow for water withdrawals from Perris Flex storage at Castaic Lake.
- Increased exchange amounts with Arvin-Edison for Metropolitan to receive Friant surface water supplies.
- Maximizing use of Colorado River or stored supplies by using the Greg Avenue pump station and drafting water from Diamond Valley Lake to serve the Lakeview Pipeline and the Mills Plant.
- Advancing infrastructure improvements to reduce the impact of the current drought and provide future system flexibility.
- Working with member agencies to switch from service connections providing SWP supplies to alternate connections that use Colorado River supplies, both within and outside of the Operational Shift Cost-Offset Program.
- Purchasing San Diego County Water Authority's groundwater stored in the Semitropic Water Bank and leasing their pumping capacity.
- Partnering with non-member agencies such as the San Bernardino Valley Municipal Water District, a SWP Contractor, for exchange opportunities.
- Utilizing the Coordinated Operating Agreement with Municipal Water District of Orange County and Irvine Ranch Water District to enhance SWP supplies.
- Securing one-year transfers with various water districts north of the Sacramento-San Joaquin River Delta.
- Implementing the Emergency Water Conservation Program in the SWP Dependent Area.
- Receiving deliveries of HH&S supply from DWR to help meet demands in the SWP Dependent Area.
- Executed a Reverse Cyclic Program agreement with the Calleguas Municipal Water District to defer some deliveries to a future year.

2022 WSDM Storage Detail

WSDM Storage	1/1/2022 Storage Levels	Net Projected Storage Action Put (+) / Take (-)	Projected End of Year 2022 Balance ¹	2022 Total Storage Capacity
Colorado River Aqueduct Delivery System	1,252,000	-53,000	1,199,000	1,657,000
Lake Mead ICS	1,252,000 ²	-53,000	1,199,000	1,657,000
State Water Project System	636,000	-157,000	479,000	1,879,000
MWD SWP Carryover ³	38,000	-23,000 ⁴	15,000	350,000
DWCV SWP Carryover ³				
MWD Articles 14(b) and 12(e)	0	0	0	N/A
Castaic and Perris DWR Flex Storage	49,000	-46,000 ⁵	3,000	219,000
Arvin Edison Storage Program	136,000	-17,000 ⁶	119,000	350,000
Semitropic Storage Program	218,000	-51,000 ⁷	167,000	350,000
Kern Delta Storage Program	149,000	-20,000	129,000	250,000
Mojave Storage Program	19,000	0	19,000	330,000
AVEK Storage Program	27,000	0	27,000	30,000
In-Region Supplies and WSDM Actions	795,000	-101,000	694,000	1,246,000
Diamond Valley Lake	600,000	-109,000	491,000	810,000
Lake Mathews and Lake Skinner	179,000	17,000	196,000	226,000
Conjunctive Use Programs (CUP) ⁸	16,000	-9,000	7,000	210,000
Other Programs	674,000	-11,000	663,000	1,181,000
Other Emergency Storage	381,000	0	381,000	381,000
DWCV Advanced Delivery Account	293,000	-11,000	282,000	800,000
Total	3,357,000	-322,000	3,035,000	5,963,000
Emergency	750,000	0	750,000	750,000
Total WSDM Storage (AF) ⁹	2,607,000	-322,000	2,285,000	5,213,000

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

² Reflects USBR's final accounting for 2021, released in May 2022. This amount is net of the water Metropolitan stored for IID in Lake Mead in an ICS sub-account.

³ Total storage capacity varies year to year based on prior year remaining balance added to current year contractual limits.

⁴ Net storage action of withdrawing 38,000 AF from carryover and adding/repositioning 15,000 AF of previously banked groundwater into carryover storage.

⁵ Available for withdrawal from Castaic Lake in 2022 pursuant to an MWD-DWR agreement.

⁶ Take amounts dependent on exchange capabilities.

⁷ Includes leasing 5,000 AF of return capacity from SDCWA. This provides Metropolitan the ability to withdraw more of its groundwater stored in the program.

⁸ 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.

⁹ Total WSDM Storage level subject to change based on accounting adjustments.

Agreements to Exchange or Return Stored Water

	Future Returns ¹
CR Total (AF)	802,000
Water Stored for IID under the California ICS Agreement and its Amendment or the 2021 Settlement Agreement with IID	262,000 ²
Storage and Interstate Release Agreement with Southern Nevada Water Authority	330,000 ³
Coachella Valley Water District Agreement	210,000 ⁴
SWP Total (AF)	350,000
DWR Flex Storage	216,000 ⁵
Human Health & Safety	134,000 ⁶
Total (AF)	1,152,000

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

² IID can request return in any year, conditional on agreement terms.

³ Up to 30,000 AF per year beginning no earlier than 2022.

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 planning to withdraw 46,000 AF in 2022, as shown on page 5, and will need to return this amount by 2027.

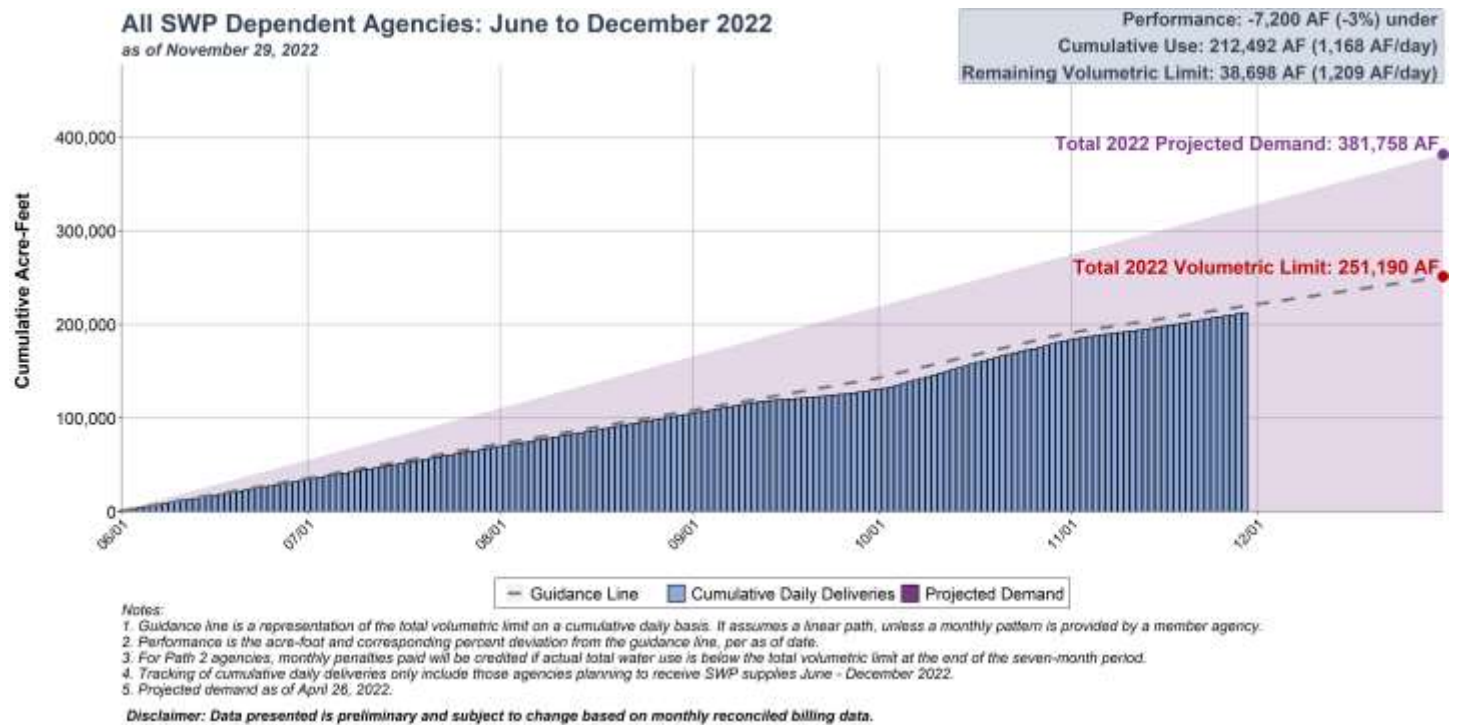
⁶ Metropolitan's scheduled CY 2022 Human Health & Safety deliveries. Any water taken must be returned by 2027.

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	78,000
2021	78,000	0	0	0	28,000	50,000
2022 ¹	50,000	0	0	0	32,000	18,000

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

Emergency Water Conservation Program Performance





Imported Water Committee

Update on WSDM and Water Shortage Emergency Condition

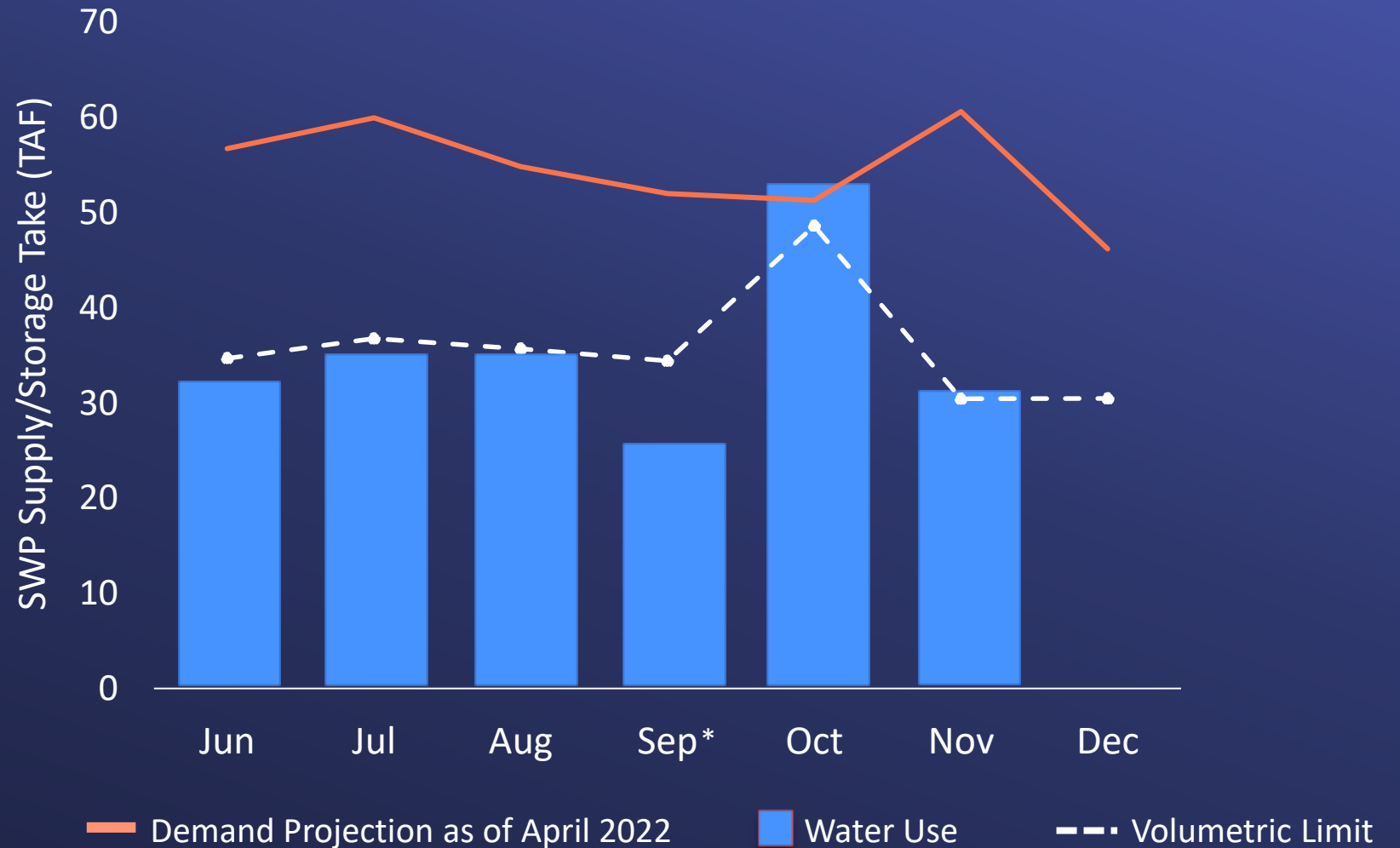
Item 6b

December 12, 2022

Emergency Water Conservation Program Update

Emergency Water Conservation Program

SWP Dependent Area Monthly Demands on Metropolitan



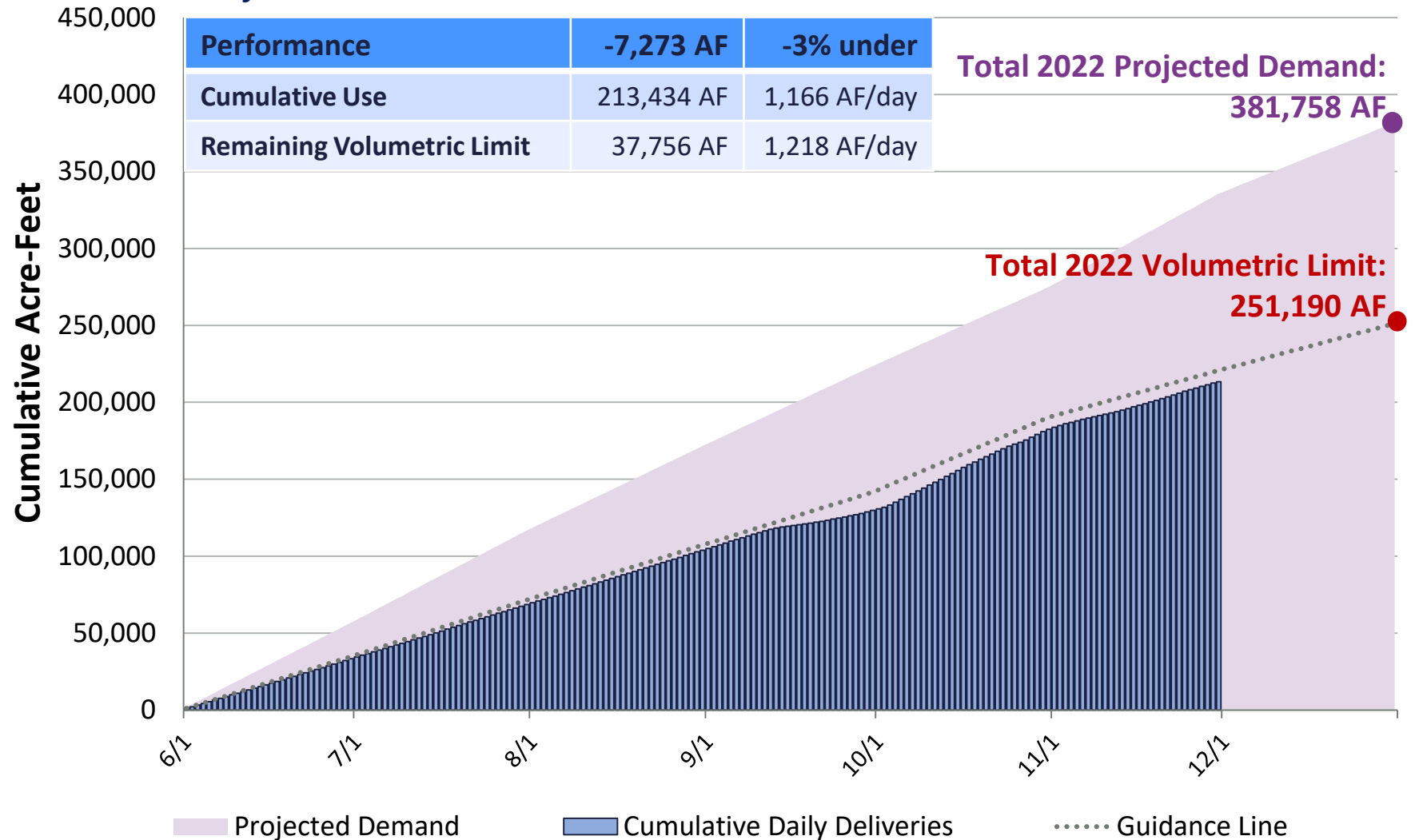
**Reduced demands in September stemmed from high turbidity in Castaic Lake and operational decisions by member agencies to reduce deliveries from Metropolitan*

All SWP Dependent Agencies Weekly Water Use Tracking

June to
December
2022

All SWP Dependent Agencies: June to December 2022

as of November 30

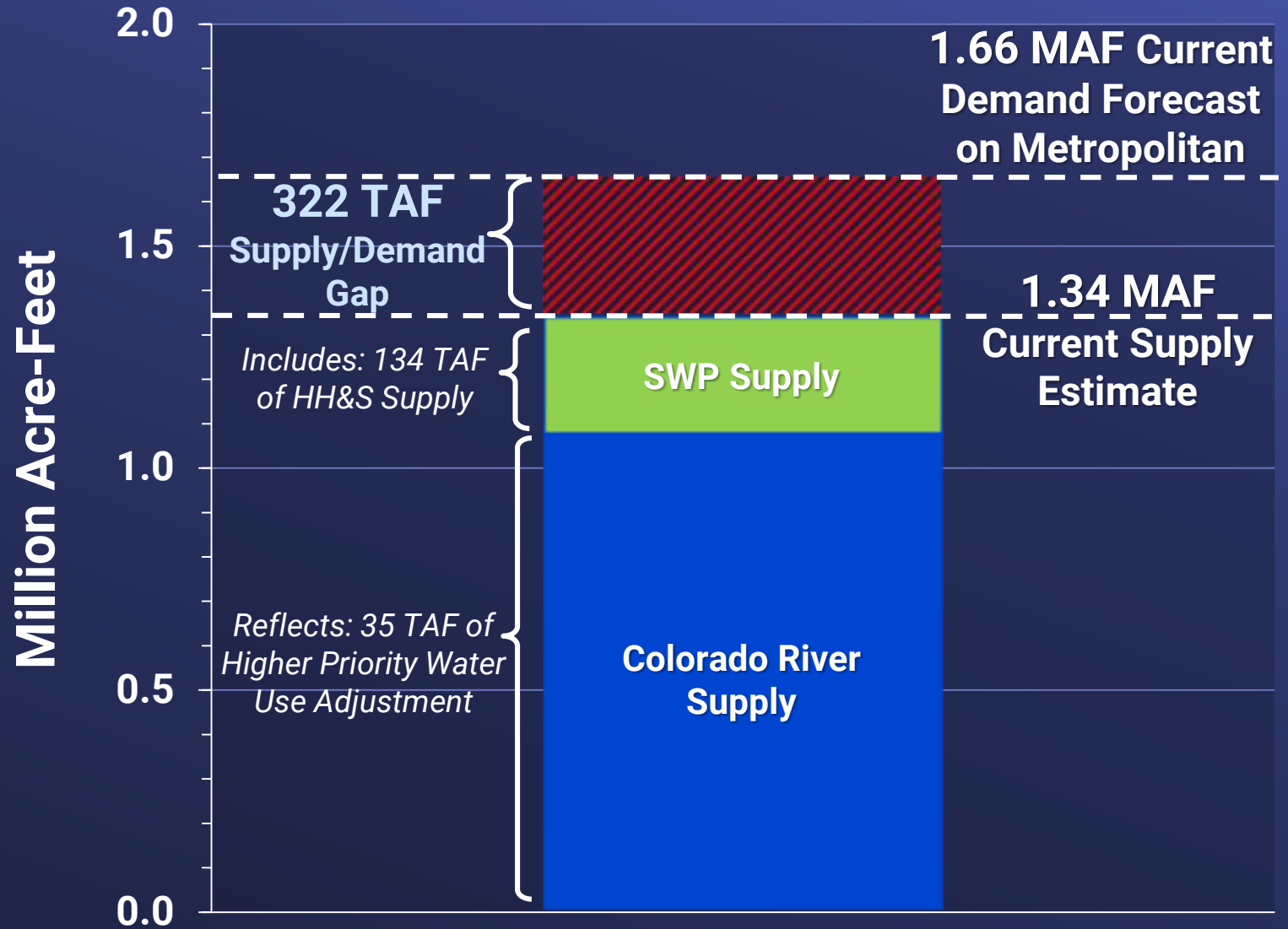


*Demand projection as of April 26, 2022

WSDM Update

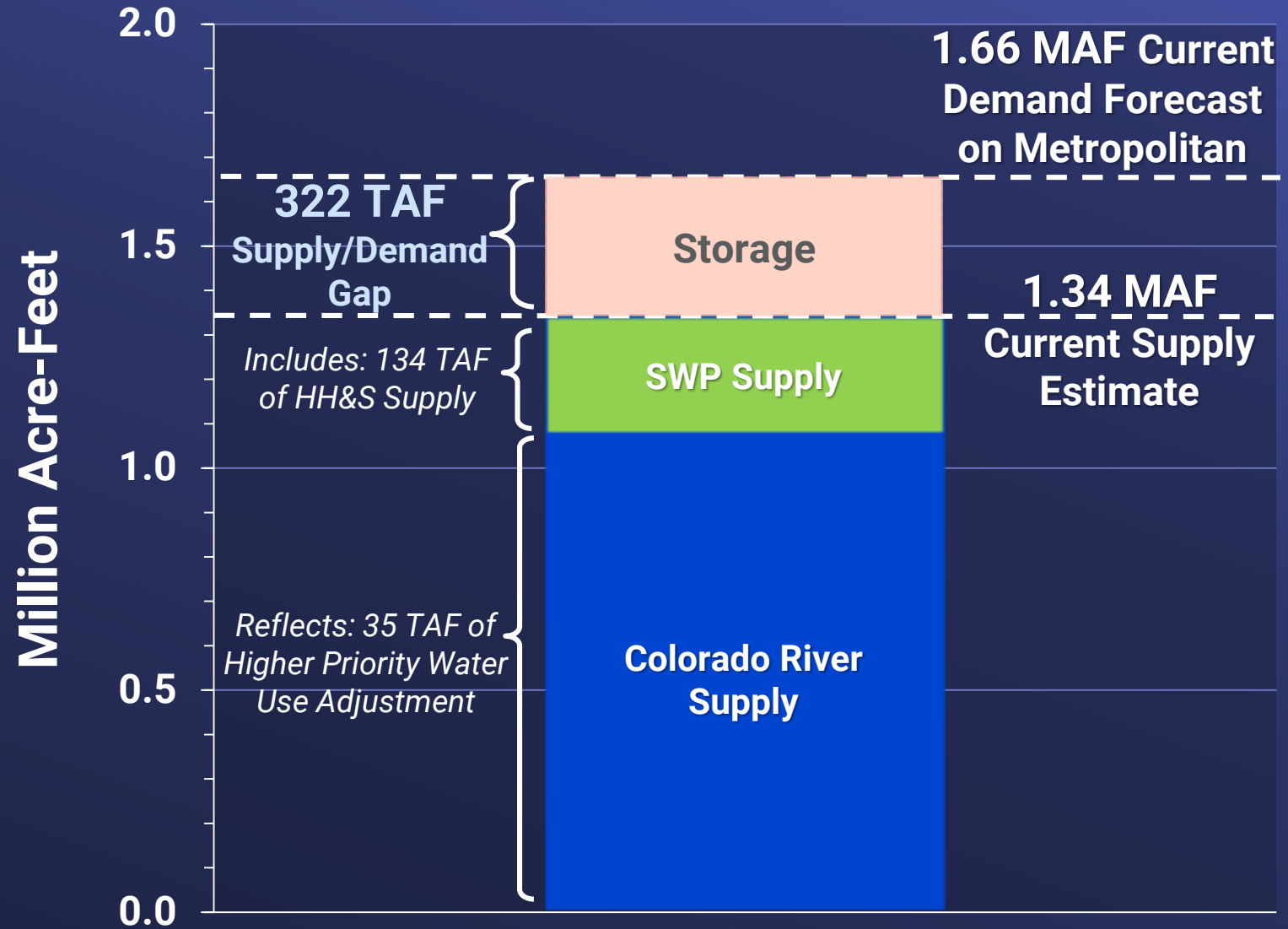
2022 WSDM Supply Demand Balance

Regional View



2022 WSDM Supply Demand Balance

Regional View



WSDM Update

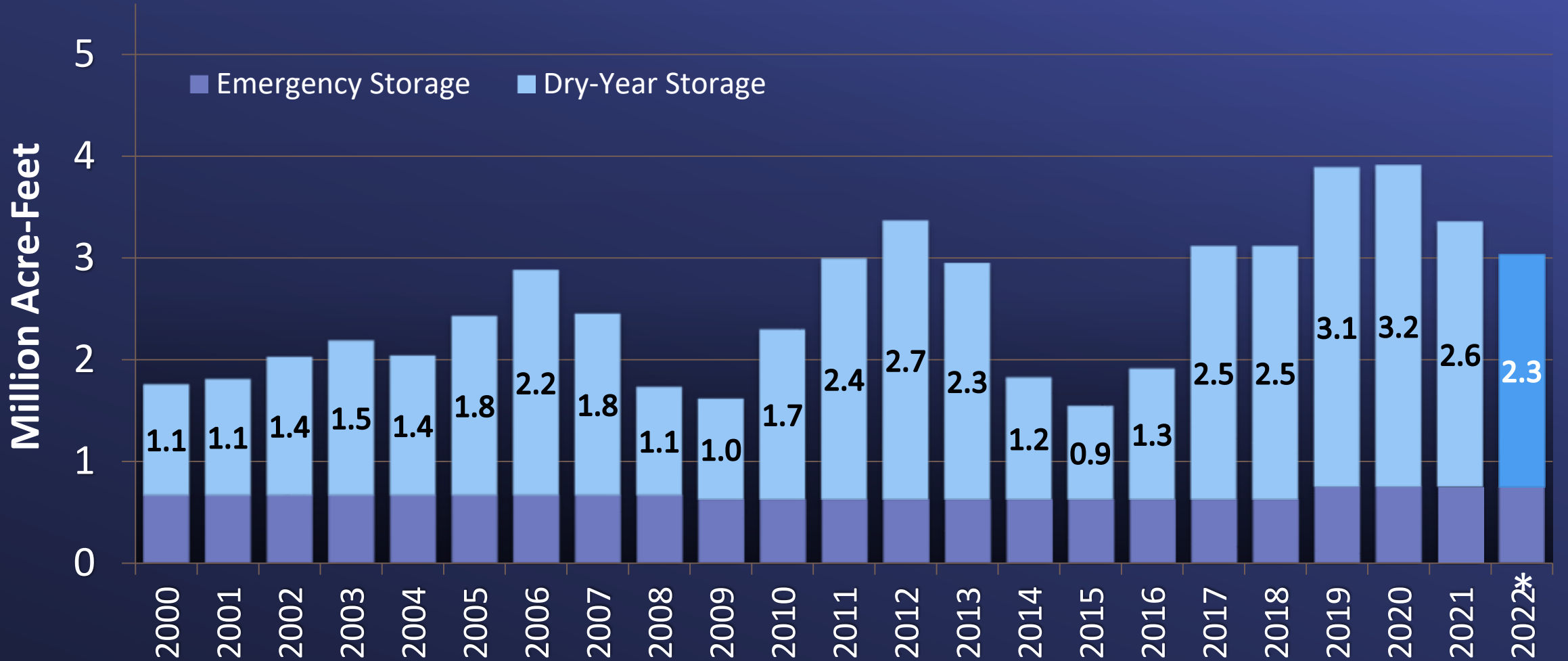
State Water Project:

2022 Human Health & Safety Water

- In 2022, Metropolitan accrued use of 134 TAF of Human Health & Safety (HH&S) water
 - Future Table A allocations of 40% or higher will require Metropolitan to return at least 96 TAF of HH&S water from a previous year
 - Water must be returned within five years
 - If any outstanding HH&S balances remain, DWR will deduct the amount of Table A water necessary to eliminate the HH&S balance

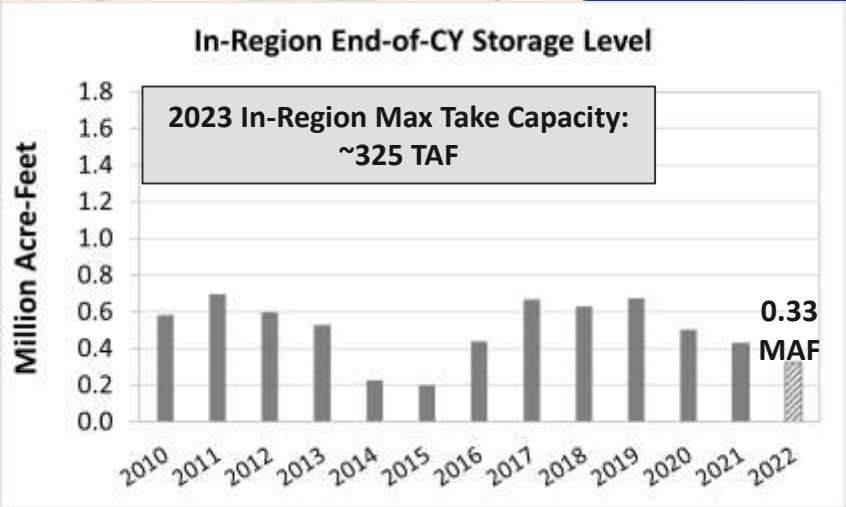
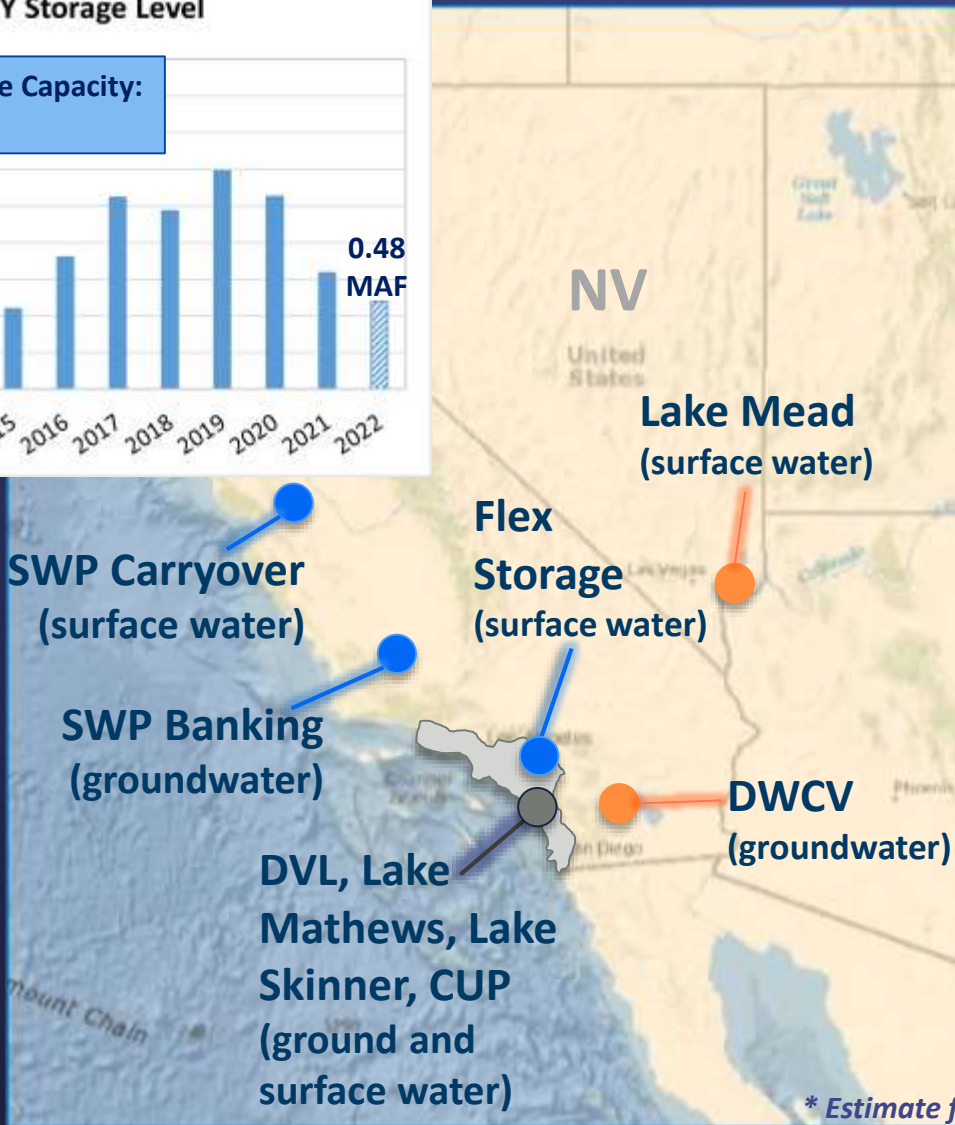
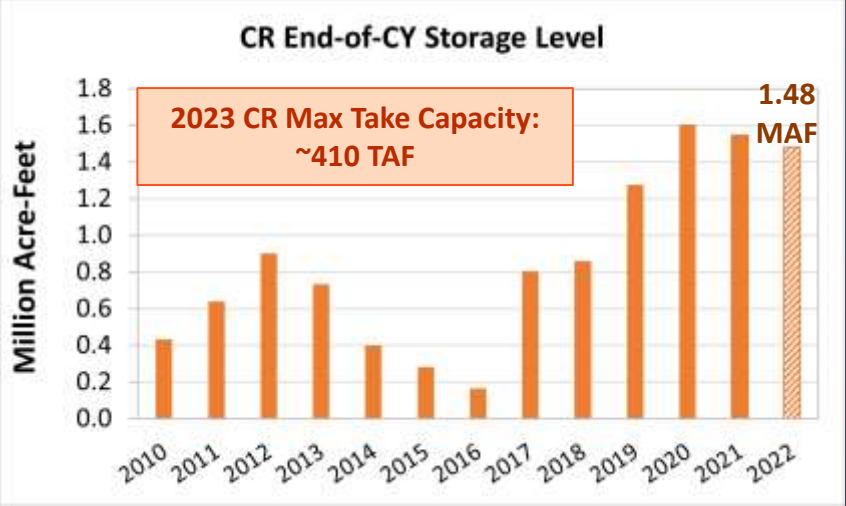
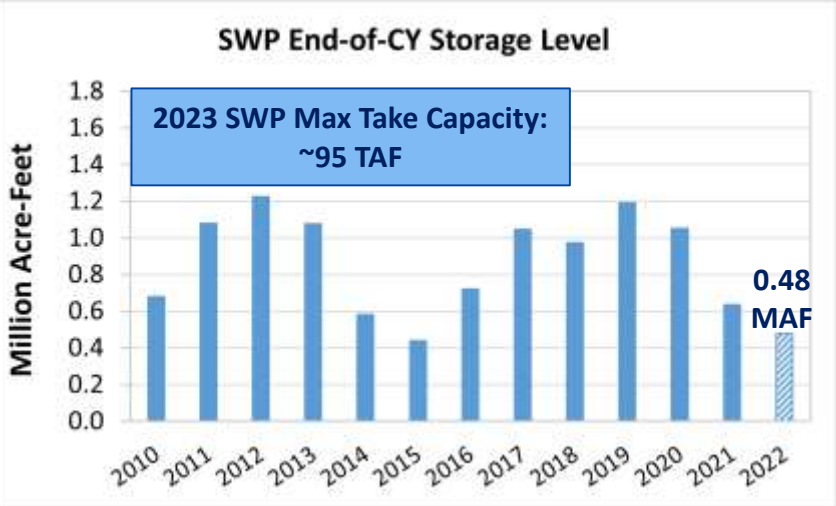
2022 Storage Projected to be 2.3 MAF

End of Year Balances



* Estimate – May change based on supply/demand conditions

End of Year Storage by Region



* Estimate for 2022. Does not include emergency storage.

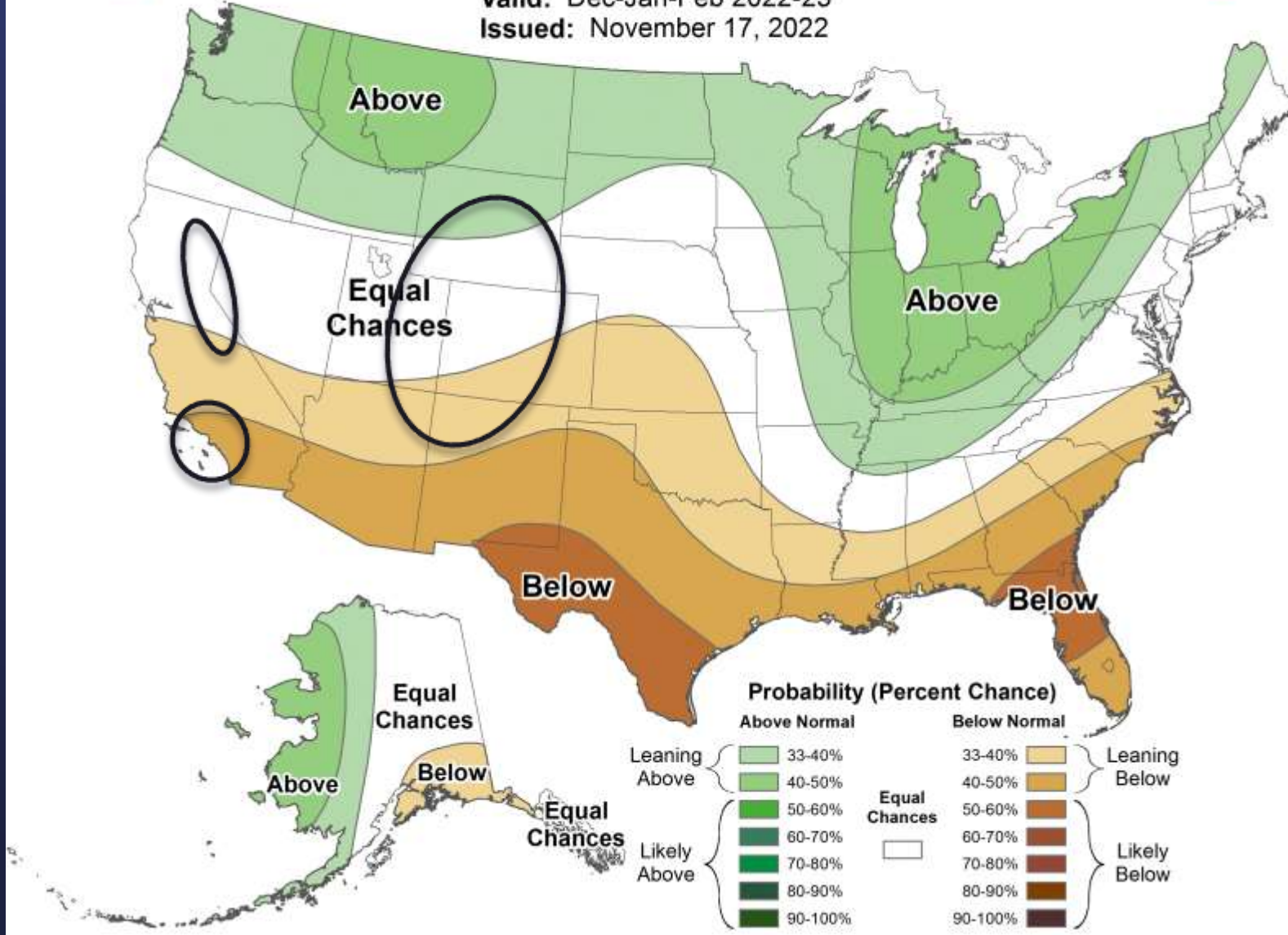
Hydrologic Conditions



Seasonal Precipitation Outlook



Valid: Dec-Jan-Feb 2022-23
Issued: November 17, 2022



3-Month Outlook

“Triple Dip” La Nina

What does it mean?

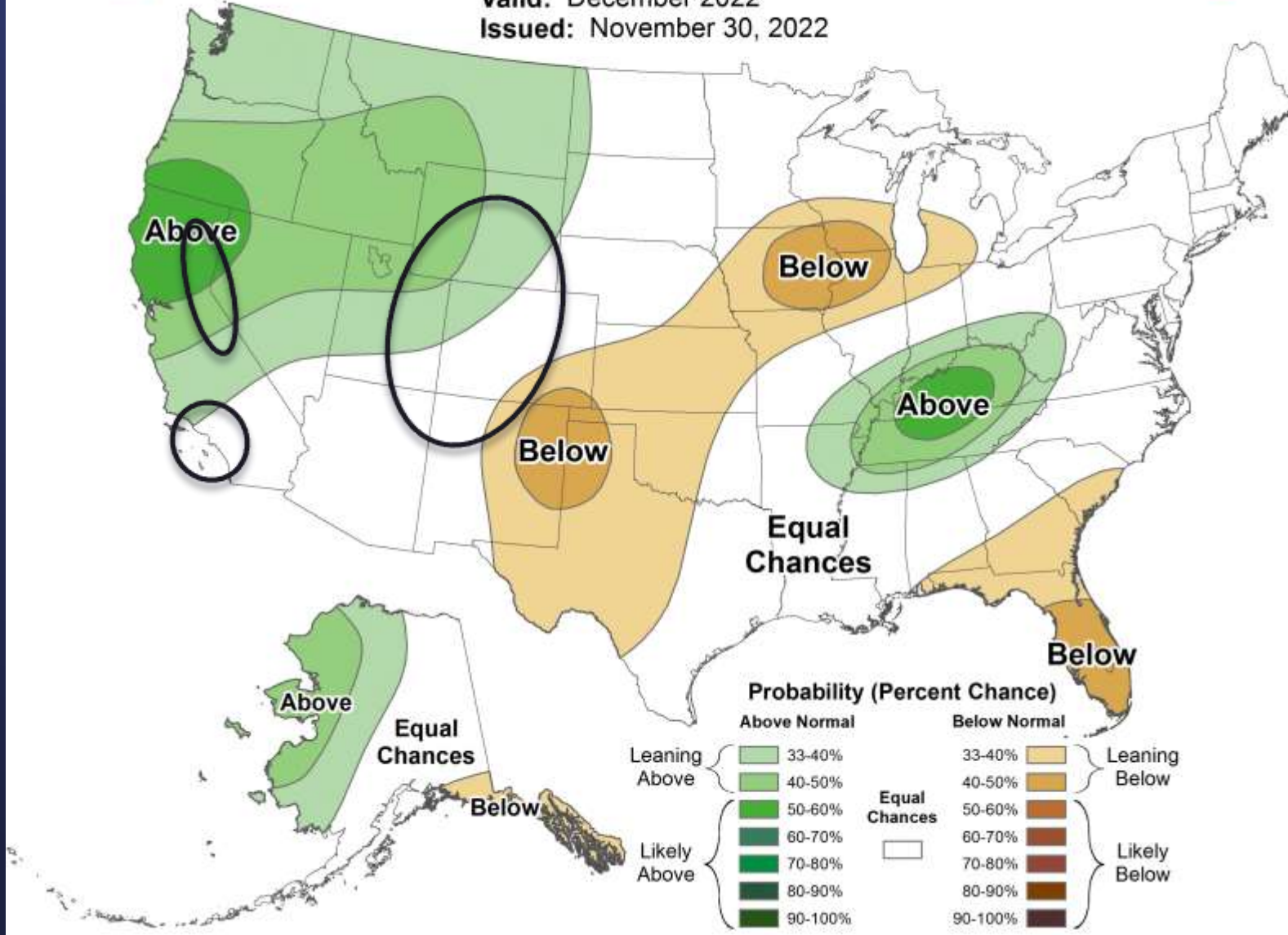


Monthly Precipitation Outlook



Valid: December 2022

Issued: November 30, 2022

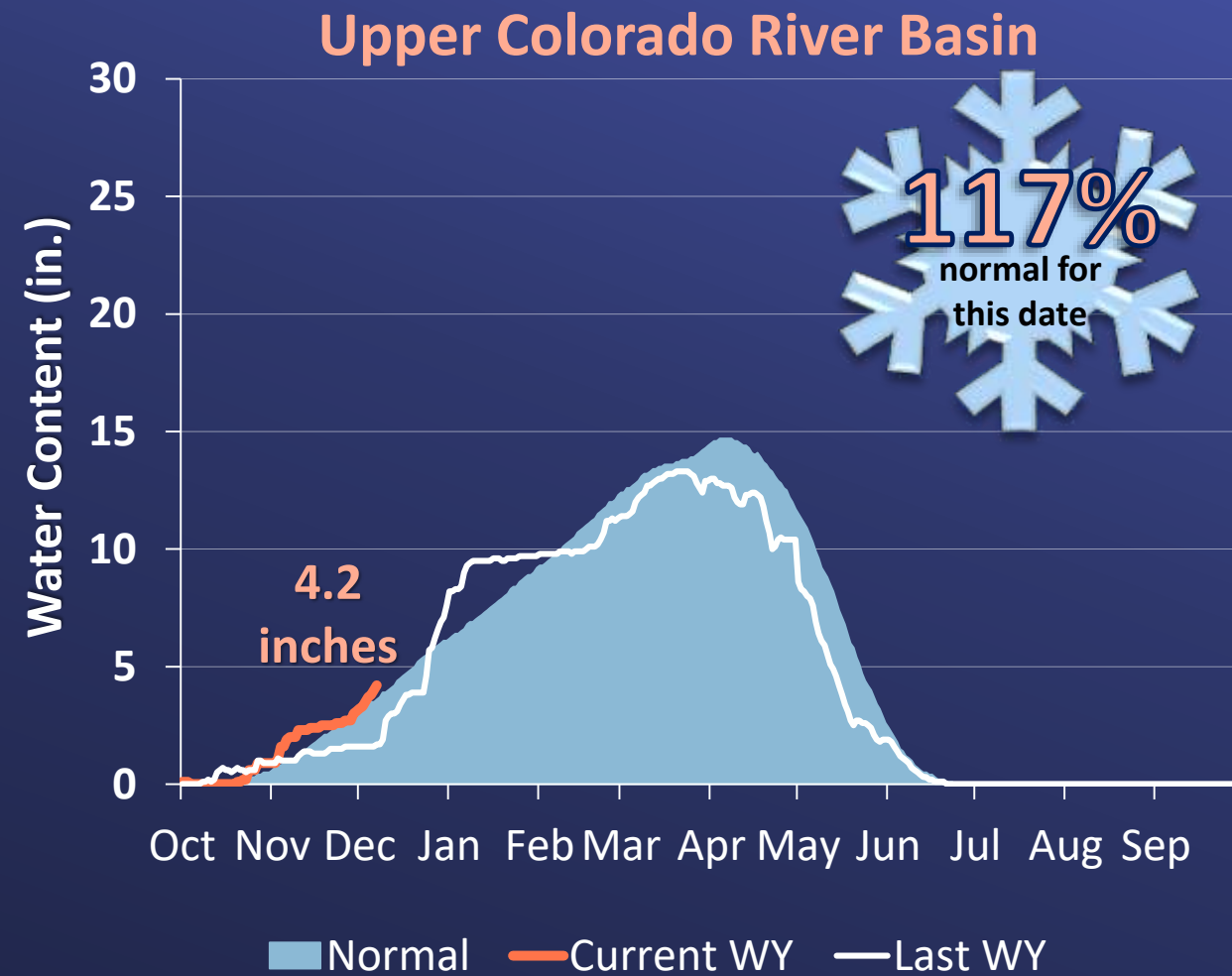
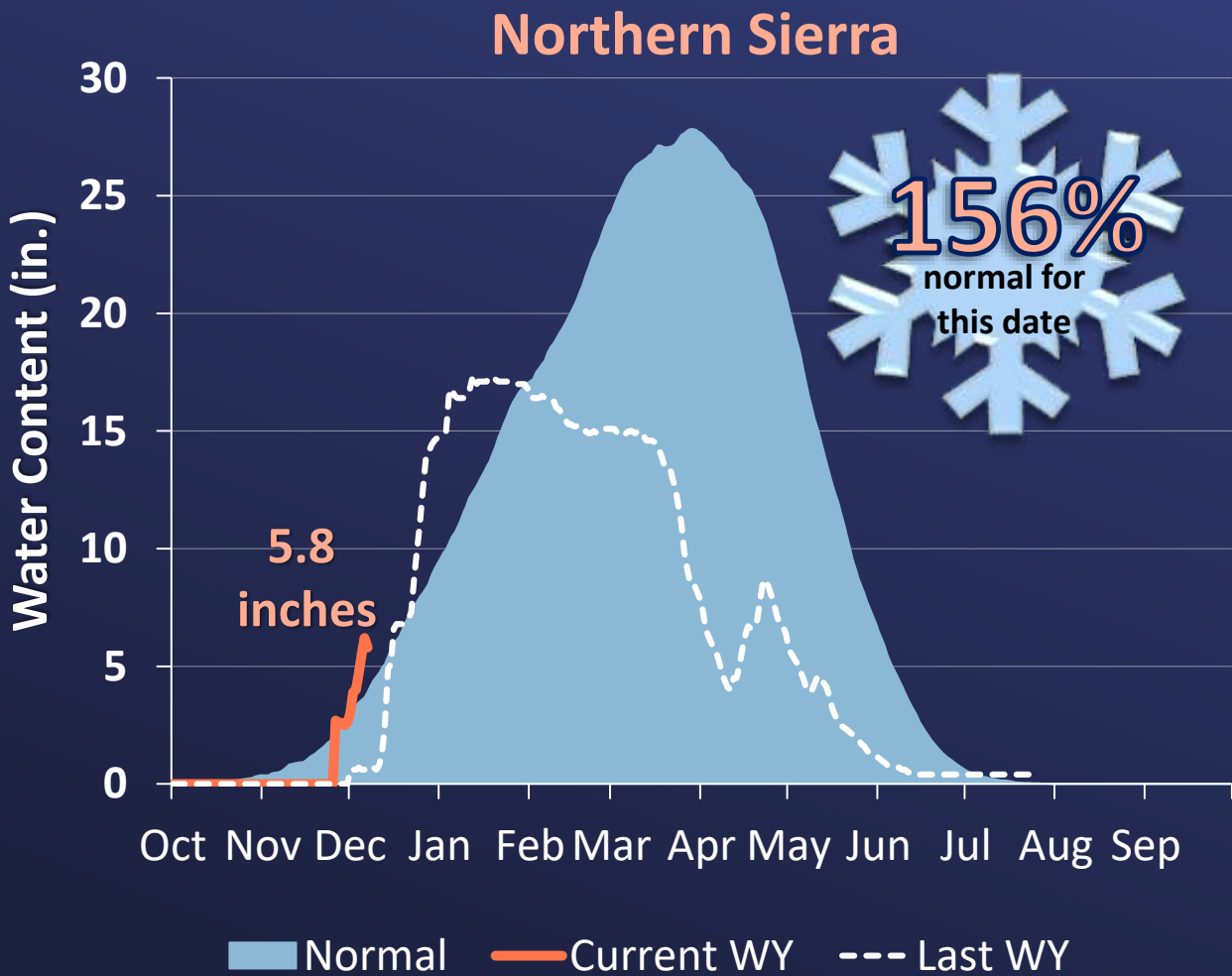


December Outlook

Above normal chances of precipitation in the Northern Sierra and portions of the Upper Colorado River Basin

Above Normal Snowpack in Both Imported Water Watersheds

As of 12/7/2022



WSDM Update

State Water Project: Initial 2023 Allocation

- 5% Initial 2023 Table A Allocation
 - Additional HH&S water provided
 - DWR may increase allocation if hydrologic conditions improve
- Metropolitan's combined Table A and HH&S supplies from DWR total ~291 TAF
 - Increases in SWP allocation offset HH&S allocations

Planning for Future Calendar Years

Planning for Future Years

Colorado River Uncertainty Due to Potential Obligations

- Expected supply impacts to Metropolitan as early as 2024 under the following:
 - 2007 Interim Guidelines
 - DCP Obligations
 - USBR Commissioner's call for 2-4 MAF of Conservation
 - California 400 TAF/year proposal
 - Supplemental EIS

Planning for Future Years

Range of Colorado Supplies Prior to Storage Withdrawals

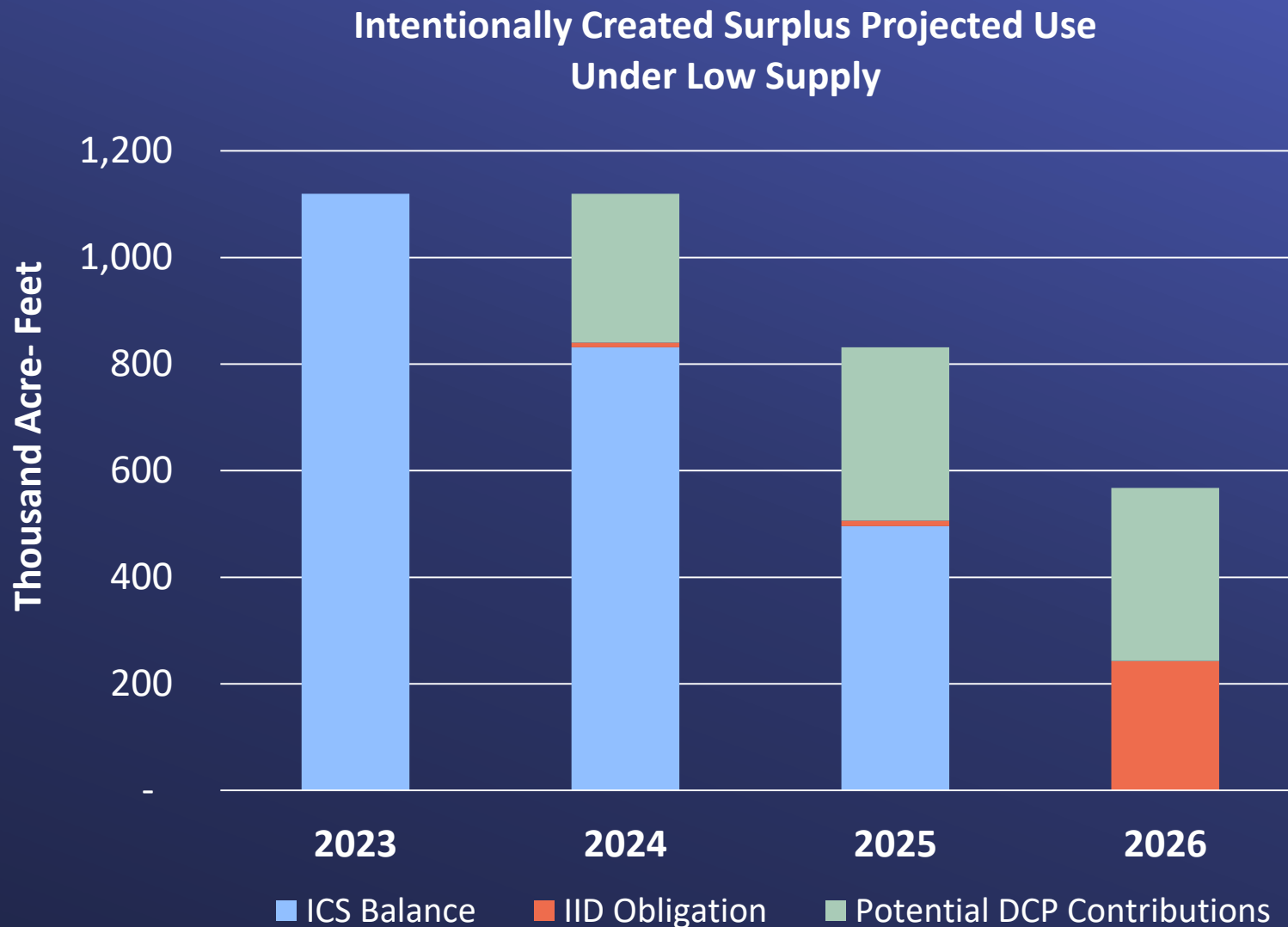
	Calendar Year Projections				
	2022 (TAF)	2023 (TAF)		2024 (TAF)	
Item		Low Supply	High Supply	Low Supply	High Supply
Priority 4	+550	+550	+550	+550	+550
Transfers and Exchanges	+500	+480	+480	+460	+460
Higher Priority Water Use	+35	-70	-25	-70	-25
DCP Contributions	0	0	0	-280	0
Total	1,085	960	1,005	660	985

**Values rounded to the nearest 5 TAF*

DCP contribution could be met through ICS to minimize potential future reductions in Colorado River diversions

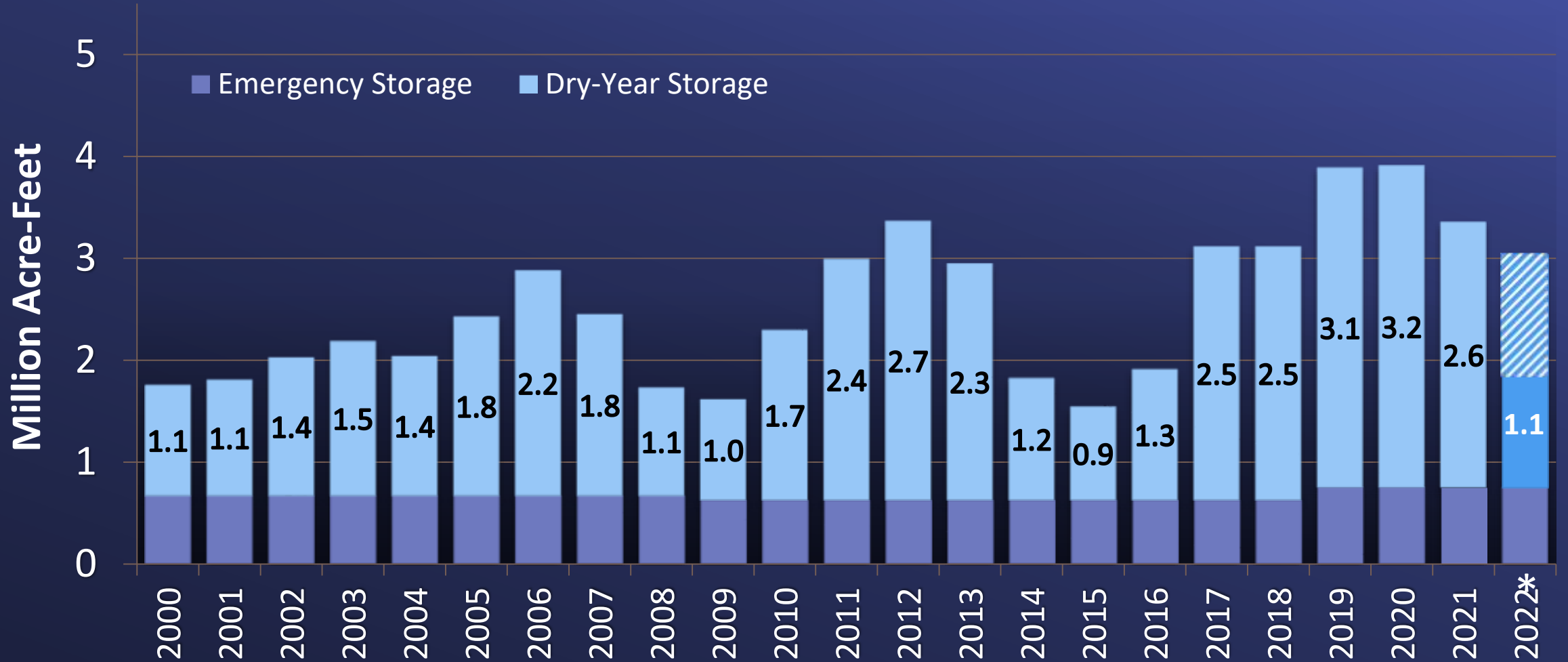
Planning for Future Years

ICS Supplies
May Be Needed
to Satisfy
Obligations



2022 Storage Projected to be 2.3 MAF

End of Year Balances



* Estimate – May change based on supply/demand conditions

Future Supply and Demand Gaps

	2023 (TAF)		2024 (TAF)	
Item	Low Supply/High Demand	High Supply/Low Demand	Low Supply/High Demand	High Supply/Low Demand
SWP	+300	+1,340	+300	+1,340
Colorado River	+960	+1,005	+660	+985
Demand on Metropolitan	-1,700	-1,400	-1,800	-1,200
Additional Obligations	-80	-220	-80	-260
Gap/Surplus	(-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.

Planning for Future Years

Managing a Range of Outcomes

- Maximizing capability of storage to manage surplus and shortage conditions
- Metropolitan will continue to protect existing supplies and to pursue supplemental supplies for the entire service area
 - Supporting development of new supplies
 - Pursuing new transfer supplies
 - Exploring exchange opportunities
 - Maximizing groundwater banking programs
 - Securing SWP HH&S supplies
 - Maximizing Colorado River groundwater storage withdrawals

Planning for Future Years

Key Takeaways

- Both imported water supplies are experiencing unprecedented challenges
- Uncertainty in hydrologic conditions and potential rules and obligations leads to a range of possible outcomes
- Metropolitan is preparing for a fourth year of drought and continues to pursue supplemental supplies and protect existing supplies
- Metropolitan is not planning for a full Colorado River Aqueduct for 2023 and beyond
 - Use of ICS to meet future DCP contributions alleviates potential reduction in future Colorado River diversions
- Discussions beginning for the implementation of a possible regionwide water supply allocation





• Colorado River Management Report

Summary

This report provides a summary of activities related to management of Metropolitan's Colorado River resources for the month of November 2022.

Purpose

Informational

Detailed Report

U.S. Bureau of Reclamation Notice of Intent to Prepare Supplemental Environmental Impact Statement

The U.S. Bureau of Reclamation (Reclamation) published a Notice of Intent (NOI) to prepare a Supplemental Environmental Impact Statement (SEIS) for the 2007 Interim Guidelines in the Federal Register on November 17, (87 FR 69042). Reclamation described the need for changes to operations of both Glen Canyon and Hoover Dams in 2023 and 2024 to address impacts of low runoff conditions that pose unacceptable risks to operations of those dams. Under the National Environmental Protection Act, revisions to the guidelines require a review of the environmental impacts of proposed changes.

The NOI indicated that revisions to the 2007 Interim Guidelines may include reduced annual releases from Glen Canyon Dam and changes to shortage provisions and volumes of water that will be available for consumptive use for Arizona, Nevada, and California. The SEIS will analyze modified and/or reduced annual releases from both the mid-elevation release tier and the lower elevation balancing tier. Specifically, Reclamation will analyze the impacts of making less than 7.0 maf releases from Glen Canyon Dam to protect elevation 3,490 feet at Lake Powell. The SEIS will also analyze reduced deliveries to Arizona, Nevada, and California in the shortage tiers. The 2007 Interim Guidelines do not currently define how shortages will be taken below Lake Mead elevation 1,025 feet.

Reclamation identified three primary alternatives that will be analyzed in the SEIS:

- The Framework Agreement Alternative: a consensus alternative that builds on the Colorado River Basin States, tribes and non-governmental organizations commitments made in the 2019 Drought Contingency Plan.
- The Reservoir Operation Alternative: Reclamation's alternative to mitigate risks to Colorado River System reservoirs if a consensus alternative isn't reached or is insufficient to protect dam infrastructure.
- The No Action Alternative.

Reclamation hosted two public webinars to summarize the content and purpose of this Federal Register notice and provided additional information about the SEIS. Public comments on scoping for the SEIS are due December 20, 2022. Metropolitan staff will participate in development of the alternatives and the SEIS process.

Metropolitan Partners with PVID, Bard to Submit Conservation Proposals

On November 21, Metropolitan, Palo Verde Irrigation District (PVID), and Bard Water District submitted joint proposals for funding under the Inflation Reduction Act. Under the proposals, the additional capacity available under the Metropolitan-PVID fallowing program and the capacity in the Bard seasonal fallowing program would be available for conserving additional water for Lake Mead. That additional fallowing would be funded by Reclamation under the Inflation Reduction Act. Metropolitan, as a landowner in PVID, would also fallow a portion of its land for the additional system conservation. These actions are part of California's efforts to conserve 400,000 acre-feet of water through 2026. Reclamation is evaluating all the proposals it receives, and if accepted, the proposals would be refined into agreements that would be taken to Metropolitan's Board for consideration, likely in early 2023.

Date of Report: 12/13/2022



● Bay-Delta Management Report

Summary

This report provides a summary of activities related to the Bay-Delta for November 2022.

Purpose

Informational

Detailed Report

Long-Term Delta Actions

Delta Conveyance

The California Department of Water Resources (DWR) released the public Draft Environmental Impact Report (EIR) under the California Environmental Quality Act for the Delta Conveyance Project on July 27, 2022. The Draft EIR describes project alternatives, potential environmental impacts, and identifies mitigation measures to help avoid or minimize potentially significant impacts. The public review and comment period for the Draft EIR was extended from October 27 to December 16, 2022.

The U.S. Army Corps of Engineers, as part of its permitting review under the Clean Water Act and Rivers and Harbors Act, is preparing an Environmental Impact Statement (EIS) to comply with the National Environmental Policy Act and is planning to release the draft EIS for public review later this year.

Joint Powers Authorities

During a Special Board of Directors meeting on November 17, the Delta Conveyance Design and Construction Authority Board of Directors approved to extend a resolution authorizing virtual Board and Committee meetings pursuant to AB 361.

At the regularly scheduled meeting of the Delta Conveyance Finance Authority (DCFA) on November 17, the DCFA approved a resolution to continue remote teleconference meetings and approved contracting with Brian G. Thomas Consulting, LLC for Executive Director services effective January 1, 2023, through December 31, 2023.

Sites Reservoir

At their November meetings, the Sites Project Authority Board and the Sites Reservoir Committee adopted the Final Guiding Principles and Preliminary Terms as supporting materials for the Water Infrastructure Finance Innovation Act (WIFIA) loan application. This document will serve as the foundation and guiding document for drafting the contract between the Sites Authority and participants, which needs to get underway in January 2023 to establish the contract by fall 2023, prior to initiation of Sites Reservoir Project financing. This guiding document is being used to inform the development of similar contracts for state and federal participation, although these contracts will be slightly different because of the unique nature of the enabling legislation associated with the state and federal funding. The document will also guide the basic mechanics for allocating benefits and costs, collecting payments, and remedying defaults through the contract which needs to be established before getting further into the WIFIA loan application process. The adoption of this document is not a commitment of any or all participants to any requirement in the final contract. Metropolitan will continue to have further opportunity to address concerns, including the translation of this final document into contract language.

Board Report (Bay-Delta Management Report)

Near-Term Delta Actions

Regulatory Activities

On October 7, 2022, the US Fish and Wildlife Service (USFWS) issued a proposed rule to list the San Francisco Bay-Delta distinct population segment of longfin smelt as an endangered species under the federal Endangered Species Act. Staff is reviewing the proposed rule and developing comments. Comments on the proposed rule are due on December 6, 2022. Staff is working with the State Water Contractors to prepare and provide comments.

Staff continued to participate in the collaborative groups called for in the 2019 Biological Opinions (BiOp) for the State Water Project (SWP) and Central Valley Project, and in the 2020 Incidental Take Permit (ITP) for long-term operation of the SWP, to address science needs and inform management and operation of the water projects. Staff is coordinating and conducting an expert elicitation regarding potential contaminant effects associated with management of the North Delta Foodweb Subsidy action. Contaminants have been identified as a critical unknown for conducting the action and the elicitation will provide a robust evaluation of predicted contaminant effects. The elicitation results will be considered in the implementation of the action under the BiOp/ITP.

Delta Island Activities

On November 15, the second public workshop for the Delta Island Adaptations Project was held in Walnut Grove. The purpose of this workshop was to receive public input on proposed land use changes for Bouldin Island. Public comments were received from about 60-65 participants that included various stakeholders, public agencies, non-governmental organizations, tribal community representatives, and other interested parties. This phase of the project is looking at landscape opportunities with the objectives to stop land subsidence, reduce greenhouse gas emissions, provide for sustainable agriculture, promote habitat restoration, and build collaboration for community science, agriculture, and ecoculture education through land use opportunities. The Project Team will assess the responses from the public over the next several weeks, including the preferences provided through exit surveys and documented input from the breakout exercise. Future reports will inform the Board on input received and progress of the effort.

Science Activities

Staff worked with researchers from UC Davis to initiate the Delta Smelt Pilot Propagation study. The study uses the impoundments on Metropolitan's Delta Island properties to evaluate their use to aid the state and federal agencies efforts to propagate hatchery Delta smelt in the wild. This initial study is one of several planned that is being conducted with the support of DWR, California Department of Fish and Wildlife, USFWS and local stakeholders.

Staff continued participating in the Collaborative Science and Adaptive Management Program, including participation on the Collaborative Adaptive Management Team (CAMT). In November, staff participated in the review of the recently published Delta smelt Fall Occupancy Study written by Dr. Noble Hendrix and co-authors. The manuscript is a product of CAMT's efforts to evaluate one of the priority areas of uncertainty regarding the effect of flow in the fall on the distribution of Delta smelt. The results of the study suggest that salinity at a regional level is a better predictor of the distribution than the historic use of Fall X2. In addition, the results found that water clarity may be affecting the survey data due to Delta smelt being able to detect and avoid the survey gear under clearer conditions. The study results suggest that further scrutiny needs to be given to the use of Fall X2 and turbidity to determine and manage the distribution of Delta smelt.

Staff gave a presentation on the Reorienting to Salmonid Recovery project to the Imported Water Committee in November that included a review of the project goals and progress to date. Staff is working with the Project Planning team to plan a series of workshops in December 2022 to discuss how to translate social, economic, and cultural values related to salmonids into metrics that can be quantified to help identify recovery scenarios that best meet all values.

Staff attended the Delta Science Program workshop on Delta Harmful Algal Blooms (HAB). The workshop included presentations and discussion sessions on current HAB monitoring activities. It was identified that the

Board Report (Bay-Delta Management Report)

lack of consistent monitoring is a significant hurdle to addressing HAB management and public health concerns. The goal of the workshop is to inform the development of a Delta region specific HAB monitoring strategy.