



Arizona Lower Basin Drought Contingency Plan Steering Committee Meeting #3 August 23, 2018

Presentation Materials Available at:
ADWR's website – new.azwater.gov/lbdcp
CAWCD's website – www.cap-az.com/AZDCP

Arizona LBDPC Steering Committee Meeting #3 Agenda

- Welcome, Introductions, and Recap from Meeting #2
- Review of August 24 Month Study Results and Risks of Shortage
- Report from the CAP Ag Settlement Pool Mitigation Work Group – Meetings #1 & 2
- Review of Existing ICS Framework
- Overview of Tribal ICS Conceptual Framework
- Next Steps for Tribal ICS
- Delegates' Comments
- Preparation for Steering Committee Meeting #4
- Call to the Public

Recap from Meeting #2

- The delegates received a presentation on:
 - The role of CAP Agriculture in the CAP System
 - Summary of CAP water deliveries to provide context for Ag Pool
 - CAP Ag Settlement Pool Mitigation concepts
- The delegates supported the creation of CAP Ag Mitigation Work Group, and delegates volunteered to participate in the 2 meetings scheduled for the Work Group

Steering Committee Draft Schedule

- Six remaining Steering Committee Meetings:
 - September 13th Burton Barr Library,¹ 1:00 to 4:00 pm
 - September 27th CAP,² 1:00 to 4:00 pm
 - October 10th Burton Barr Library, 1:00 to 4:00 pm
 - October 25th CAP, 1:00 to 4:00 pm
 - November 8th [Location TBD], 1:00 to 4:00 pm
 - November 29th CAP, 1:00 to 4:00 pm

¹ 1221 N. Central

² 23636 N. 7th Street




August 24 Month Study Results

RECLAMATION
Managing Water in the West

**Review of August 24-Month Study
Results and Risks of Shortage**

Steven Hvinden
Chief, Boulder Canyon Operations Office

Arizona DCP Steering Committee Meeting
August 23, 2018

 U.S. Department of the Interior
Bureau of Reclamation

Lake Powell & Lake Mead Operational Table

Operational Tiers for Water Year/Calendar Year 2019¹

Lake Powell			Lake Mead		
Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) ¹	Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) ¹
3,700	Equalization Tier Equalize, avoid spills or release 8.23 maf	24.3	1,220	Flood Control Surplus or Quantified Surplus Condition Deliver > 7.5 maf	25.9
3,636 - 3,666 (2008-2026)		15.5 - 19.3 (2008-2026)	1,200 (approx.) ²		22.9 (approx.) ²
	3,586.55 ft Upper Elevation Balancing Tier³ Release 8.23 maf;			Domestic Surplus or ICS Surplus Condition Deliver > 7.5 maf	
3,575	Jan 1, 2019 Projection if Lake Mead < 1,075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	9.5	1,145		15.9
			1,105	Normal or ICS Surplus Condition Deliver ≥ 7.5 maf	11.9
				1,079.50 ft	
			1,075	Jan 1, 2019 Projection	9.4
	Mid-Elevation Release Tier Release 7.48 maf; if Lake Mead < 1,025 feet, release 8.23 maf	5.9		Shortage Condition Deliver 7.167 ⁴ maf	7.5
3,525			1,050		
				Shortage Condition Deliver 7.083 ⁵ maf	5.8
3,490	Lower Elevation Balancing Tier Balance contents with a min/max release of 7.0 and 9.5 maf	4.0	1,025		
			1,000	Shortage Condition Deliver 7.0 ⁶ maf Further measures may be undertaken ⁷	4.3
3,370		0	895		0

Diagram not to scale

¹ Acronym for million acre-feet

² This elevation is shown as approximate as it is determined each year by considering several factors including Lake Powell and Lake Mead storage, projected Upper Basin and Lower Basin demands, and an assumed inflow.

³ Subject to April adjustments which may result in a release according to the Equalization Tier

⁴ Of which 2.48 maf is apportioned to Arizona, 4.4 maf to California, and 0.287 maf to Nevada

⁵ Of which 2.40 maf is apportioned to Arizona, 4.4 maf to California, and 0.283 maf to Nevada

⁶ Of which 2.32 maf is apportioned to Arizona, 4.4 maf to California, and 0.280 maf to Nevada

⁷ Whenever Lake Mead is below elevation 1,025 feet, the Secretary shall consider whether hydrologic conditions together with anticipated deliveries to the Lower Division States and Mexico is likely to cause the elevation at Lake Mead to fall below 1,000 feet. Such consideration, in consultation with the Basin States, may result in the undertaking of further measures, consistent with applicable Federal law.

¹ Lake Powell and Lake Mead operational tier determinations were based on August 2018 24-Month Study projections and will be documented in the 2019 AOP.

RECLAMATION

Lake Powell Elevations*

End of CY 2018 Projection

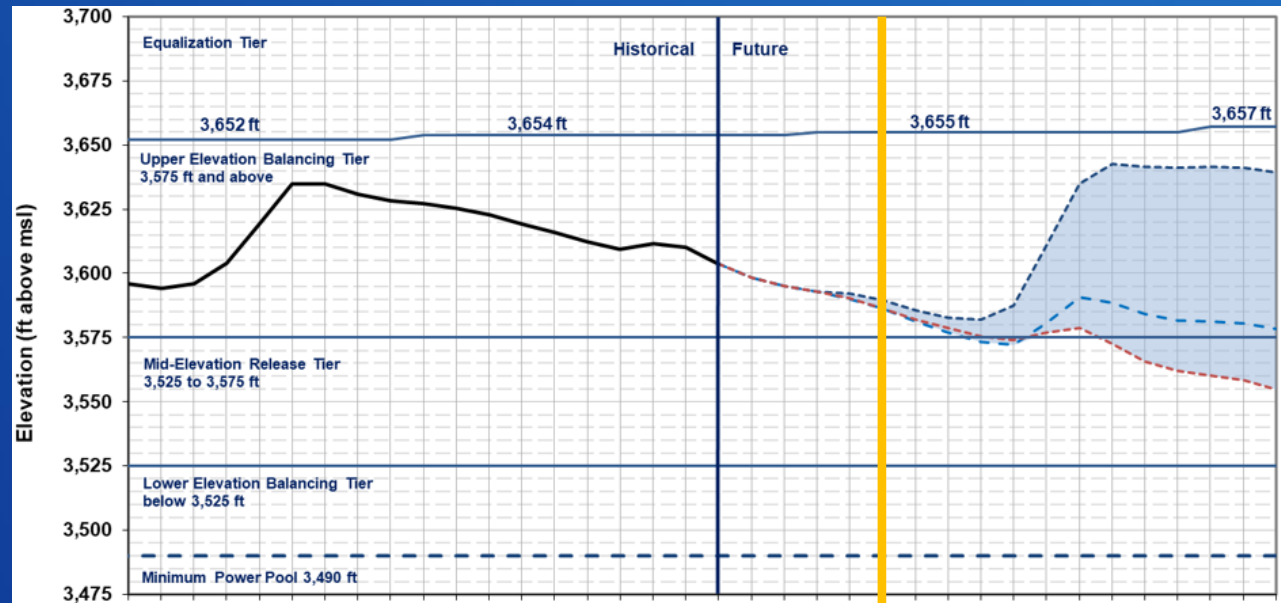
Most Probable: 3,586.6 feet (43% full)

End of CY 2019 Projections

Most Probable: 3,578.3 feet (40% full)

Prob Maximum: 3,639 feet (65% full)

Prob Minimum: 3,555 feet (33% full)



Lake Mead Elevations*

End of CY 2018 Projection

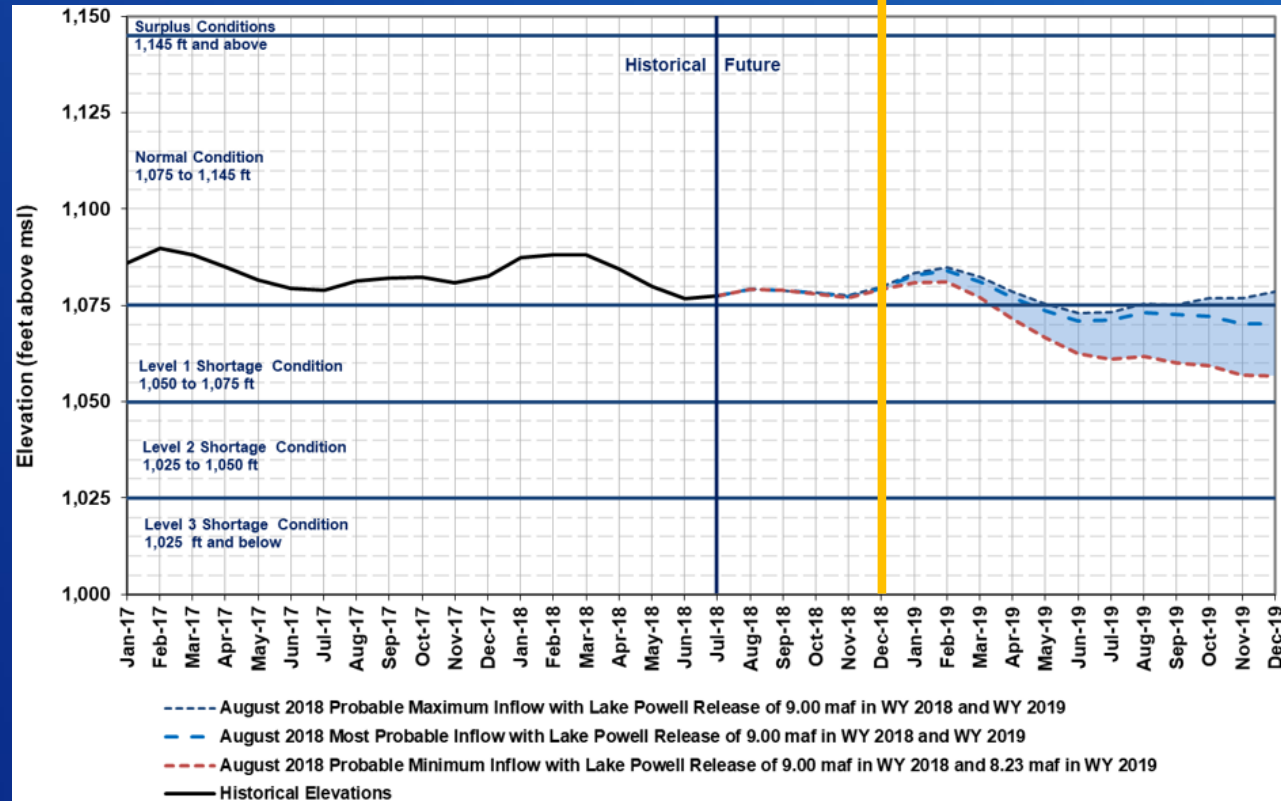
Most Probable: 1,079.5 feet (38% full)

End of CY 2019 Projections

Most Probable: 1,070.4 feet (35% full)

Prob Maximum: 1,079 feet (38% full)

Prob Minimum: 1,057 feet (31% full)



***Projections from
August 2018 24-Month Study
Inflow Scenarios**

Overview of August 2018 Probabilistic Modeling Approach

1. Initialize the Colorado River Simulation System (CRSS) with the end-of-December 2018 reservoir conditions as projected by the August 2018 Most Probable 24-Month Study
2. Simulate reservoir conditions using 110 hydrologic inflow sequences from the full 110-year observed natural flow record (1906 through 2015)
3. Lake Powell and Lake Mead operations are consistent with the 2007 Interim Guidelines – no DCP operations were simulated
4. Compute probabilities across 110 future traces

Percent of Traces with Event or System Condition

Results from August 2018 CRSS^{1,2,3,4,5} (values in percent)

	Event or System Condition	2019	2020	2021	2022	2023
Upper Basin – Lake Powell	Equalization Tier	N	11	16	19	23
	<i>Equalization – annual release > 8.23 maf</i>	0	11	16	19	21
	<i>Equalization – annual release = 8.23 maf</i>	0	0	0	0	2
	Upper Elevation Balancing Tier	100	49	52	51	44
	<i>Upper Elevation Balancing – annual release > 8.23 maf</i>	75	43	43	43	33
	<i>Upper Elevation Balancing – annual release = 8.23 maf</i>	25	5	9	8	10
	<i>Upper Elevation Balancing – annual release < 8.23 maf</i>	0	1	0	0	1
	Mid-Elevation Release Tier	0	40	22	16	19
	<i>Mid-Elevation Release – annual release = 8.23 maf</i>	0	0	0	1	3
	<i>Mid-Elevation Release – annual release = 7.48 maf</i>	0	40	22	15	16
	Lower Elevation Balancing Tier	0	0	10	14	15
Lower Basin – Lake Mead	Shortage Condition – any amount (Mead ≤ 1,075 ft)	0	57	68	70	65
	<i>Shortage – 1st level (Mead ≤ 1,075 and ≥ 1,050)</i>	0	57	42	40	28
	<i>Shortage – 2nd level (Mead < 1,050 and ≥ 1,025)</i>	0	0	26	23	24
	<i>Shortage – 3rd level (Mead < 1,025)</i>	0	0	0	7	14
	Surplus Condition – any amount (Mead ≥ 1,145 ft)	0	0	3	5	7
	<i>Surplus – Flood Control</i>	0	0	0	1	2
	Normal or ICS Surplus Condition	100	43	29	25	27

¹ Reservoir initial conditions based on December 31, 2018 conditions as projected by the August 2018 24-Month Study Most Probable run.

² Percentages computed from 110 hydrologic inflow sequences based on resampling of the observed natural flow record from 1906-2015 for a total of 110 traces analyzed.

³ Percentages shown may not sum to 100% due to rounding to the nearest percent.

⁴ Percentages shown may not be representative of the full range of future possibilities that could occur with different modeling assumptions.

⁵ The chance of a mid-year adjustment to equalization is negligible in water year 2019.

RECLAMATION

Report from CAP Ag Settlement Pool Mitigation Work Group Meeting #1 & 2

- The Work Group met on August 15th and 21st. The group has identified and discussed multiple mitigation tools including
 - CAP water in Lake Pleasant
 - CAP ICS in Lake Mead
 - Voluntary reductions of high-priority water with a genuine history of use as contribution to shortage reductions
 - Redirection of underground storage from USFs to GSFs and increased storage in Pinal GSFs
 - Imported groundwater
 - Short-term leasing of high priority water
 - Compensation for fallowed lands
 - Resources for infrastructure for local groundwater (potential grants from USDA)
- Additional discussions are needed to begin to develop a package of resources – water and financial, for potential mitigation
- **Next Meeting September 5th at 1:00pm**

Review of Intentionally Created Surplus (ICS)

- Established in '07 Guidelines to create incentives for temporary storage of conserved water in Lake Mead:
 - Created by Colorado River Contractors through VERIFIED Reductions in EXISTING Beneficial Use of Colorado River Water
 - Conserved water stored in Lake Mead for later release and use
 - Requires an approved “Exhibit” describing the conservation project,
 - Requires ICS Delivery Agreement with Reclamation
 - Requires interstate forbearance by Lower Basin parties (Section V Contractors in CA and NV, and in Arizona, ADWR)
 - There is an MOU between ADWR and CAWCD to implement forbearance within Arizona

Review of Intentionally Created Surplus

- '07 Guidelines impose limits on annual ICS creation and annual ICS delivery, and establish a maximum ICS accumulation limit. The limits for Arizona contractors are:
 - Annual creation of up to 100 kaf
 - Annual delivery of up to 300 kaf, and
 - Total accumulation not to exceed 300 kaf
- LBDCP increases the maximum ICS accumulation limit for Arizona to 500 kaf, annual creation and delivery limits remain the same
- Capacities are available on “first come, first serve” basis
 - CAWCD is the only entity to create ICS in Arizona to date

Review of Intentionally Created Surplus

- Limitations on Release of ICS
 - ‘07 Guidelines: No release/recovery of ICS when system is in shortage, i.e., Lake Mead below elevation 1075’
 - LBDGP: Release/recovery of ICS authorized when Lake Mead above elevation 1025’

Tribal ICS Conceptual Framework

- Tribal participation in ICS, by CAP Settlement Tribes and On-River Tribes, has been identified as an essential element to implement LBDCP in Arizona
- ICS is a potential tool to mitigate the impacts of LBDCP on CAP users
- An effective Tribal ICS program requires coordination and harmony through multiple layers of contracts, policies, procedures, the '07 Guidelines and LBDCP
- Tribal ICS may work with or without LBDCP. The current conceptual framework assumes LBDCP is implemented
 - The framework may need to be modified if LBDCP is not in place

Tribal ICS Conceptual Framework

- Two agreements are needed:
 - Framework Agreement for Arizona ICS Program
 - Secretary of the Interior
 - ADWR
 - CAWCD
 - Tribal ICS Delivery/Implementation Agreements
 - Secretary of the Interior
 - Each individual Tribal Contractor

Tribal ICS Conceptual Framework

- Framework Agreement for Arizona ICS Program:
 - Parties: The Secretary of the Interior, ADWR and CAWCD due to the unique and complementary roles each plays in the ICS framework in Arizona
 - Term: consistent with '07 Guidelines and LBDCP (through 2026 operations)
 - Cooperation on approval and annual implementation of Tribal ICS projects including exhibits
 - Harmonize delivery contracts to support Tribal ICS
 - Allocation of ICS capacities among Tribal and non-Tribal participants in Arizona:
 - Annual creation
 - Accumulation
 - Annual delivery
 - Pathway for non-Tribal, On-River Contractors to participate
 - Framework to enable creation and delivery of ICS in Arizona

Tribal ICS Conceptual Framework

- Tribal ICS Delivery/Implementation Agreements
 - Between the Secretary of the Interior and Tribal participants to implement individual Tribal ICS programs
 - Each tribal participant would have individual Delivery Agreement governing ordering and delivery of ICS
 - Each tribal participant would have an individual ICS account in Lake Mead

Proposed Next Steps for Tribal ICS

- Convene a Work Group
- Delegates that have expressed interest or participated in earlier discussions: ADWR, BOR, CAWCD, Gila River Indian Community, Arizona Legislature, Tohono O'odham Nation, Colorado River Indian Tribes
- Initial Ground Rule – not public meetings but a commitment to report proceedings to the Steering Committee, in open session including opportunity for public comment
- Scope - review of Tribal ICS framework concept, and identify an approach to discuss with the Steering Committee
- Initial meeting dates: **Meeting #1 August 31 at 9:00 am at CAWCD, Meeting #2, September 10th at 1:00 pm (location tbd)**
- Report on progress to the Steering Committee on September 13th

Next Steps

- Next meeting – **September 13th** (Burton Barr Library 1221 Central Av. 1 – 4 pm)
- CAP Ag Settlement Pool Mitigation Work Group meetings (**Meeting #3 September 5th at 1:00pm**)
- Tribal ICS Work Group meetings (**Meeting #1 August 31st at 9:00 am at CAWCD, Meeting #2, September 10th at 1:00 pm** (location tbd))
- Update on draft LBDGP documents
- At the next meeting we hope to:
 - Progress report on CAP Ag Settlement Pool Mitigation from the Work Group
 - Progress report on Tribal ICS from the Work Group
 - Frame Excess Water Discussion for the September 27th meeting

CALL TO THE PUBLIC



With additional questions contact:

ADWR at sslee@azwater.gov

CAWCD at cthompson@cap-az.com

Presentation Materials Available at:

ADWR's website – new.azwater.gov/lbdcap

CAWCD's website – www.cap-az.com/AZDCP