RECLAMATION

Managing Water in the West

Lower Basin Drought Contingency Plan (LBDCP) - An Arizona Perspective

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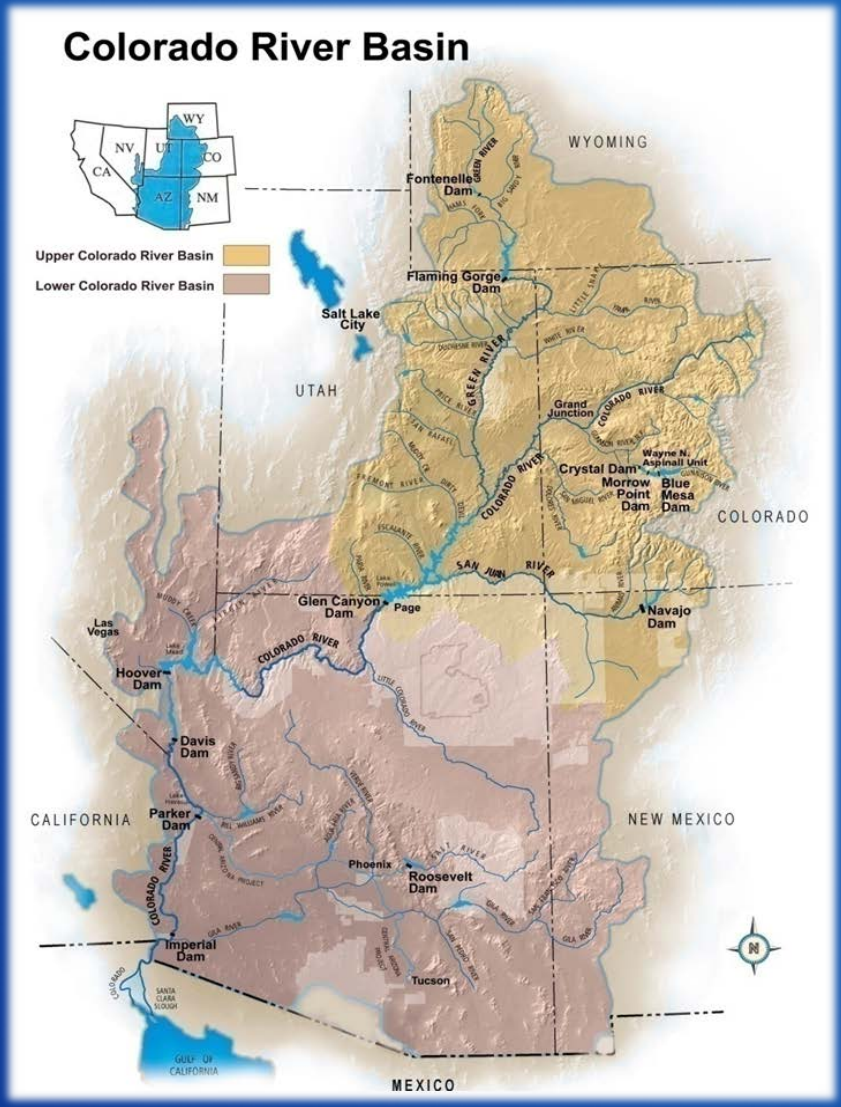
Yuma, Arizona

U.S. Department of the Interior
Bureau of Reclamation

Colorado River Basin Overview

- 16.5 million acre-feet (maf) allocated annually
  - 7.5 maf each to Upper and Lower Basins
  - 1.5 maf to Mexico
- 14.8 maf average annual “natural” inflow into Lake Powell over past 110 years
- Inflow is highly variable year-to-year
- 60 maf of storage
  - 4 times the annual inflow
- Operations and water deliveries governed by the “Law of the River”



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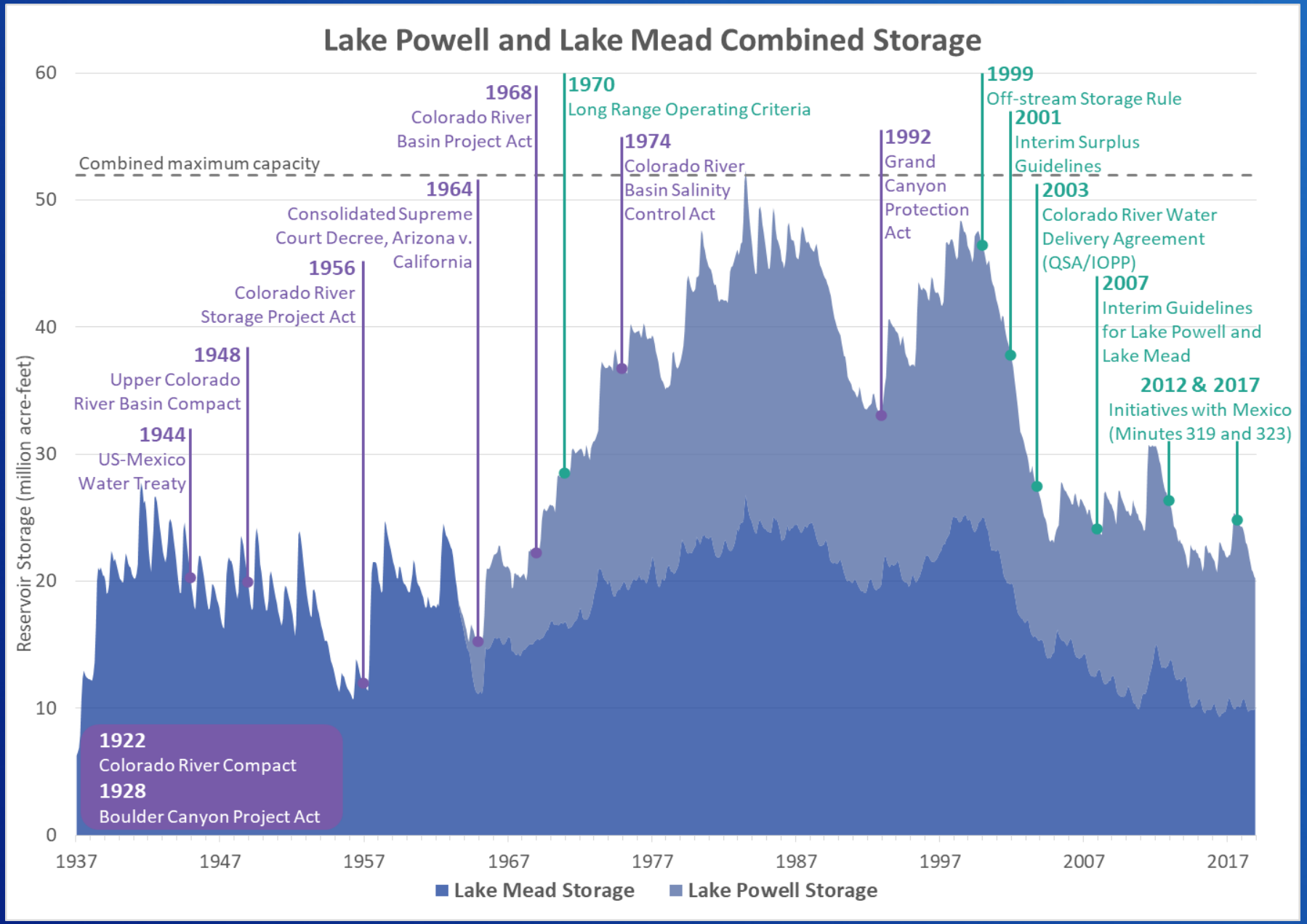

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2007 Interim Guidelines

- In place for an interim period (2007 through 2026)
- Provide for coordinated operations of Lake Powell and Lake Mead to minimize Lower Basin shortages and Upper Basin curtailments
- Encourage efficient use and management of Colorado River water through the Intentionally Create Surplus (ICS) mechanism
- Establish guidelines for determining shortages in the Lower Basin
- Does not include provisions for Mexico

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1944 U.S.-Mexico Water Treaty

Minute 319 – November 2012

International Boundary and Water Commission

Damage to canal in Mexico from earthquake, April 2010

Minute 323 – September 2017

Binational Water Scarcity Plan

View of riparian area in Colorado River Delta

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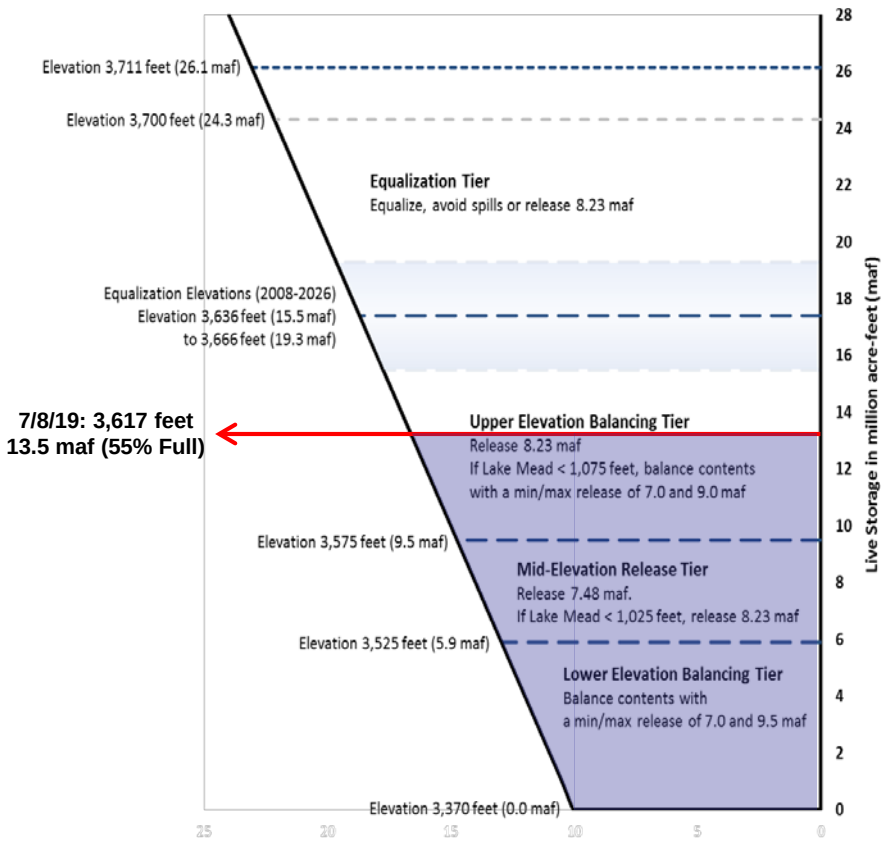
2007 Interim Guidelines

Lake Mead Elevation	Arizona Reduction	Nevada Reduction	Mexico Reduction
1075'	320,000 AF	13,000 AF	50,000 AF
1050'	400,000 AF	17,000 AF	70,000 AF
1025'	480,000 AF	20,000 AF	125,000 AF

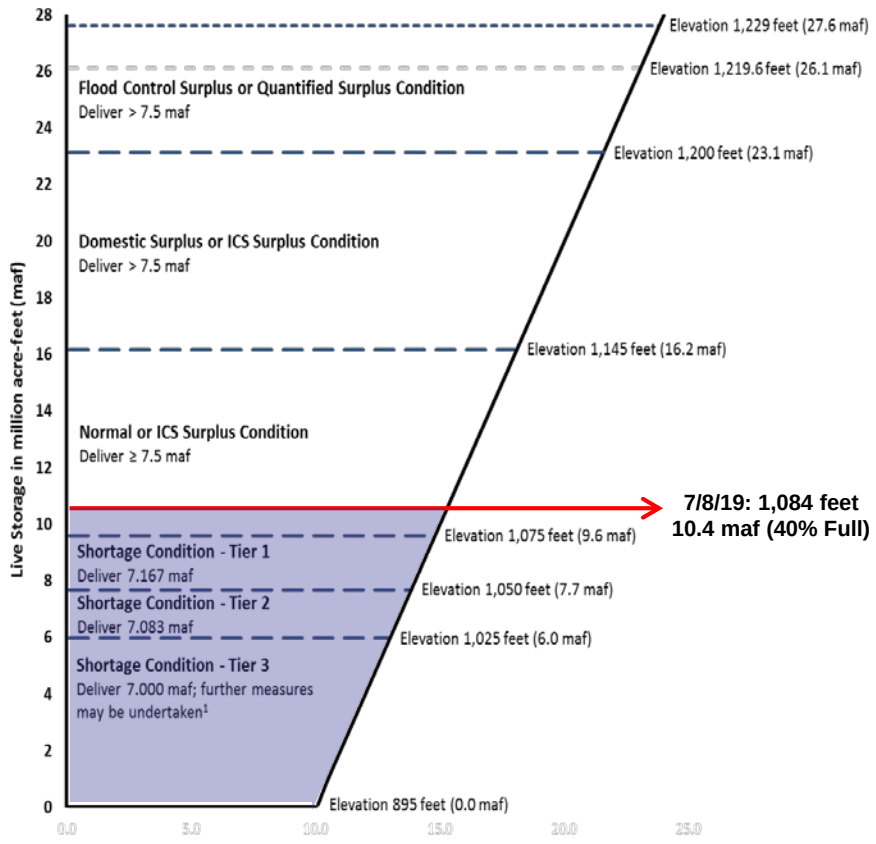
- Arizona and Nevada share Lower Basin shortages under the 2007 Guidelines
- Mexico voluntarily agreed in Minute 319 to accept reductions in its deliveries at the same elevations
- No additional reductions to California under 2007 Guidelines

Lake Powell and Lake Mead Operational Diagrams
(According to the 2007 Interim Guidelines)

Lake Powell



Lake Mead



[1] 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.

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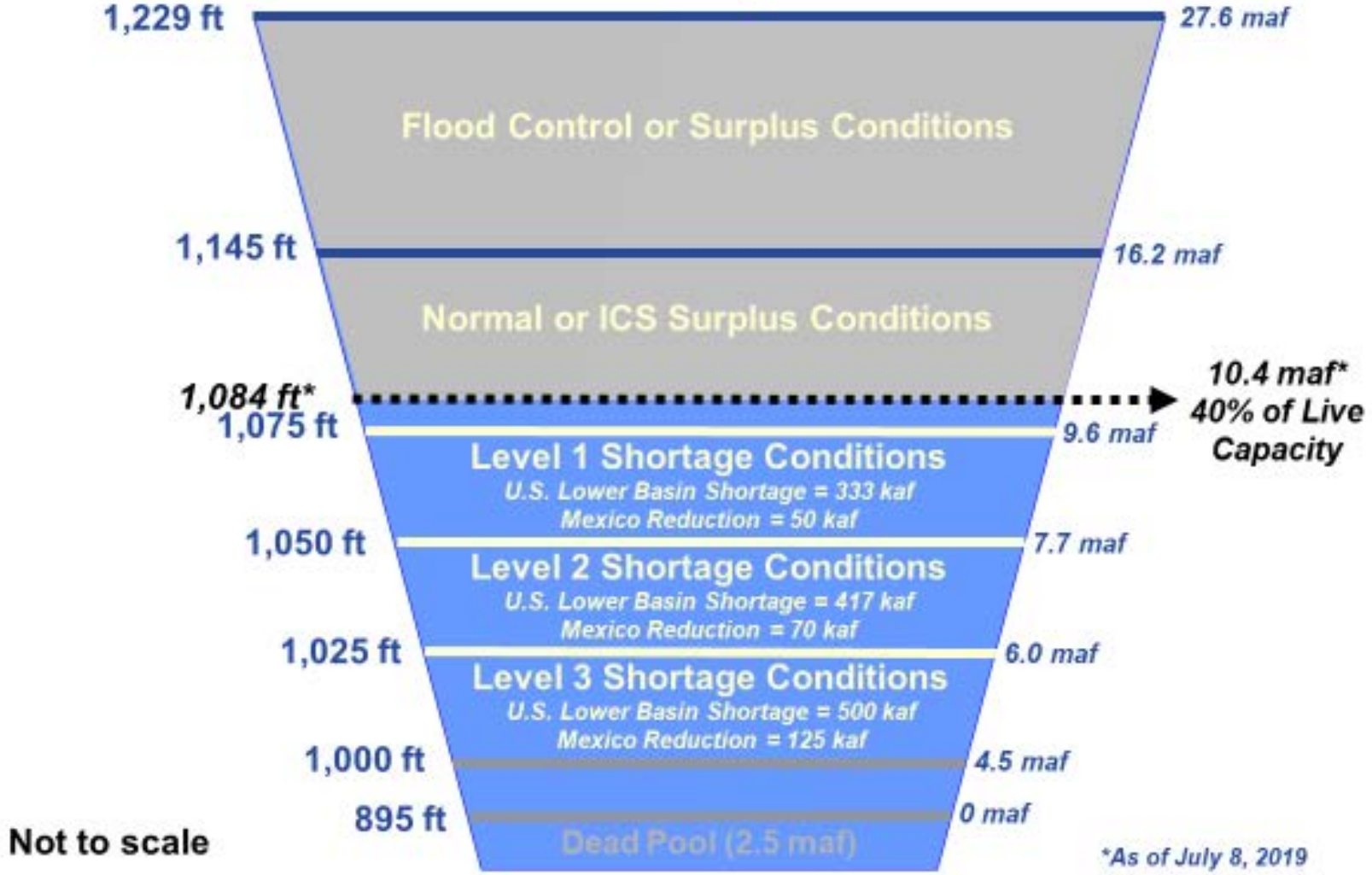
Lake Mead – Key Elevations[1,2]



[1] U.S. Lower Basin shortage volumes based on the 2007 Interim Guidelines (in place 2007-2026).
[2] Mexico reductions based on Minute 323 (in place 2017-2026).

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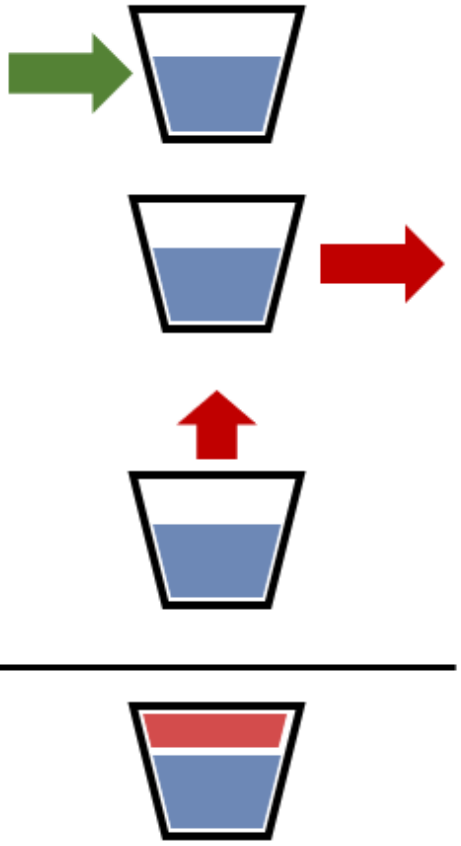
Water Budget at Lake Mead

Given current water demands in the Lower Basin and Mexico, and a minimum objective release from Lake Powell (8.23 maf), Lake Mead storage declines by about 1.2 maf annually (equivalent to about 12 feet in elevation).

Inflow *Powell release + side inflows above Mead*	9.0 maf
Outflow *Lower Basin State apportionments and Mexico Treaty allocation, plus balance of downstream regulation, gains, and losses*	-9.6 maf
Mead evaporation loss	-0.6 maf
Balance	-1.2 maf



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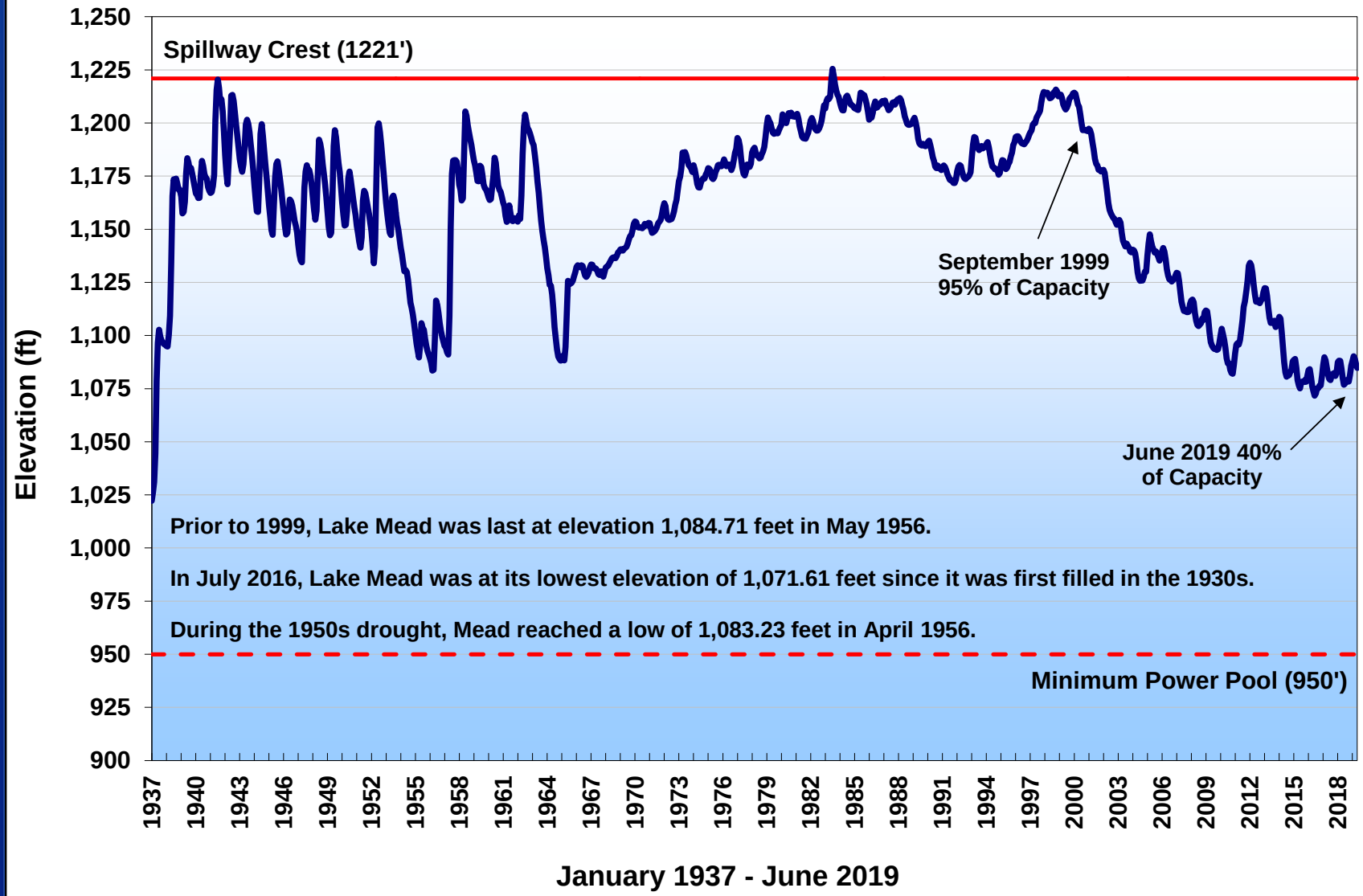
Lake Mead End of Month Elevation



January 1937 - June 2019

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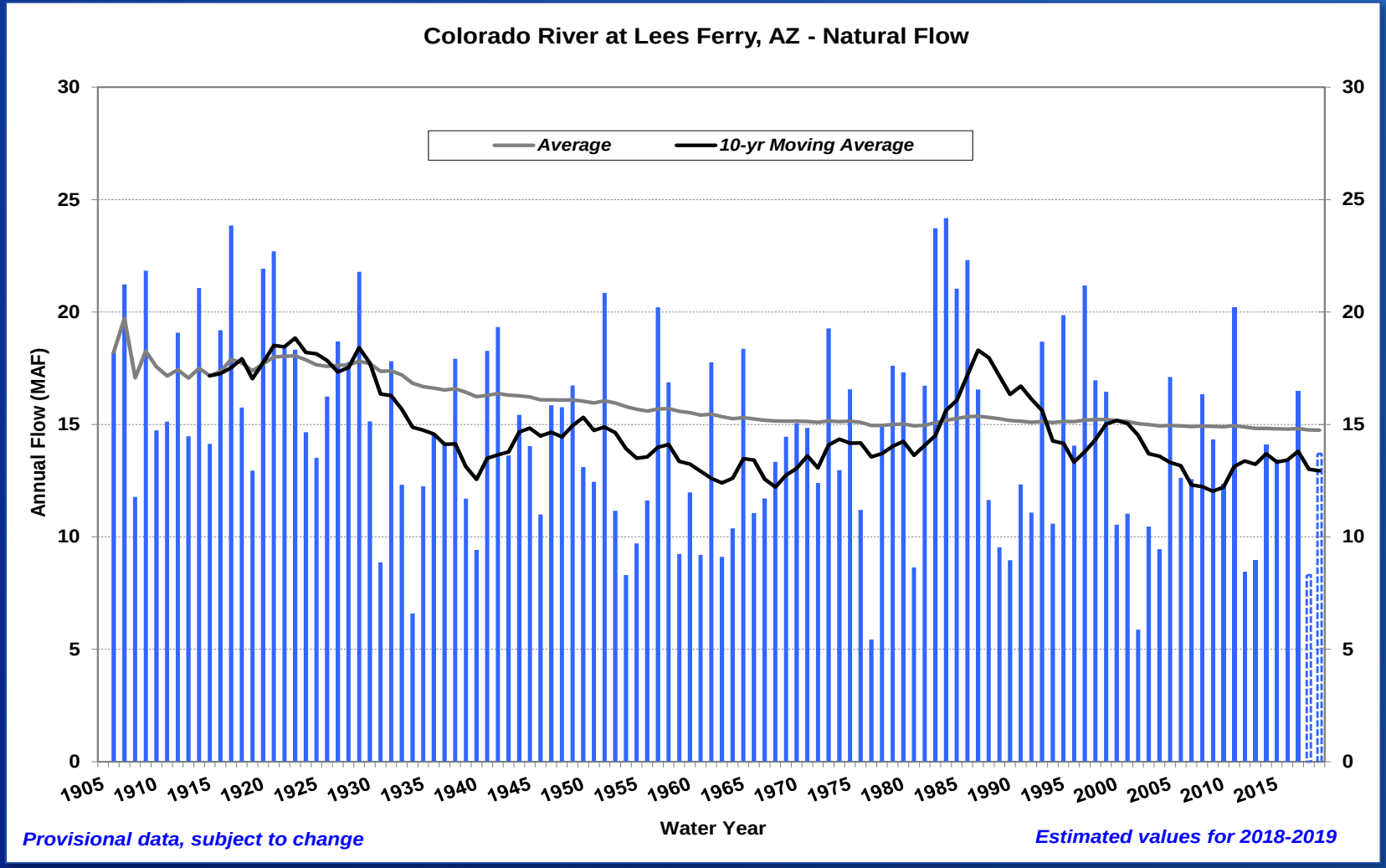
Natural Flow

Colorado River at Lees Ferry Gaging Station, Arizona

Water Year 1906 to 2019



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Total Contemplated Lower Basin Volumes (in KAF)
2007 Interim Guidelines, Minute 323, Lower Basin Drought Contingency Plan & Binational Water Scarcity Contingency Plan

Lake Mead Elevation (ft msl)	2007 Interim Guidelines Shortages		Minute 323 Delivery Reductions	Total Combined Reductions	DCP Contributions			Binational Water Scarcity Contingency Plan Savings	Combined Volumes by Country *US: (2007 Interim Guidelines Shortages + DCP Contributions)* *Mexico: (Minute 323 Delivery Reductions + Binational Water Scarcity Contingency Plan Savings)*					Total Combined Volumes
	AZ	NV	Mexico	***Lower Basin States + Mexico***	AZ	NV	CA	Mexico	*AZ Total*	*NV Total*	*CA Total*	*Lower Basin States Total*	*Mexico Total*	***Lower Basin States + Mexico***
1,090 - >1,075	0	0	0	***0***	192	8	0	41	192	8	0	*200*	*41*	***241***
1,075 - >1050	320	13	50	***383***	192	8	0	30	512	21	0	*533*	*80*	***613***
1,050 - >1,045	400	17	70	***487***	192	8	0	34	592	25	0	*617*	*104*	***721***
1,045 - >1,040	400	17	70	***487***	240	10	200	76	640	27	200	*867*	*146*	***1,013***
1,040 - >1,035	400	17	70	***487***	240	10	250	84	640	27	250	*917*	*154*	***1,071***
1,035 - >1,030	400	17	70	***487***	240	10	300	92	640	27	300	*967*	*162*	***1,129***
1,030 – 1,025	400	17	70	***487***	240	10	350	101	640	27	350	*1,017*	*171*	***1,188***
<1,025	480	20	125	***625***	240	10	350	150	720	30	350	*1,100*	*275*	***1,375***

The US will work to create or conserve 100,000 af or more of Colorado River system water on an annual basis to contribute to conservation of water supplies in Lake Mead and other Colorado River reservoirs. All actions taken by the United States shall be subject to applicable federal law, including availability of appropriations.

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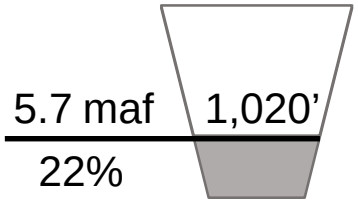
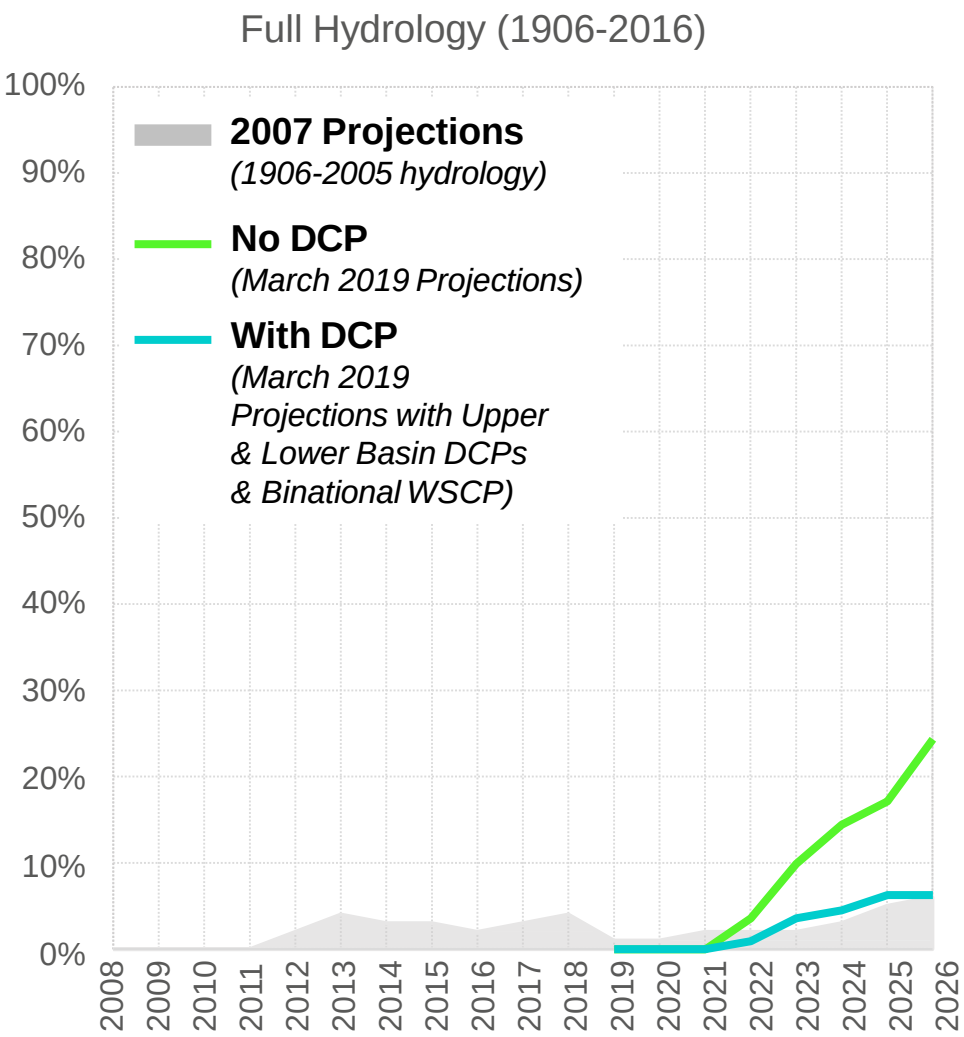
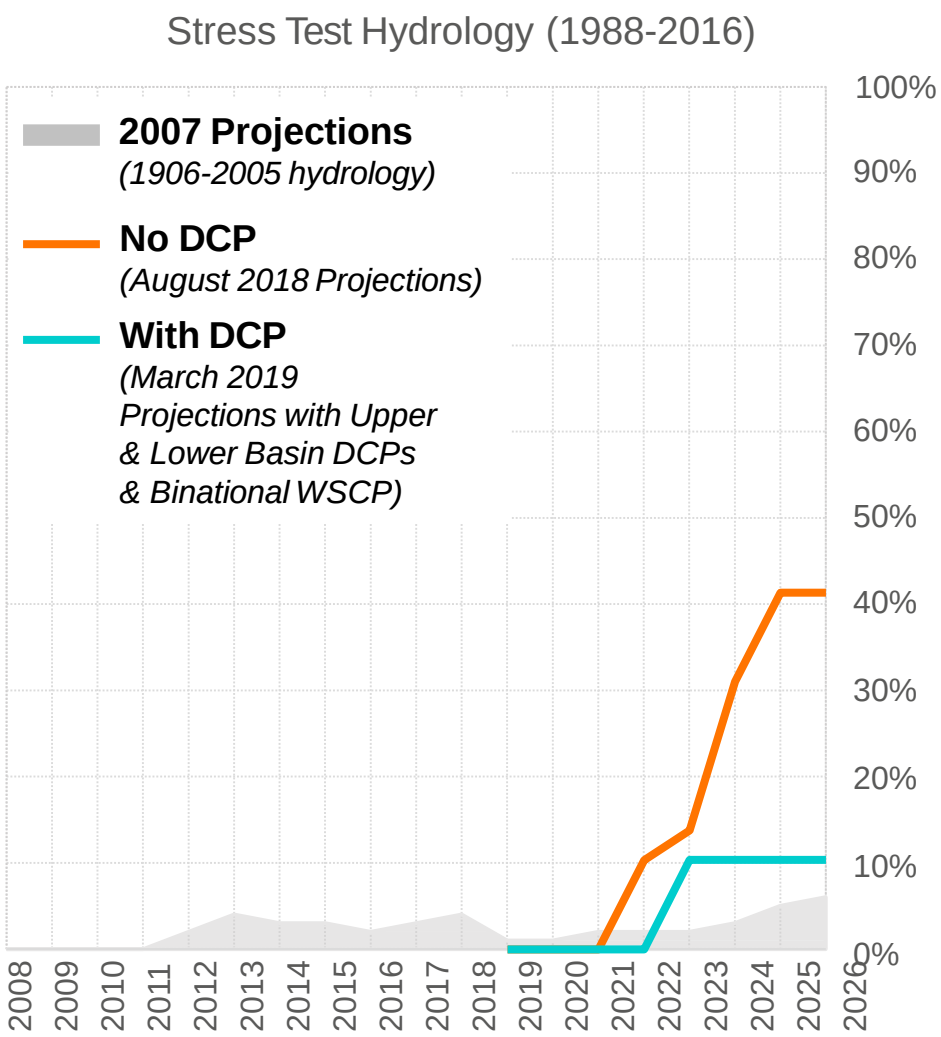
Risk of Lake Mead < 1,020’







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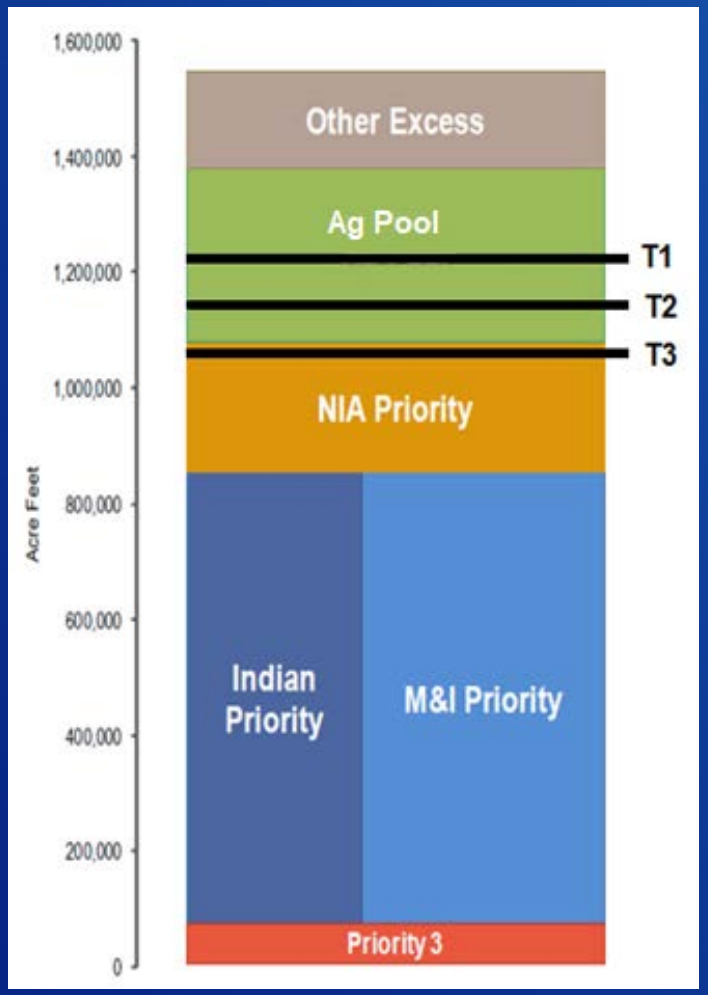
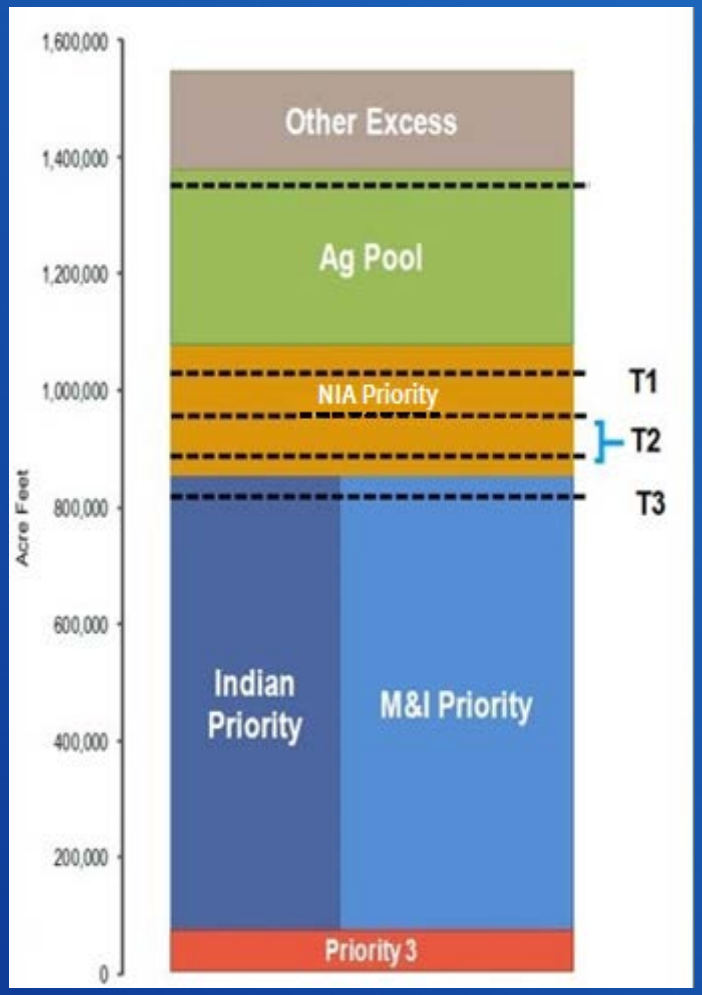
CAP Priority Pools & Shortage

2007 Guidelines



LBDCP



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Intra – Arizona

Mitigation Component- Key Terms

- 2020 – 2022
  - 100% mitigation for NIA Pool (annual determination of vol.)
  - Fixed volume for CAP AG, dependent on annual tier determination
- 2023 – 2025
  - No CAP Ag Mitigation (except USF to GSF and groundwater infrastructure)
  - M&I and Indian priority fully mitigated first
  - NIA volume based on actual orders/operating conditions
  - NIA 75% under T1 and T2a (until no supplies)
  - NIA 50% under T2b (until no supplies)
- 2026
  - Zero mitigation
- No mitigation for any water user in T3 or 2026, whichever occurs first

Excerpt from Nov 29, 2018 and Jan 8, 2019 Steering Committee Meetings

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Resources

Wet Water:

- 400 kaf CAP ICS
- 50 kaf CAP Lake Pleasant
- 50 kaf CAP-SRP Exchange
- 100 kaf USF-GSF
- Up to 91 kaf GSF (A portion would require WaterBUD partial repeal)
- Up to 30 kaf of CAP operational supplies

Compensated Mitigation

- $60M payments for impacted NIA supplies in lieu of wet water delivery.

Money for GW Infrastructure Development for Pinal Ag

16.5 kaf in 2022, 70 kaf/yr beginning in 2023

Excerpt from Nov 29, 2018 Steering Committee Meeting

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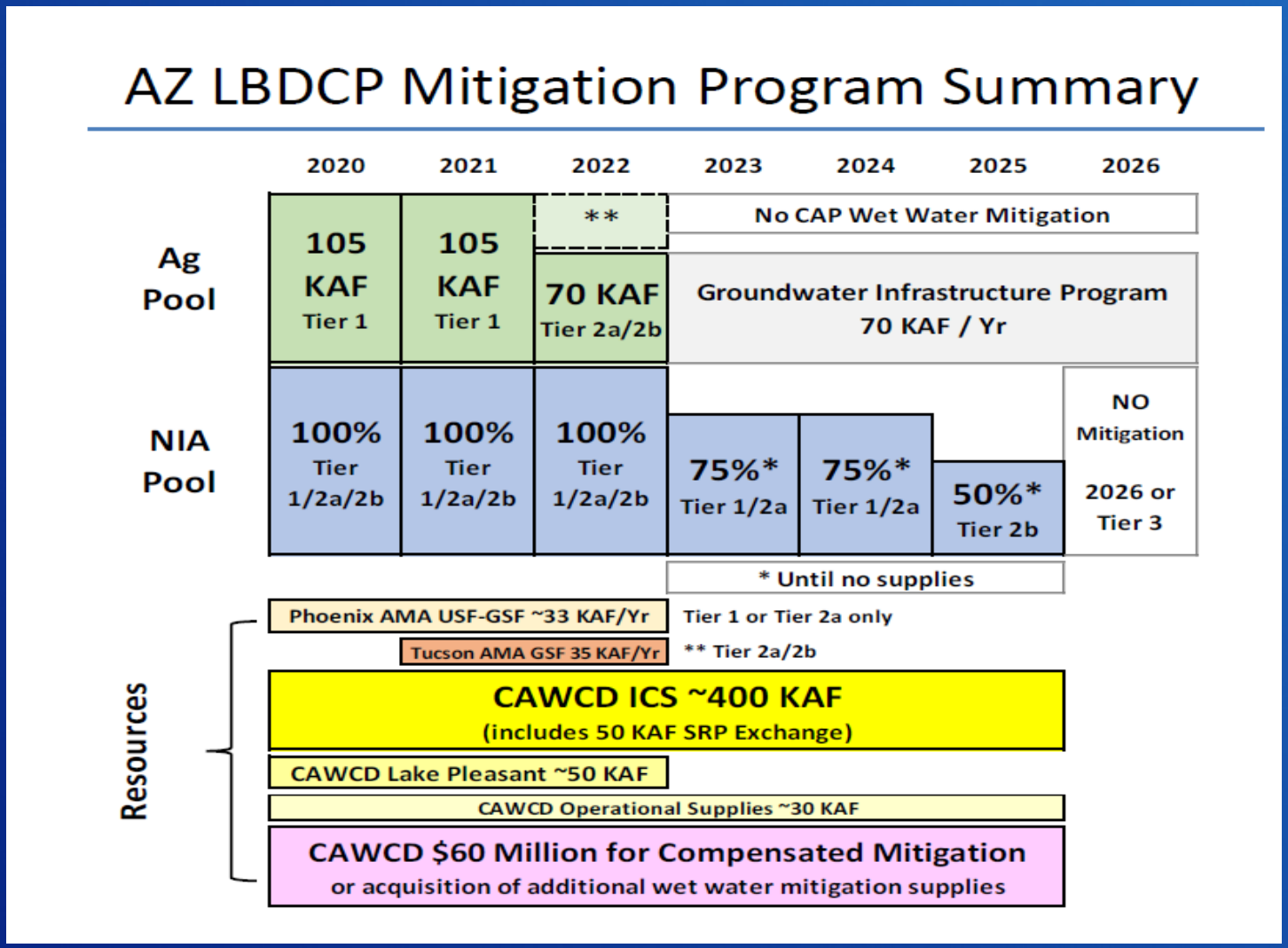

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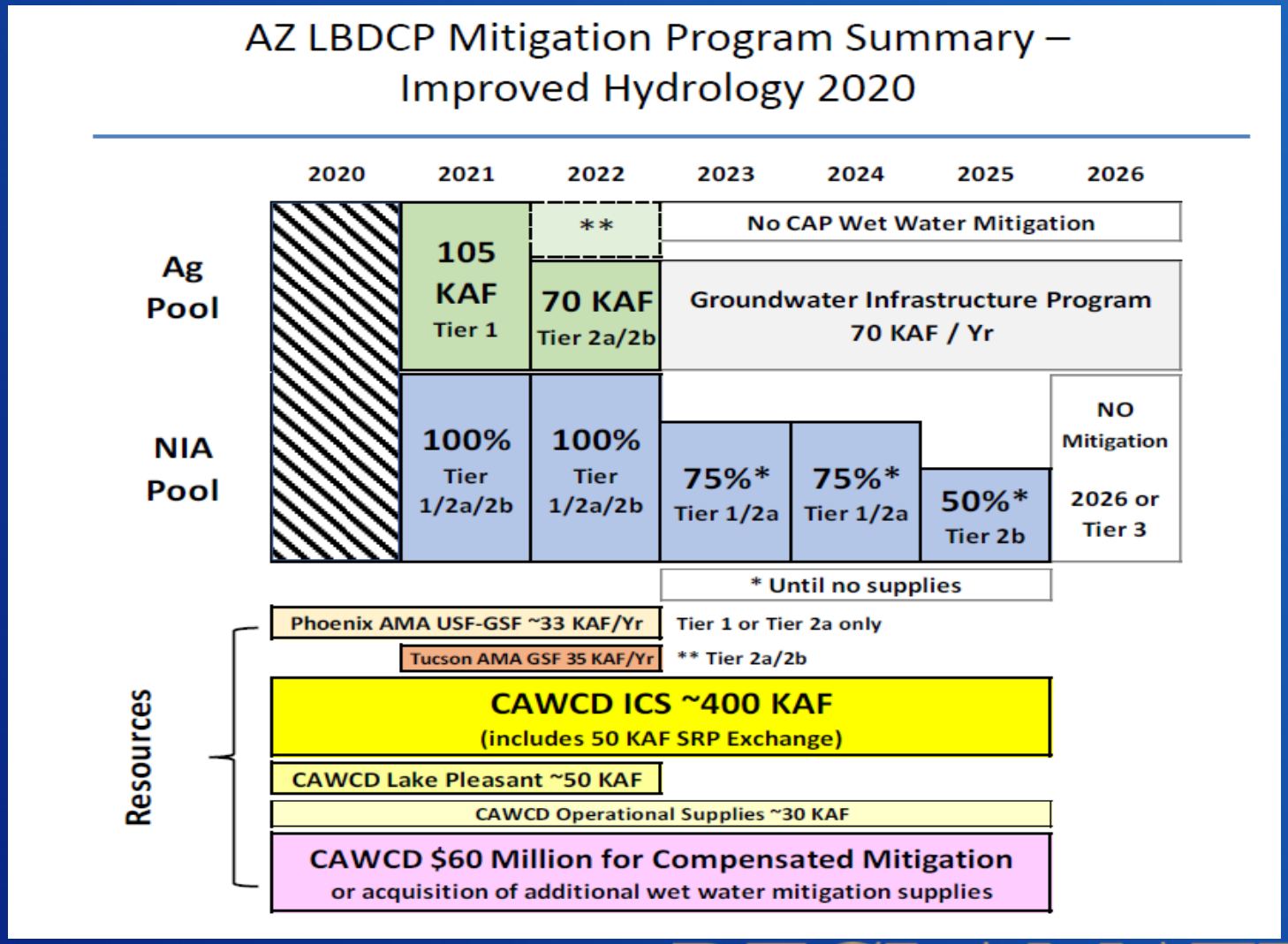

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