

# RECLAMATION

*Managing Water in the West*

## CRFS Technical Meeting LC Operations Update

March 21, 2013



U.S. Department of the Interior  
Bureau of Reclamation

# Topics

- LC Operations Update
- Evaporation Project Update
- Minute 319 Overview

# Lower Basin Operations Water Year 2013

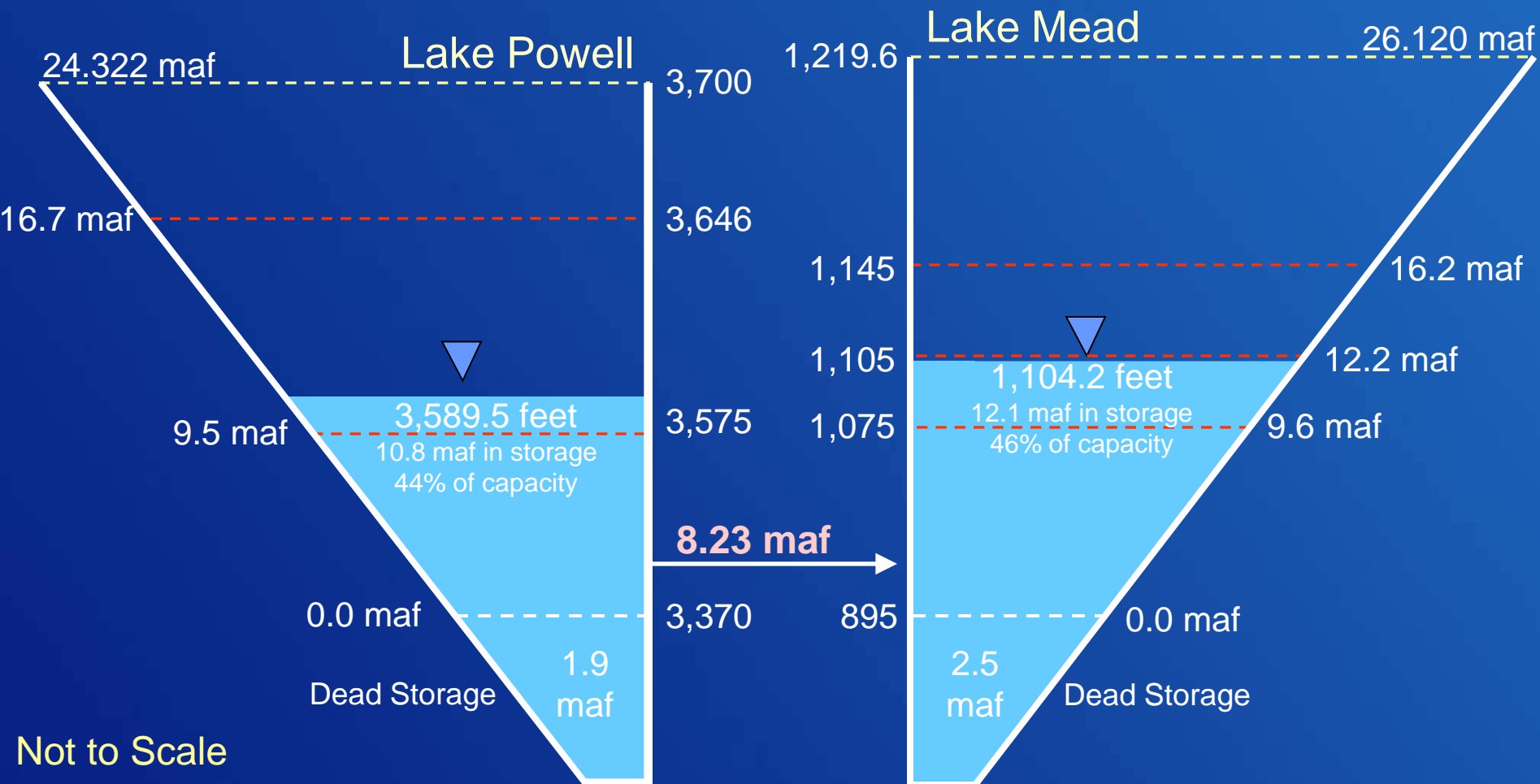
Lake Mead elevation at end of WY 2012: 1115.16 feet

- CY 2013 Water Use in the Lower Basin is currently projected to be slightly less than 7.5 maf
  - Mexico deliveries are expected to be reduced this year under provisions of Minute 319
- Currently projecting Lake Mead's surface water elevation decrease approximately 10.98 feet over course of WY
- Lower Basin temperatures have been slightly above average, precipitation slightly below average

# Water Year 2013 Projections

## March 2013 24-Month Study Most Probable Inflow Scenario

Projected Unregulated Inflow into Powell<sup>1</sup> = 5.31 maf (49% of average)



<sup>1</sup> WY 2013 unregulated inflow volume is based on the CBRFC outlook dated 3/4/13. Percent of average inflow is based on the 30-year period of record from 1981-2010.

# Lower Basin Side Inflows – WY/CY 2013<sup>1,2</sup>

## Intervening Flow from Glen Canyon to Hoover Dam

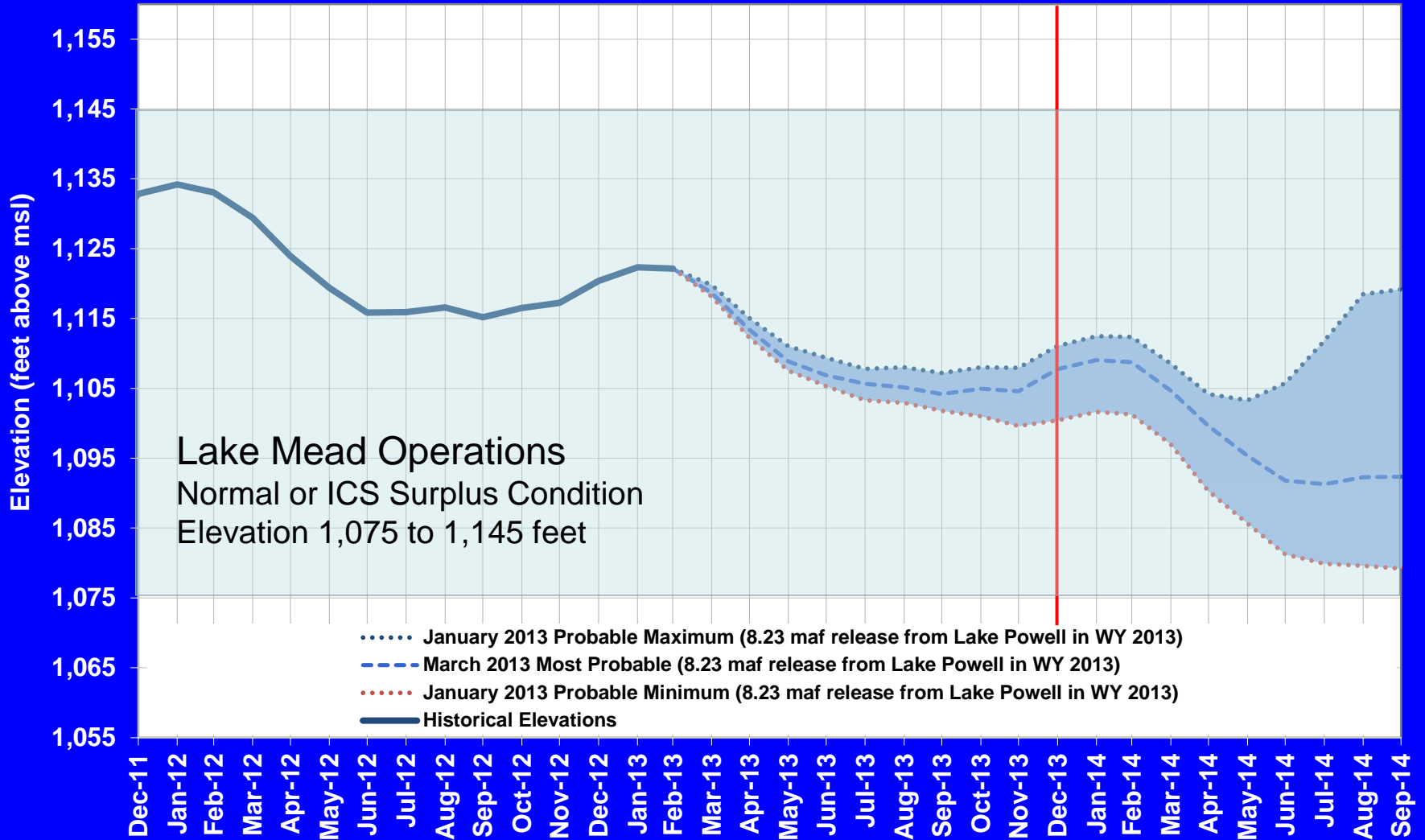
Month in WY/CY2013		5-Year Average Intervening Flow (KAF)	Observed Intervening Flow (KAF)	Observed Intervening Flow (% of Average)	Difference From 5-Year Average (KAF)
H I S T O R Y	October 2012	54	53	99%	-1
	November 2012	44	60	136%	+16
	December 2012	99	50	50%	-49
	January 2013	82	55	67%	-27
	February 2013	94	70	75%	-24
F U T U R E	March 2013	77			
	April 2013	81			
	May 2013	64			
	June 2013	32			
	July 2013	54			
	August 2013	109			
	September 2013	81			
	October 2013	54			
	November 2013	44			
	December 2013	99			
<b>WY 2013 Totals</b>		<b>870</b>	<b>785</b>	<b>90%</b>	<b>-85</b>
<b>CY 2013 Totals</b>		<b>870</b>	<b>819</b>	<b>94%</b>	<b>-51</b>

<sup>1</sup> Values were computed with the LC's gain-loss model for the most recent 24-month study.

<sup>2</sup> Percents of average are based on the 5-year mean from 2008-2012.

# Lake Mead End of Month Elevations

Projections from January and March 2013 24-Month Study Inflow Scenarios



# Probabilities of Occurrence of Event or System Condition

## Results from January 2013 CRSS Run<sup>1,2</sup> (values in percent)

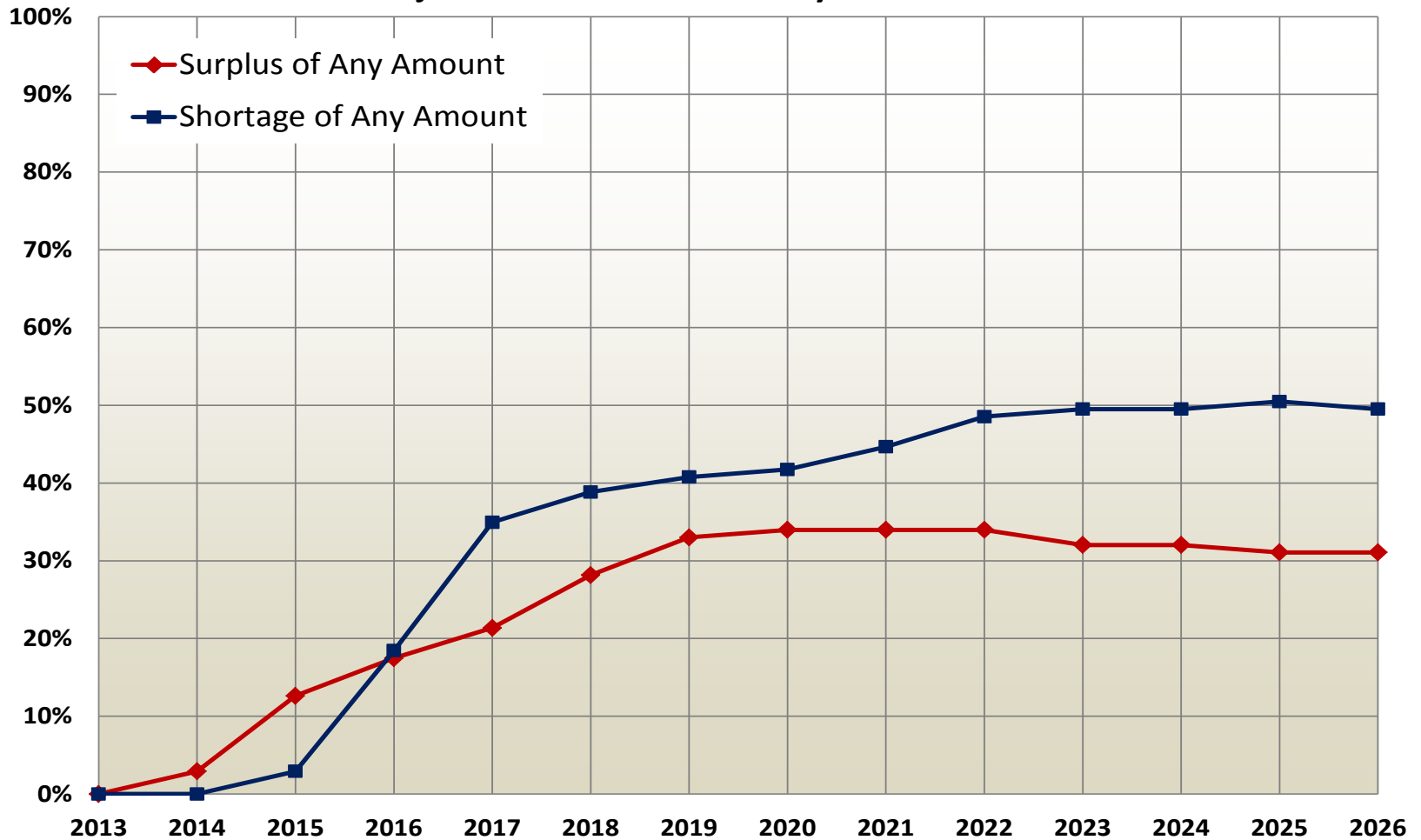
	Event or System Condition	2013	2014	2015	2016	2017
<b>Upper Basin – Lake Powell</b>	<b>Equalization Tier</b>	<b>11</b>	<b>30</b>	<b>33</b>	<b>38</b>	<b>42</b>
	<i>Equalization – annual release &gt; 8.23 maf</i>	10	30	33	37	39
	<i>Equalization – annual release = 8.23 maf</i>	1	0	0	1	3
	<b>Upper Elevation Balancing Tier</b>	<b>89</b>	<b>60</b>	<b>47</b>	<b>44</b>	<b>38</b>
	<i>Upper Elevation Balancing – annual release &gt; 8.23 maf</i>	0	0	3	18	22
	<i>Upper Elevation Balancing – annual release = 8.23 maf</i>	89	60	44	26	16
	<b>Mid-Elevation Release Tier</b> (annual release = 7.48 maf)	<b>0</b>	<b>10</b>	<b>19</b>	<b>10</b>	<b>15</b>
<b>Lower Elevation Balancing Tier</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>5</b>	
<b>Lower Basin – Lake Mead</b>	<b>Shortage Condition – any amount (Mead ≤ 1,075 ft)</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>18</b>	<b>35</b>
	<i>Shortage – 1<sup>st</sup> level (Mead ≤ 1,075 and ≥ 1,050)</i>	0	0	3	17	28
	<i>Shortage – 2<sup>nd</sup> level (Mead &lt; 1,050 and ≥ 1,025)</i>	0	0	0	1	7
	<i>Shortage – 3<sup>rd</sup> level (Mead &lt; 1,025)</i>	0	0	0	0	0
	<b>Surplus Condition – any amount (Mead ≥ 1,145 ft)</b>	<b>0</b>	<b>3</b>	<b>13</b>	<b>18</b>	<b>21</b>
	<i>Surplus – Flood Control</i>	0	0	2	4	5
	<b>Normal or ICS Surplus Condition</b>	<b>100</b>	<b>97</b>	<b>84</b>	<b>64</b>	<b>44</b>

<sup>1</sup> Reservoir initial conditions based on actual reservoir levels at end-of-day on December 31, 2012

<sup>2</sup> Hydrologic inflow traces based on resampling of the observed natural flow record from 1906-2008

# Lower Basin Surplus & Shortage through 2026

Probabilities of Lower Basin Surplus or Shortage  
Projections from the January 2013 CRSS Run<sup>1,2</sup>



<sup>1</sup> Reservoir initial conditions based on actual reservoir levels at end-of-day on December 31, 2012

<sup>2</sup> Hydrologic inflow traces based on resampling of the observed natural flow record from 1906-2008



# Additional Operational Data

(provisional year-to-date values)

- MX Excess Flows
  - 19,672 acre-feet
- Brock Reservoir Total Storage
  - 29,760 acre-feet
- Senator Wash Total Storage
  - 13,010 acre-feet



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# Real Time Evaporation At Lake Mead

- 5-Year cooperative project with the USGS
  - 3 years of data as of March 1st
- Report on first 2 years of data, in review
  - Possible inclusion for Nov 2013 CRFS
- Phase 2- Lake Mohave
  - Installation pending

# Minute 319 Overview

- Amendment to 1944 US-Mexico Water Delivery Treaty
  - Extension to provisions of Minute 318
    - Deferred delivery of Mexican allotment (2010 earthquake)
    - U.S. financial support for conservation projects in Mexico
- 5-year interim period (2013-2017)
- Bi-national cooperation to provide economic and environmental benefits through conservation programs and studies

# Minute 319 provisions

- U.S. to pay \$21M to IBWC for infrastructure and program funding in Mexico
- Environmental pulse flow of 105 kaf, monitoring programs, and restoration projects
- Creation of ICMA (Intentionally Created Mexican Allocation), option to convert to ICS
- Refinements to salinity accounting at NIB
- Mexico shares in shortage and surplus with U.S.
- Water conservation projects and studies in Mexico

An aerial photograph of a large concrete dam and reservoir. The dam is a curved structure with several spillways. The reservoir is a deep blue-green color, surrounded by rugged, brown mountains. The sky is clear and blue.

# Lower Colorado River Operations

For further information:  
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