Lower Basin Drought Contingency Plan

- **Goals:**
  - Overlay new actions onto the 2007 Guidelines to respond to increased risk in the Lower Basin.
  - Take proactive measures to reduce the risks of catastrophic shortages on the Colorado River system.
  - Provide more certainty regarding Secretarial actions to address potential declines in Lake Mead as the result of extended drought.
- **LBDCP Proposed Actions**:
  - Additional reductions to AZ and NV at higher elevations.
  - Conservation and reduced losses by Reclamation.
  - Contributions by California at lower elevations.
  - New ICS flexibility during shortages.
  - Coordinated efforts with Mexico & Upper Basin.

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LBDCP & Minute 323

Lake Mead Elevation	AZ (2007)	AZ (Plan)	AZ Total	NV (2007)	NV (Plan)	NV Total	CA (2007)	CA (Plan)	CA Total	USBR	Mexico Minute 323 LERS	Mexico Minute 323 BWSCP	Mexico Total	TOTAL
1,090-1,075	0	192,000	192,000	0	8,000	8,000	0	0	0	100,000	0	41,000	41,000	341,000
1,075-1,050	320,000	192,000	512,000	13,000	8,000	21,000	0	0	0	100,000	50,000	30,000	80,000	713,000
1,050-1,045	400,000	192,000	592,000	17,000	8,000	25,000	0	0	0	100,000	70,000	34,000	104,000	821,000
1,045-1,040	400,000	240,000	640,000	17,000	10,000	27,000	0	200,000	200,000	100,000	70,000	76,000	146,000	1,113,000
1,040-1,035	400,000	240,000	640,000	17,000	10,000	27,000	0	250,000	250,000	100,000	70,000	84,000	154,000	1,171,000
1,035-1,030	400,000	240,000	640,000	17,000	10,000	27,000	0	300,000	300,000	100,000	70,000	92,000	162,000	1,229,000
1,030-1,025	400,000	240,000	640,000	17,000	10,000	27,000	0	350,000	350,000	100,000	70,000	101,000	171,000	1,288,000
<1,025	480,000	240,000	720,000	20,000	10,000	30,000	0	350,000	350,000	100,000	125,000	150,000	275,000	1,475,000

LERS - Low Elevation Reservoir Shortages,
BWSCP - Binational Water Scarcity Contingency Plan reductions

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Arizona DCP+ Plan Goals & Approach

- **Goals:**
  - Avoid shortage as long as possible (mitigates disparate effects of DCP)
  - Adaptable, consistent, reliable and technically robust process
  - Achieve consensus for legislative approval of DCP without weakening other goals
- **Current Approach Outlined by ADWR**:
  - Use Reclamation's "5-year Probability Table" (Apr. & Aug. 24-mo. studies) to set Mead target elevation based on probability vs. elevation table developed by ADWR,
  - Estimate Basin-wide (including AZ, CA, NV, MX activities) conservation needed to achieve target elevation using recent 24 Month Study model
  - Recommend an Arizona conservation volume to a "decision group" of potential funders and conservation partners to implement in the coming year(s)

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Conservation Planning ’18 &’19
Arizona DCP+ Plan Example:

Determine Lake Mead's Target Elevation

Reclamation's MTOM/CRSS 5-year Probability Table April 2017

	2018	2019	2020	2021	2022
Probability of any level of shortage (Mead ≤ 1,075 ft.)	N	31	32	34	39
1st level shortage (Mead ≤ 1,075 and ≥1,050 ft)	0	31	31	26	27
2nd level shortage (Mead <1,050 and ≥1,025 ft)	0	0	1	8	9
3rd level shortage (Mead <1,025)	0	0	0	<1	3

Shortage Probability	Target Elevation
>45%	1,084 feet
>35% and <45%	1,082 feet
>25% and <35%	1,080 feet
>0% and <25%	1,078 feet

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	June 24-MS		
Conservation Year	Conservation Volume (Acre-Feet)	Initial Elevation (Feet above msl)	Final Elevation (Feet above msl)
2018	320,000	1,076.5 (Jan. 1, 2019)	1080.1
2019	405,000	1,072.0 (Jan. 1, 2020)	1080.2
	Based on **Most** Probable Inflow Scenario		

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Hydrology Update – Improved Conditions

Colorado River Basin Storage
as of August 14, 2017

Reservoir	Percent Full	Storage (MAF)	Elevation (Feet)
Lake Powell	63%	15.22	3,633.3
Lake Mead	38%	10.03	1,080.2
Total System Storage*	57%	33.70	NA

*Total system storage was 30.98 maf or 52% this time last year

RECLAMATION

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Hydrology Update – Improved Conditions

- System contents 57% (~2.7 MAF more than last year)
- No shortage for 2018
- Reduced risks of shortage for 2019
- Significant opportunity to continue to avoid shortages in 2019 & 2020
- Continued release of 9.0 MAF from Powell projected for WY 2018 & 2019,
- Increased probability for Equalization for WY 2018 & 2019

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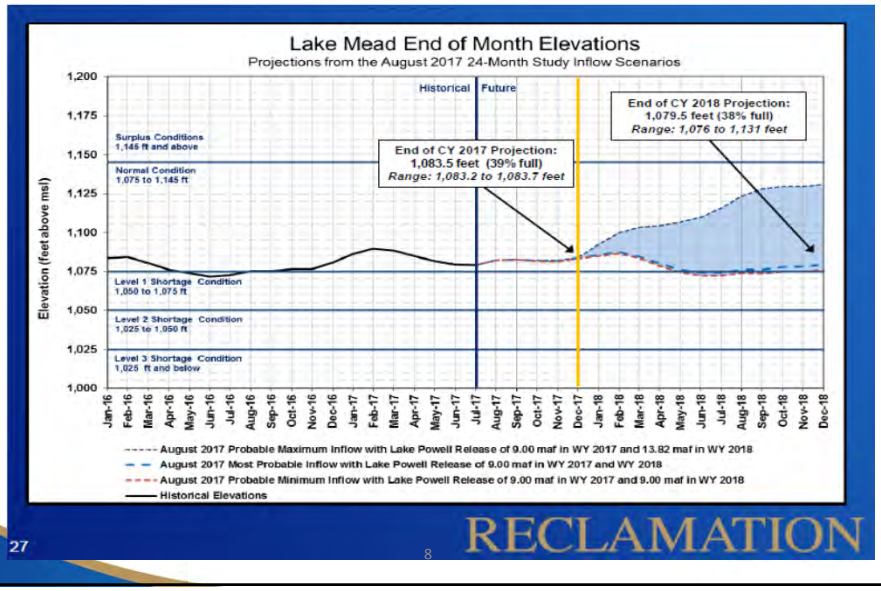
Hydrology Update – Improved Conditions



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RECLAMATION

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Hydrology Update – Improved Conditions

- BOR August 24 Month Study results:
  - EOY 2018 **1,083.5'** (range 1,083.2' – 1,083.7')
  - EOY 2019 **1,079.5'** (range 1,076' – 1,109')
- All year-end projections 2018 & 2019 are above 1,075'
- Does not consider on-going storage by MWD in '17
- Assumes no conservation in '18 (no DCP or DCP-like actions by CAP or others)
- BOR will prepare updated "5-year Table" later in August

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Conservation Planning '18 &'19 Arizona DCP+ Plan Example:

- June 24 Mo. Study Example (ADWR – 7/12/17):
  - **2018 Target volume = 320,000 af (Basin-wide)**
  - **2019 Target volume = 405,000 af (Basin-wide)**
- August 2017 Example (CAWCD – 8/15/17):
  - **2018 Target volume = 0 af (Basin-wide)**
  - **2019 Target volume = ~320 kaf (Basin-wide)**
- Using the same methodology, changing conditions (water use and hydrology) drive substantial changes in target elevation and estimated volume through the year

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Conservation Planning 2018 & 2019

- There is an opportunity to "tread water" in Lake Mead by taking advantage of favorable relative elevations in Lake Mead and Lake Powell (9.0 KAF release tier), supplemented by modest targeted conservation
- "Sweet spot" of 1,080' - 1,085' EOY elevation
- Arizona approach should anticipate conservation that might occur that is not included in the BOR estimates (April and August) prior to developing AZ conservation targets
- CAP has shared with ADWR some concepts to help develop a more consistent, reliable and technically robust estimating process for DCP+
- This approach could reduce intra-year volatility and "on-off" conservation between years

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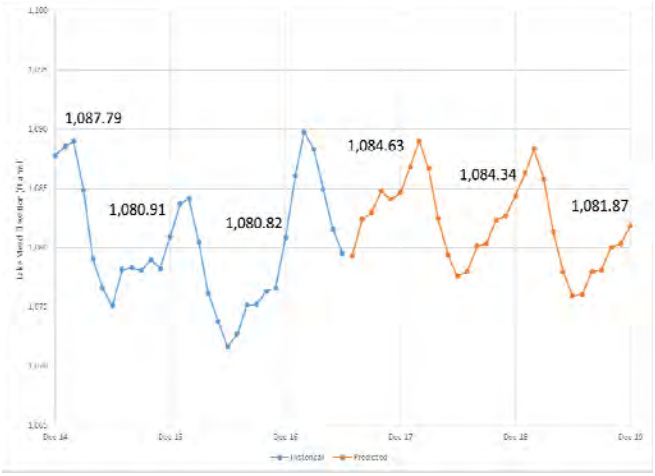
Conservation Planning 2018 & 2019

Continued DCP – like contributions to Mead
(continue to avoid shortage through 2020)



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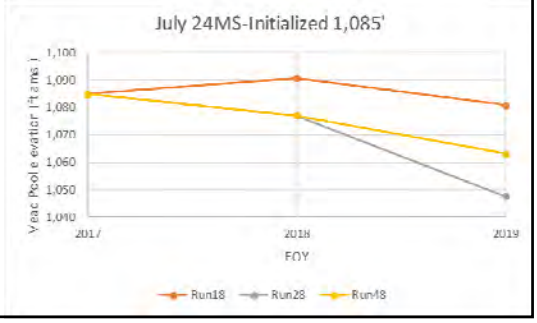
Conservation Planning 2018 & 2019

- What about "building a buffer" in Lake Mead?
  - 2007 Guidelines create the potential for unintended penalties for contributions to Lake Mead as Mead elevation approaches 1090'
  - Contributions can "reset" Mead elevations through reductions in Powell releases (shift from 9.0 MAF to 8.23 MAF)
  - A 770 KAF reduction in the Lake Powell release can wipe out multiple years of "building a buffer"



Significant Questions Require More Discussion

- "Permanent" System Conservation
- Tribal ICS
- Intra-Arizona Forbearance
- Management of Excess Water

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Significant Questions Require More Discussion

For example:

- How will various programs (ICS, compensated and uncompensated system conservation) be allocated, prioritized and coordinated in achieving target conservation volumes?
- How will various programs be coordinated to avoid exceeding target conservation volumes and experiencing unintended consequences?
- How will ICS be "shared" among on-River Contractors, CAP and CAP Contractors?
- How will decisions regarding creation and release of ICS be coordinated?
- How will other users be protected from negative impacts of decisions?
- How will the concept of separate ICS programs be reconciled with the nature of the CAP unquantified contract?
- How will impacts on operations, maintenance schedules and water rates be addressed?

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Significant Questions Require More Discussion

- These questions involve significant operational, financial and policy considerations that go far beyond "working out the details"
- While these are important tools, there is no urgency to rush to implement them
- There is time to have the discussions needed and do things right rather than do things quickly
- The Excess Water Task Force established by the CAWCD Board is just one example of a more deliberative approach

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Summary

- Improved hydrology provides an opportunity to avoid shortages through 2020 and possibly beyond.
- Governor's Colorado River Work Group proposals generate significant and complex issues that require more discussion and analysis.
- There is time to have discussions appropriate to these complex issues.
- Collaborative discussion and analysis have been an effective process in Arizona to produce good and lasting solutions.
- The solutions we all want are available if we work together to achieve them.

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