

RECLAMATION

Managing Water in the West

**Development of Lower Basin Shortage
Guidelines and Coordinated
Management Strategies for Lake
Powell and Lake Mead Under Low
Reservoir Conditions**

Public Meetings



U.S. Department of the Interior
Bureau of Reclamation

Shortage Guidelines and Management Strategies

Public Meeting

- Welcome and Introductions
- Purpose of Meeting
- Background, Need, Setting
- Process
- Key Concepts
- Questions and Comments

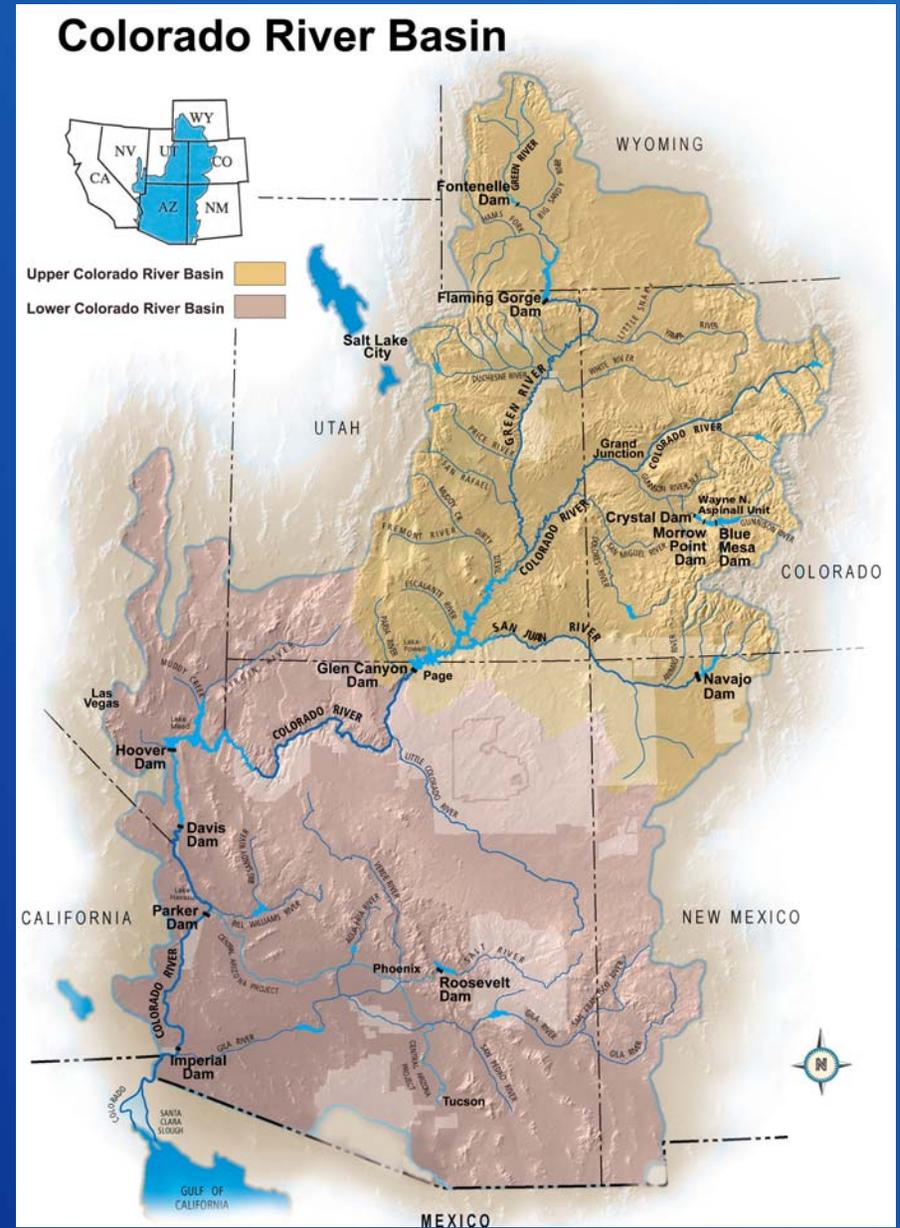
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Purpose of this Meeting

- To solicit comments on the formulation of alternatives for the development of:
 - Shortage guidelines for the Lower Basin (circumstances under which less than 7.5 million acre-feet would be delivered annually to the Lower Division States (Arizona, California, and Nevada))
 - Coordinated management strategies for the operations of Lake Powell and Lake Mead under low reservoir conditions

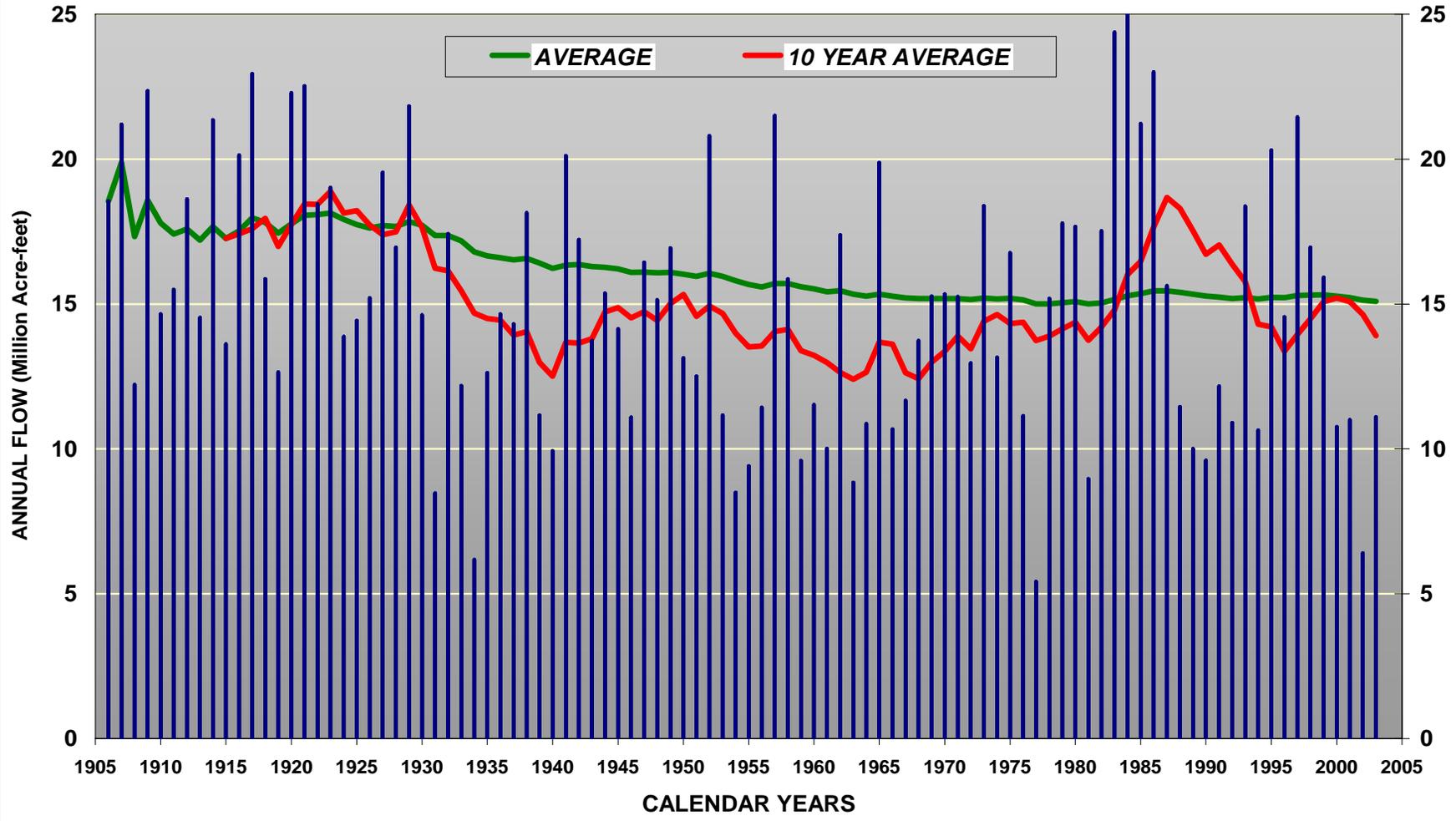
Colorado River Basin Hydrology

- 16.5 million acre-feet (maf) allocated annually
- 13 to 14.5 maf of consumptive use annually
- 60 maf of storage
- 15.1 maf average annual “natural” inflow into Lake Powell over past 100 years
- Inflows are highly variable year-to-year



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NATURAL FLOW
Colorado River at Lees Ferry, AZ
Calendar Year 1906-2003



1996 to 2003: Provisional data, subject to change.

Colorado River Basin Drought Water Year Unregulated Inflow to Lake Powell, 1999-2005

- 1999 109 % of average
- 2000 62 % of average
- 2001 59 % of average
- 2002 25 % of average
- 2003 51 % of average
- 2004 49 % of average
- 2005 105 % of average

Colorado River Basin Drought

- Inflows from 2000 through 2004 were the lowest in any five-year period in our 100-year historical record
- Inflows in 2005:
 - 105% of average in Upper Basin
 - Over 200% of average in Lower Basin
- System is now 59% full (was over 90% full in 1999)
- 2005 “rolled back” one year of the drought
- It is not unusual to have a few years of above average inflow during a sustained drought (e.g., the 1950’s)

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Setting and Need

- **Drought conditions have impacted storage in the Colorado River system**
- **Water use continues to increase**
- **The Secretary of the Interior may declare a shortage condition in the Lower Basin**
 - Delivery of less than 7.5 maf to Arizona, California, and Nevada
- **To date, there has never been a shortage in the Lower Basin and there are no shortage guidelines**
- **Guidelines will:**
 - Inform the Secretary's decision in the Annual Operating Plan process
 - Provide a degree of certainty to the water users in the Lower Basin

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Process

- In 2004, the Secretary challenged the Basin States to develop a drought mitigation plan for the Colorado River Basin
- Basin States have been studying potential operational scenarios to lessen the impacts of drought conditions using Reclamation as a technical resource
- In May 2005, the Secretary directed Reclamation to engage in a process to develop guidelines for Lower Basin shortages and the operation of Lakes Powell and Mead under low reservoir conditions
- The process must be completed by December 2007

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Process

- **Public Consultation** (June 15 – August 30, 2005)
 - Solicited comments on content, format, mechanisms and analysis to be considered to address drought and other management challenges
 - Comments received:
 - 149 unique comments (posted on Reclamation web site)
 - Considering these comments in our project planning efforts

Process

- Public Scoping Period (September 30 – November 30, 2005)
 - Initiating environmental review pursuant to NEPA
 - Holding public scoping meetings
 - Soliciting comments on the development of alternatives for guidelines and strategies
 - Comments that are received will:
 - Advise alternatives development and analysis
 - Be summarized in a report made available in February, 2006

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Schedule

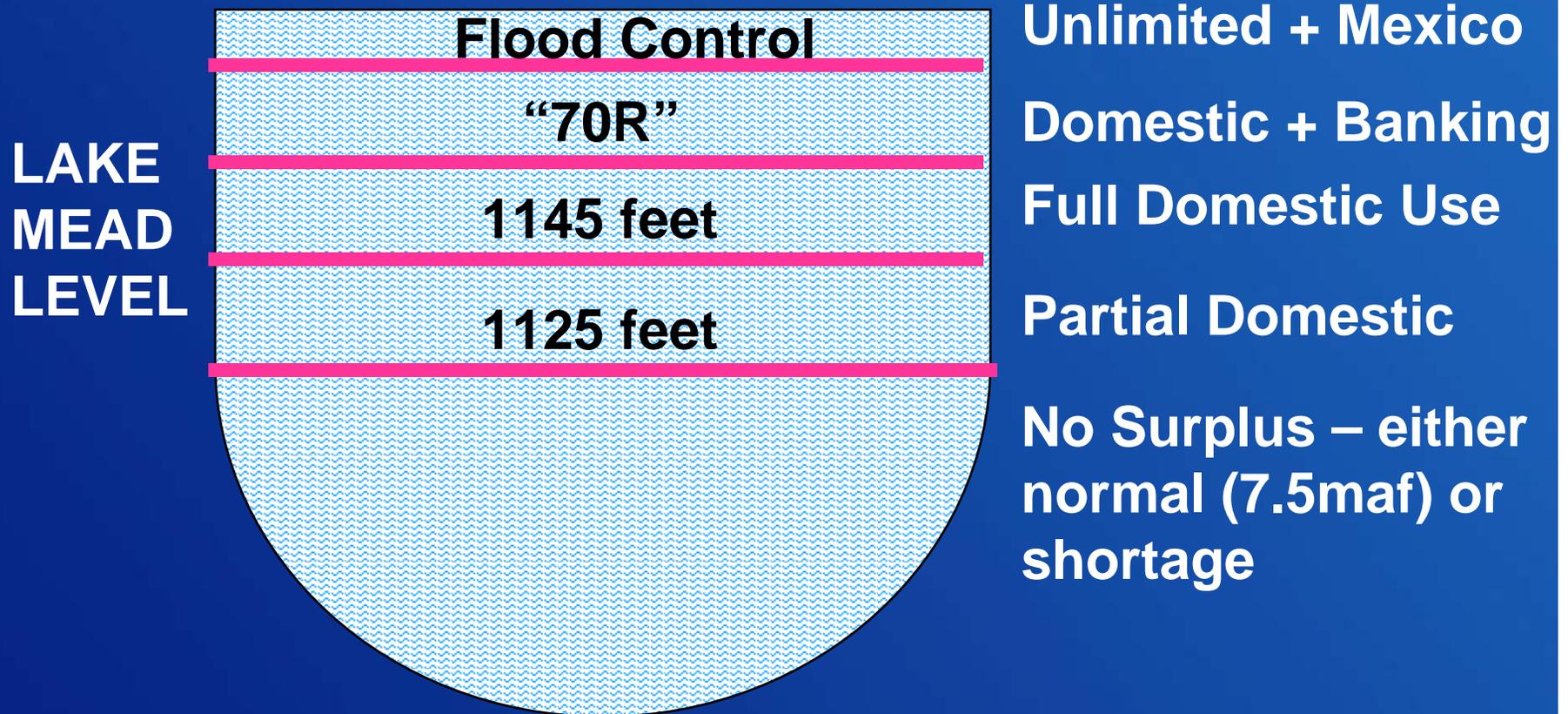
- **JUN 2005** – FR notice initiating public process
- **SEP 2005** – FR notice to initiate NEPA and scoping of issues and alternatives
 - 60-day comment period
 - Public meetings
 - Scoping report
- **DEC 2006** – DEIS available to public
- **OCT 2007** – FEIS available to public
- **DEC 2007** – Record of Decision

Key Concepts

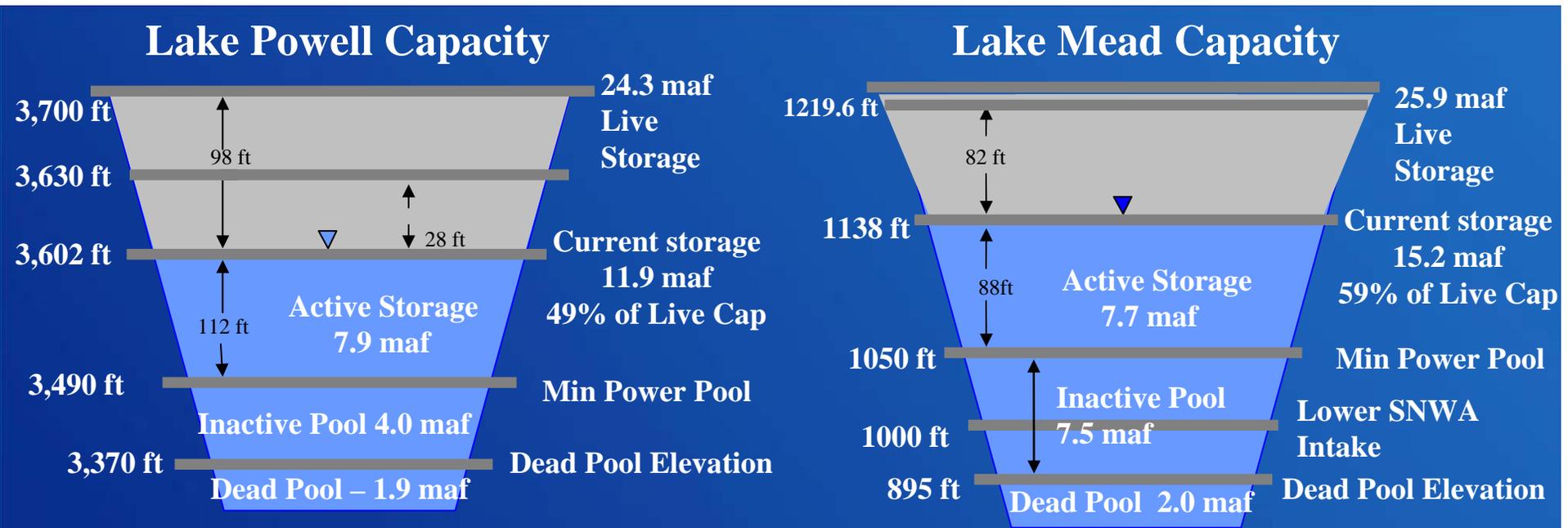
- Operating Guidelines
- Coordinated Reservoir Management
- Shortage in the Lower Basin

Interim Surplus Guidelines

(example of operating guidelines)



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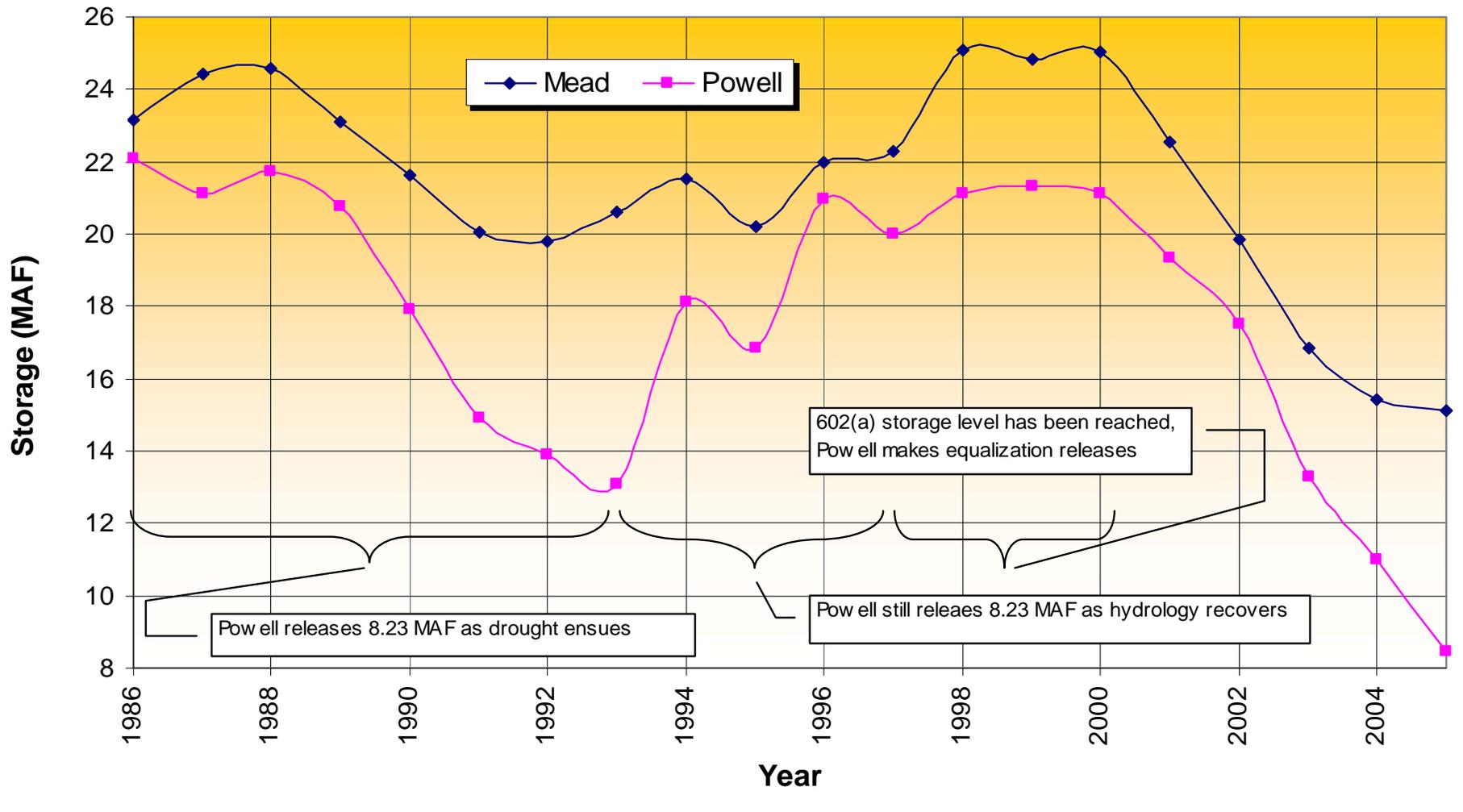


Key Operating Principles

- 1 – Minimum 8.23 maf objective release from Lake Powell
- 2 – Storage equalization when storage in Lake Powell is greater than Lake Mead
- 3 – Meeting downstream demands from Lake Mead
- 4 – Flood control criteria for Lake Mead

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Coordinated Operations Example



Mass Balance at Lake Mead

- Given current demands in the Lower Basin (including Mexico), and minimum objective release from Lake Powell, Lake Mead storage will continue to decline
 - Inflow = 9.0 maf
(release from Powell + side inflows)
 - Outflow = - 9.5 maf
(LB and Mexico apportionments + downstream regulation, gains and losses)
 - Mead evaporation loss = - 0.8 maf
 - Balance = - 1.3 maf

Shortage in the Lower Basin

- In the Lower Basin, the Secretary as Watermaster, may declare a shortage – delivery of less than 7.5 maf to the Lower Division States (Arizona, California, and Nevada)
- To date, there has never been a shortage in the Lower Basin and there are currently no shortage guidelines
- Trade-offs when a shortage exists:
 - Magnitude
 - Duration

Questions?

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Comments

- Submit comments/suggestions on:
 - Formulation of alternatives for the development of:
 - Shortage guidelines for the Lower Basin (circumstances under which less than 7.5 maf would be delivered annually to the Lower Division States (Arizona, California, and Nevada))
 - Coordinated management strategies for the operations of Lake Powell and Lake Mead under low reservoir conditions
 - Other issues or factors that need to be considered in study

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Comments

- submit by mail, faxogram or e-mail
- Wednesday, November 30, 2005, close of business

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Project website: <http://www.usbr.gov/lc/riverops.html>



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