Arizona Water: The Drought Contingency Plan
Southern Arizona Water Users Association
October 5, 2018

Presentation Materials Available at:

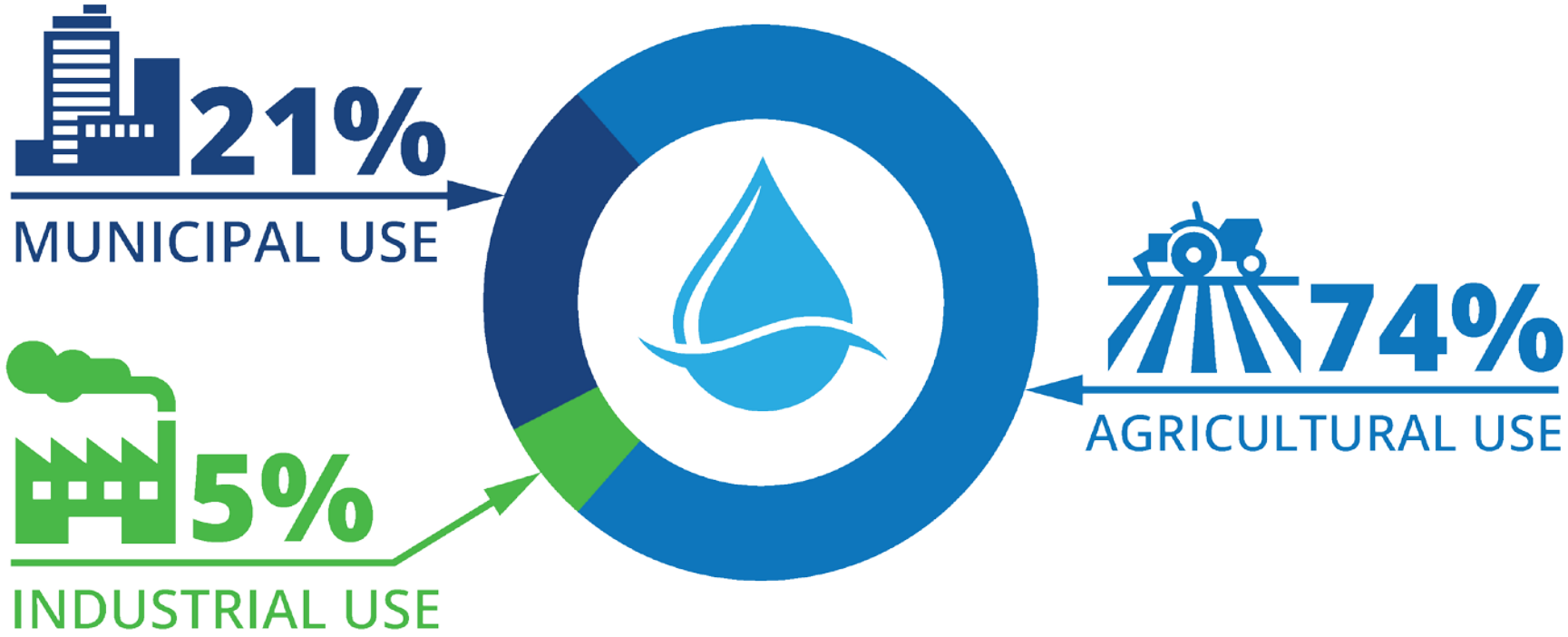
ADWR's website – new.azwater.gov/lbdcp

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

Arizona Water Use By Source (2016)

Source: ADWR, 2017

Water Use By Sector (2016)



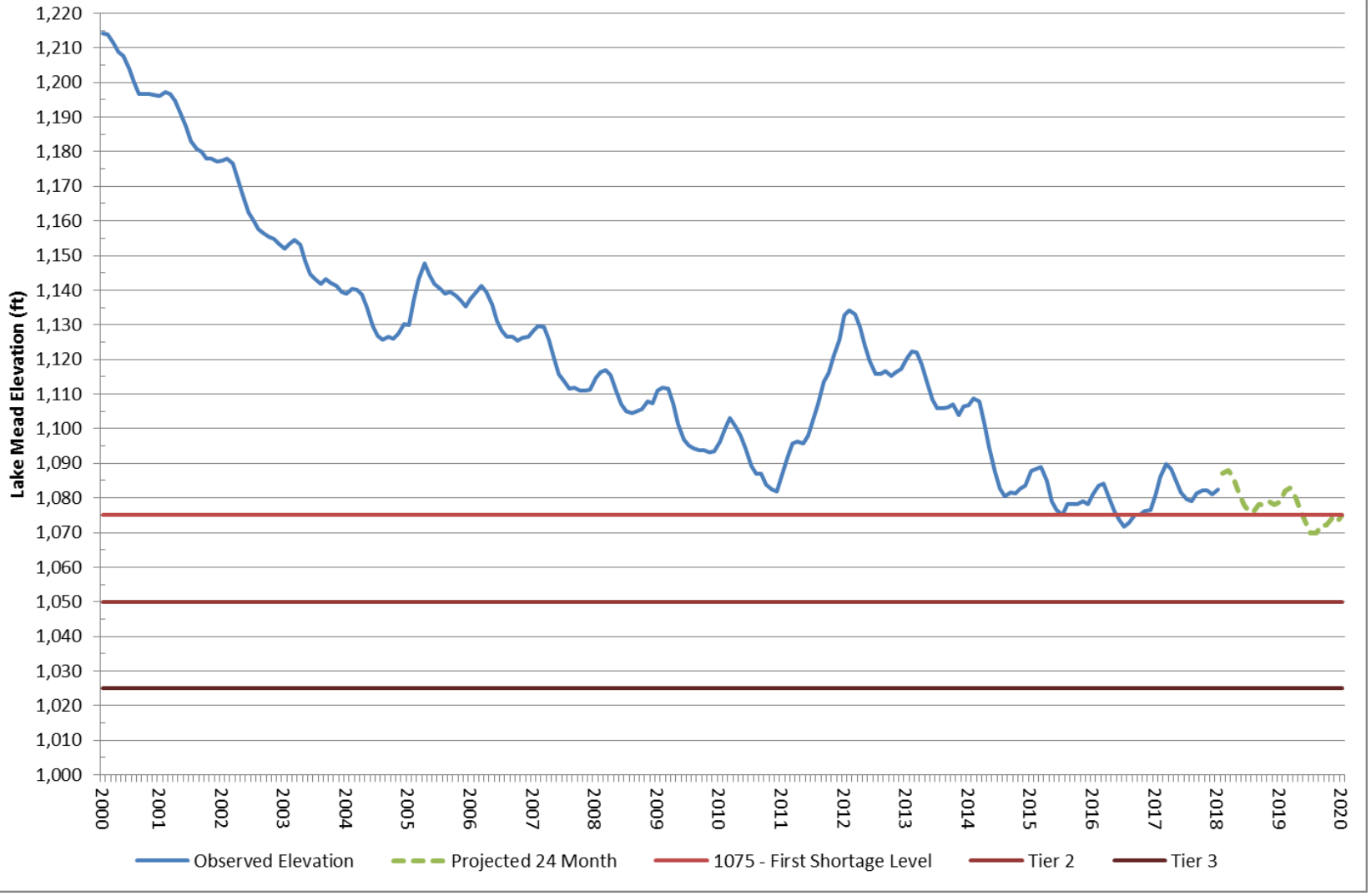
Source: ADWR, 2017

Colorado River Basin Reservoirs

Lake Powell

Lake Mead

Lake Mead Elevation
(EOM Jan 2000 - December '17 and Projected 24 Months)



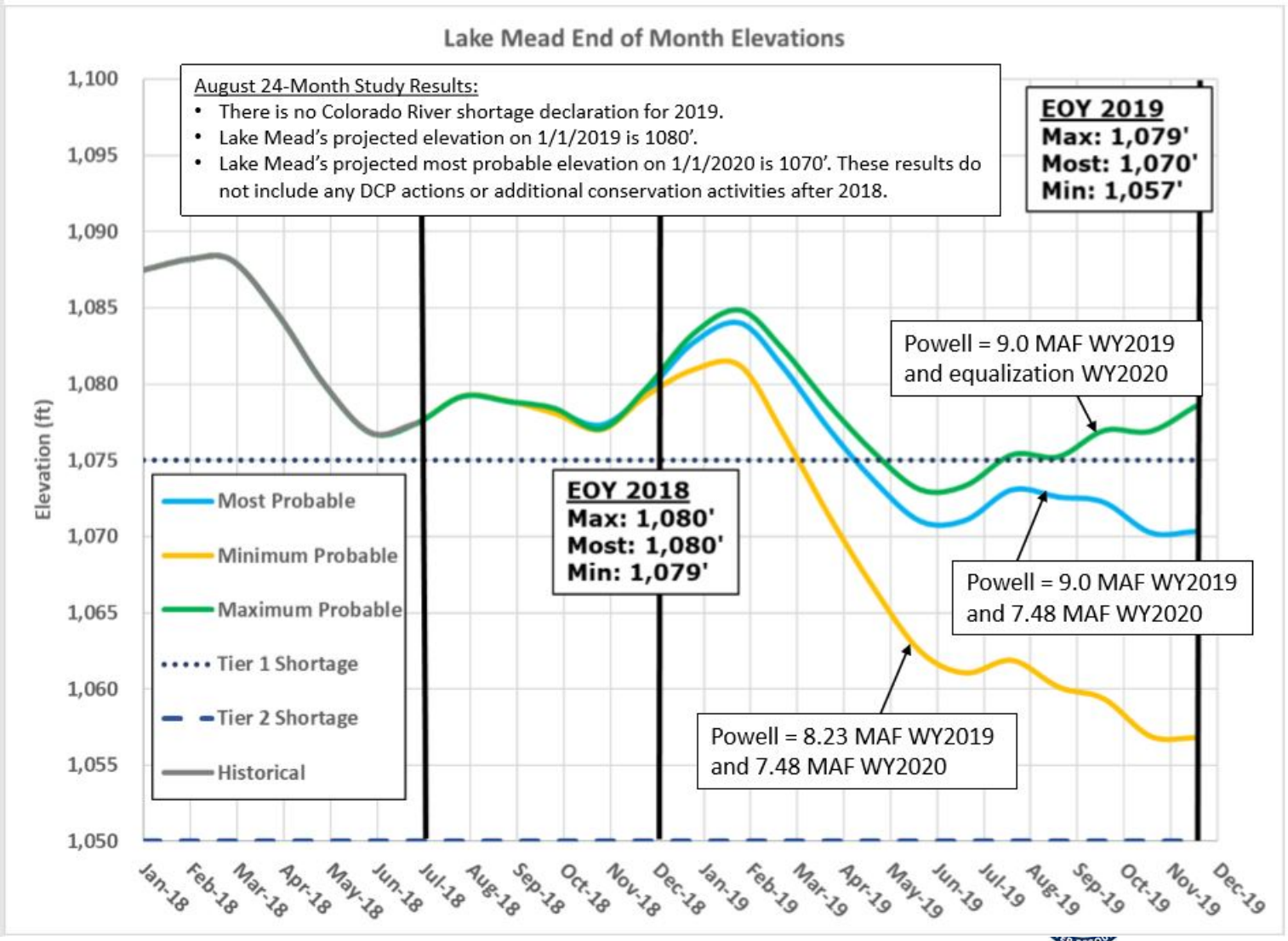
August 2018 CRSS Results with Stress Test Hydrology (1988 – 2015)

Percent of Traces with Lower Basin Event or System Condition[1,2,3,4] (values in percent)

	Event or System Condition	2019	2020	2021	2022	2023
No DCP	**Shortage Condition – any amount (Mead ≤ 1,075 ft)**	0	71	93	89	79
	Shortage – 1st level (Mead ≤ 1,075 and ≥ 1,050)	*0*	*71*	*64*	*46*	*29*
	Shortage – 2nd level (Mead < 1,050 and ≥ 1,025)	*0*	*0*	*29*	*29*	*36*
	Shortage – 3rd level (Mead < 1,025)	*0*	*0*	*0*	*14*	*14*
	Surplus Condition – any amount (Mead ≥ 1,145 ft)	0	0	0	0	0
	Surplus – Flood Control	*0*	*0*	*0*	*0*	*0*
	Normal or ICS Surplus Condition	100	29	7	11	21
With DCP	**Shortage Condition – any amount (Mead ≤ 1,075 ft)**	0	50	57	57	68
	Shortage – 1st level (Mead ≤ 1,075 and ≥ 1,050)	*0*	*50*	*32*	*25*	*32*
	Shortage – 2nd level (Mead < 1,050 and ≥ 1,025)	*0*	*0*	*25*	*32*	*25*
	Shortage – 3rd level (Mead < 1,025)	*0*	*0*	*0*	*0*	*11*
	Surplus Condition – any amount (Mead ≥ 1,145 ft)	0	0	0	0	4
	Surplus – Flood Control	*0*	*0*	*0*	*0*	*0*
	Normal or ICS Surplus Condition	100	50	43	43	29

[1] Reservoir initial conditions based on December 31, 2018 conditions as projected by the August 24-Month Study Most Probable run.
[2] Percentages computed from 28 hydrologic inflow sequences based on resampling of the observed natural flow record from 1988-2015 for a total of 28 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.

August 24-month Study



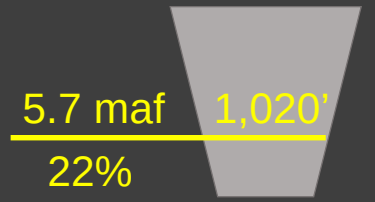
2007 Interim Guidelines

- In late 2007, Secretary of Interior adopted the Colorado River Interim Guidelines for Lower Basin shortages and the coordinated operations for Lake Powell and Lake Mead.
- The guidelines address water availability in the Lower Basin and operations of Lake Powell and Lake Mead during drought and low reservoir conditions.
- Reservoir operating decisions under the Interim Guidelines are in effect from 2008 through 2026.
- The operations are based on specific Lake Mead elevations to determine whether there is a surplus, normal or shortage conditions for water deliveries to the Lower Basin.

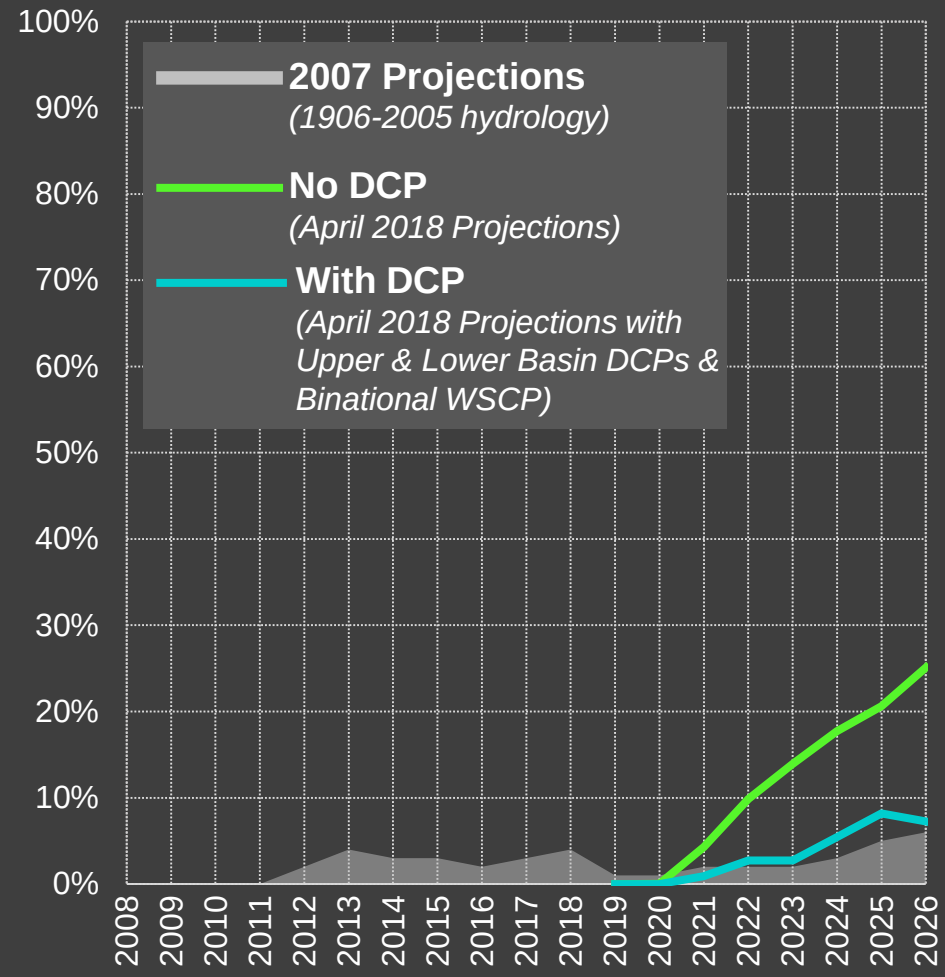
Why LBDCP is Important to Arizona

- Increased risks of critically low Lake Mead elevations without additional actions – the '07 Guidelines aren't enough
- Risks are increasing due to poor hydrology – risk for shortage as early as 2020
- Collective action, among all the 7 Basin States, the United States, and Mexico, reduces risks to everyone

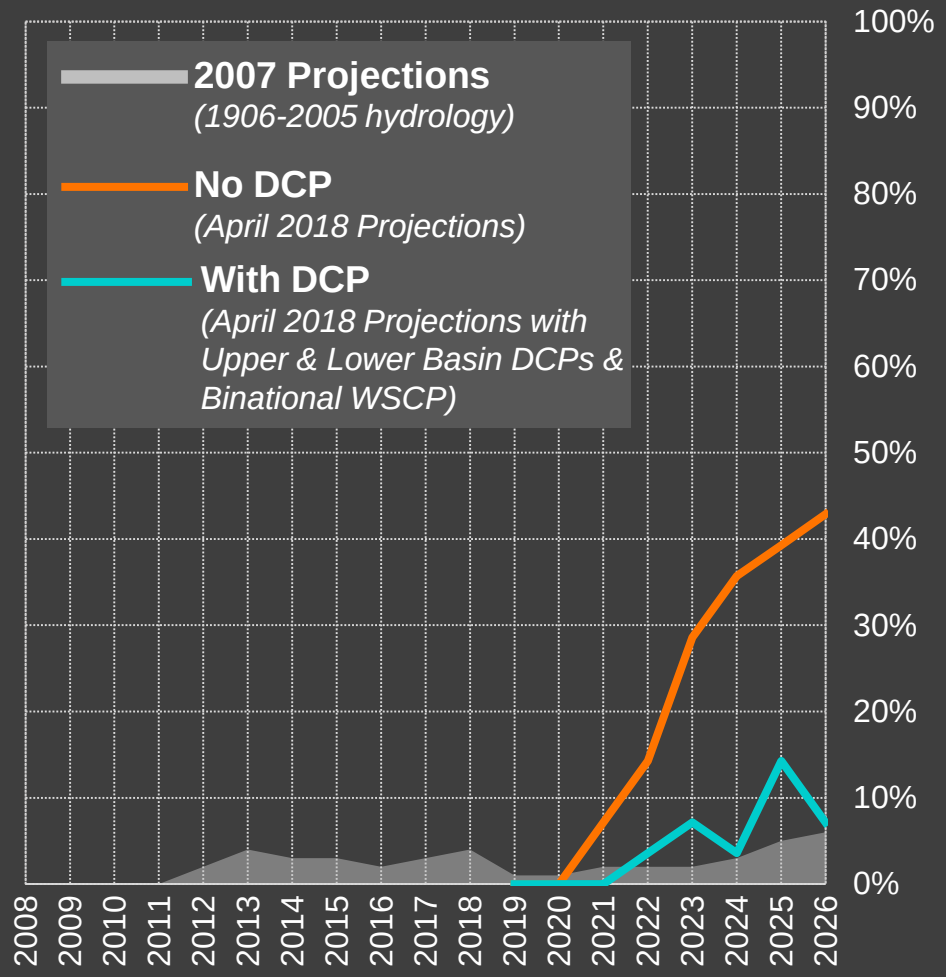
Risk of Lake Mead < 1,020’



Full Hydrology (1906-2015)



Stress Test Hydrology (1988-2015)



RECLAMATION
Managing Water in the West

LBDCP Purpose

- DCP will not prevent a Tier 1 shortage unless Upper Basin Hydrology improves in 2019 and 2020
- DCP reduces the risk that the river system will decline to critically low levels and protects the highest priority water users – Municipal and Industrial and Indian Priority water

Steering Committee Mission

Discuss and recommend how to adopt and implement the LBDCP in a way that is acceptable to Arizona water users

Steering Committee Objectives

- Seek broad commitment and support for the implementation of LBDCP in Arizona
- Recommend appropriate and sustainable processes and tools to implement LBDCP in AZ
- Obtain approval by the Arizona Legislature of a joint resolution authorizing the Director of ADWR to agree to the LBDCP

Steering Committee Schedule

- Halfway through nine total Steering Committee scheduled meeting dates
- These are open to the public and video recorded
- Issue workgroups have also been developed; those meetings are not open to the public but their work product is communicated during Steering Committee meetings

Implementing LBDCP in Arizona

- While there may be other “tier zero” years (1090’ – 1075’) before the end of the Interim Period (2026), 2019 may well be the last year in this condition (there is over a 50% chance of Tier 1 or greater shortage 2020-2026)
- There may be some processes or mechanisms that will focus primarily on “tier zero” years, but we don’t anticipate that these will consume a lot of the Steering Committee’s time

Implementing LBDCP in Arizona

- These are the reductions and contributions required under the '07 Guidelines and the LBDCP:
  - "tier zero" (1090') 192,000 acre-feet
  - Tier 1 (1075') 512,000 acre-feet
  - Tier 2 (1050') 592,000 acre-feet
  - (1045') 640,000 acre-feet
  - Tier 3 (1025') 720,000 acre-feet

- The central focus of the Steering Committee will be how best to adopt and implement LBDCP

2007 Interim Guidelines Shortage Reductions and Incremental DCP Contributions

Lake Mead Elevation	AZ 2007	AZ DCP	AZ TOTAL	NV 2007	NV DCP	NV TOTAL	CA 2007	CA DCP	CA TOTAL	BOR DCP	MX Min 323	MX BWSCP	MX Total	TOTAL
≤1090 >1075	0	192K	192K	0	8K	8K	0	0	0	100k	0	41k	41k	341k
≤1075>1050	320K	192K	512K	13K	8K	21K	0	0	0	100k	50k	30k	80k	713k
≤1050>1045	400K	192K	592K	17K	8K	25K	0	0	0	100k	70k	34k	104k	821k
≤1045>1040	400K	240K	640K	17K	10K	27K	0	200K	200K	100k	70k	76k	146k	1,113k
≤1040>1035	400K	240K	640K	17K	10K	27K	0	250K	250K	100k	70k	84k	154k	1,171k
≤1035>1030	400K	240K	640K	17K	10K	27K	0	300K	300K	100k	70k	92k	162k	1,229k
≤1030>1025	400K	240K	640K	17K	10K	27K	0	350K	350K	100k	70k	101k	171k	1,288k
≤1025	480K	240K	720K	20K	10K	30K	0	350K	350K	100k	125k	150k	275k	1,475k

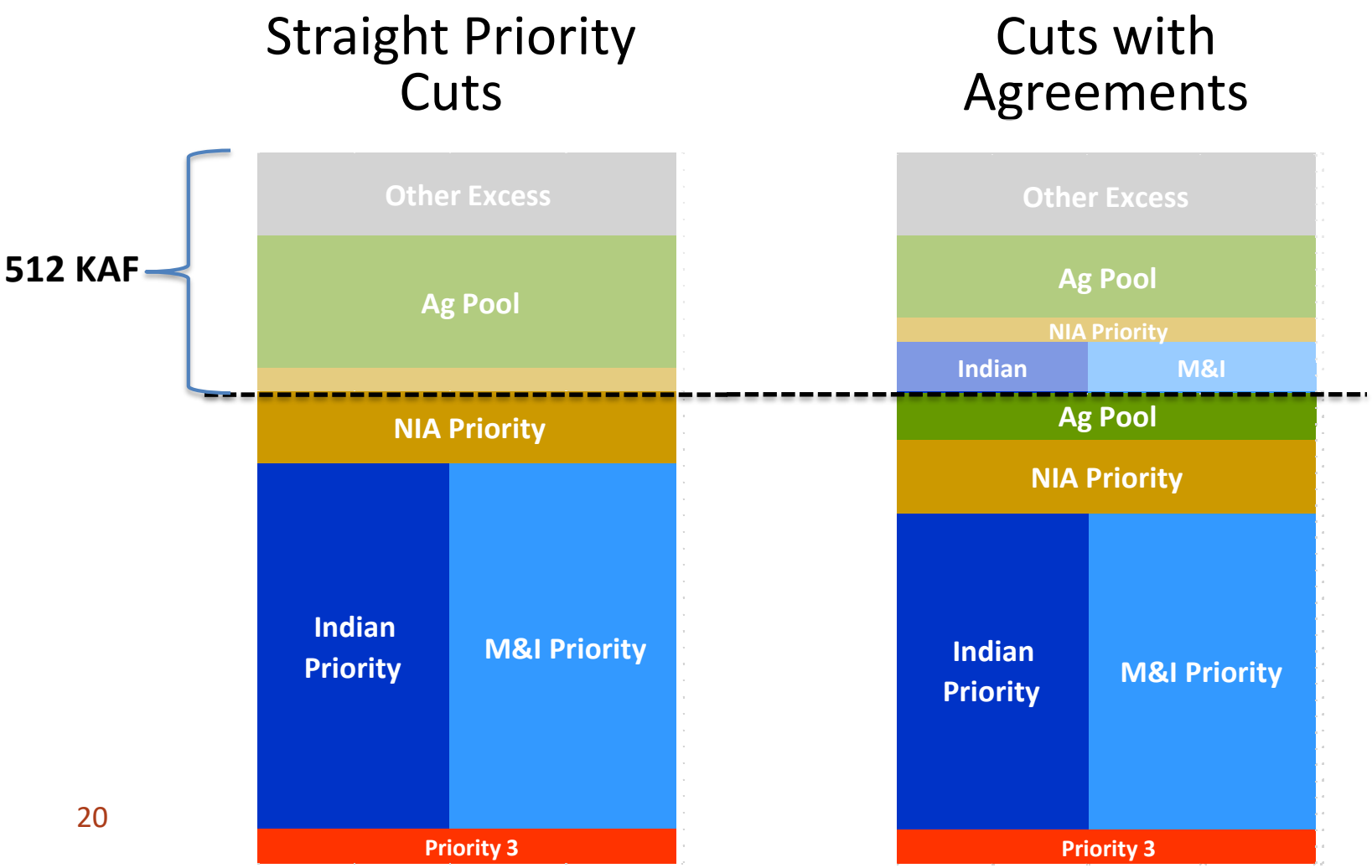
Implementing LBDCP in Arizona

- Reductions under the LBDCP will occur in priority order within Arizona
- However, alternative approaches that conform to the existing priority system, to allow reductions in use of higher priority water to flow to lower priority users and into Lake Mead may be developed

Implications to CAP Rates

- As CAP deliveries are reduced, the Fixed OM&R and overall water delivery rates will increase
  - For example, 2020 CAP published rates: Fixed OM&R = $98/AF, and delivery (including Fixed OM&R and Pumping Energy) = $152/AF
- Current CAP rates assume about 192 KAF of contribution to Lake Mead, equivalent to the first level of the LBDCP
- The 2007 Guidelines reductions are estimated to increase the Fixed OM&R rate by ~10 to 25%, and the overall water delivery rate by ~7 to 17%
- The incremental LBDCP contributions are estimated to increase the Fixed OM&R rate by an additional ~20 to 30%, and the overall water delivery rate by ~13 to 20%

Implementing LBDCP in Arizona (Example)



Implementing LBDCP in Arizona
4 Essential Elements

- ADWR and CAWCD have identified 4 essential elements to consider as tools to implement LBDCP in Arizona
- The tools are focused on mitigating the differential impacts of LBDCP and sustaining collaborative processes within Arizona

Implementing LBDCP in Arizona
4 Essential Elements – Basis for Inclusion

- **CAP Ag Mitigation** – The CAP Ag Pool faces reductions under the LBDCP, but receives limited benefits
- **Tribal ICS** – Currently, the NIA Pool is largely held by CAP Tribes with settlements. The Tribal ICS tool provides some flexibility for management of supplies provided from settlements and on-River entitlements.
- **CAP Excess Water Plan** – continuation of the collaborative approach to achieving multiple benefits from the CAP Excess Water supply. The CAP Excess Water supply is the major contributor to "tier zero" reductions
- **Arizona Conservation Plan** – a new collaborative process to foster broader participation to help meet Arizona's LBDCP reductions

Importance of Implementing LBDCP in Arizona

- Next step in Arizona legacy of tackling and solving complex water problems
- Signal to financial markets, investors, developers and employers that Arizona is “open for business” and on top of its water future
- Statement of firm partnership with the other Basin States and Mexico – we are in this together and will deal with ongoing drought and potential shortage together
- Protects the highest priority CAP water users and provides a glide path for central Arizona agriculture and ongoing economic development

With additional questions contact:

ADWR at sslee@azwater.gov

CAWCD at cthompson@cap-az.com

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