

Flow Information Meeting

September 29, 2005

BPA Rates Hearing Room

FOR DISCUSSION PURPOSES ONLY

II. Overview of Water Supply

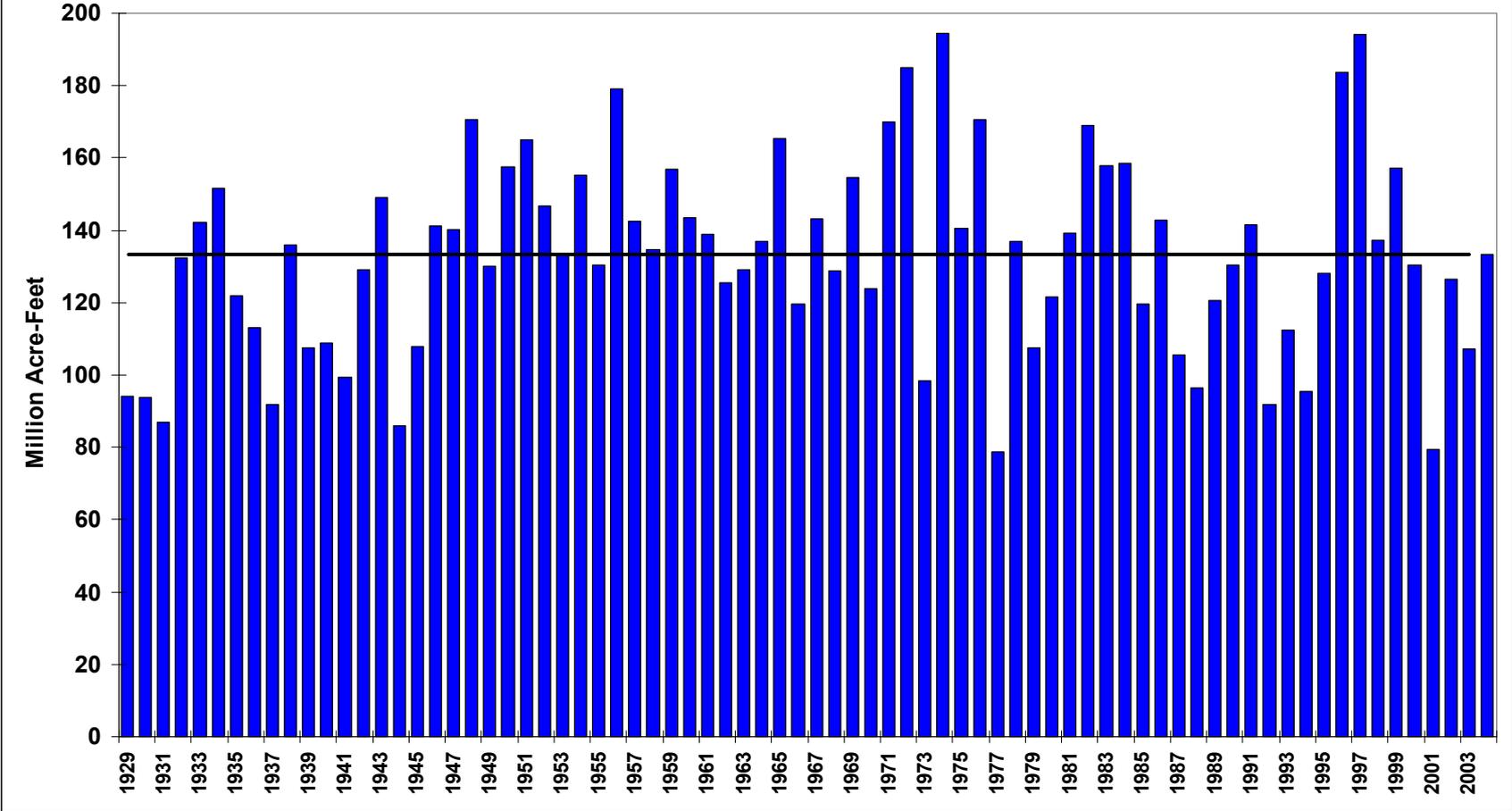
Columbia River Basin



- Corps of Engineers Dams
- Dams owned by Others
- △ Bureau of Reclamation Dams

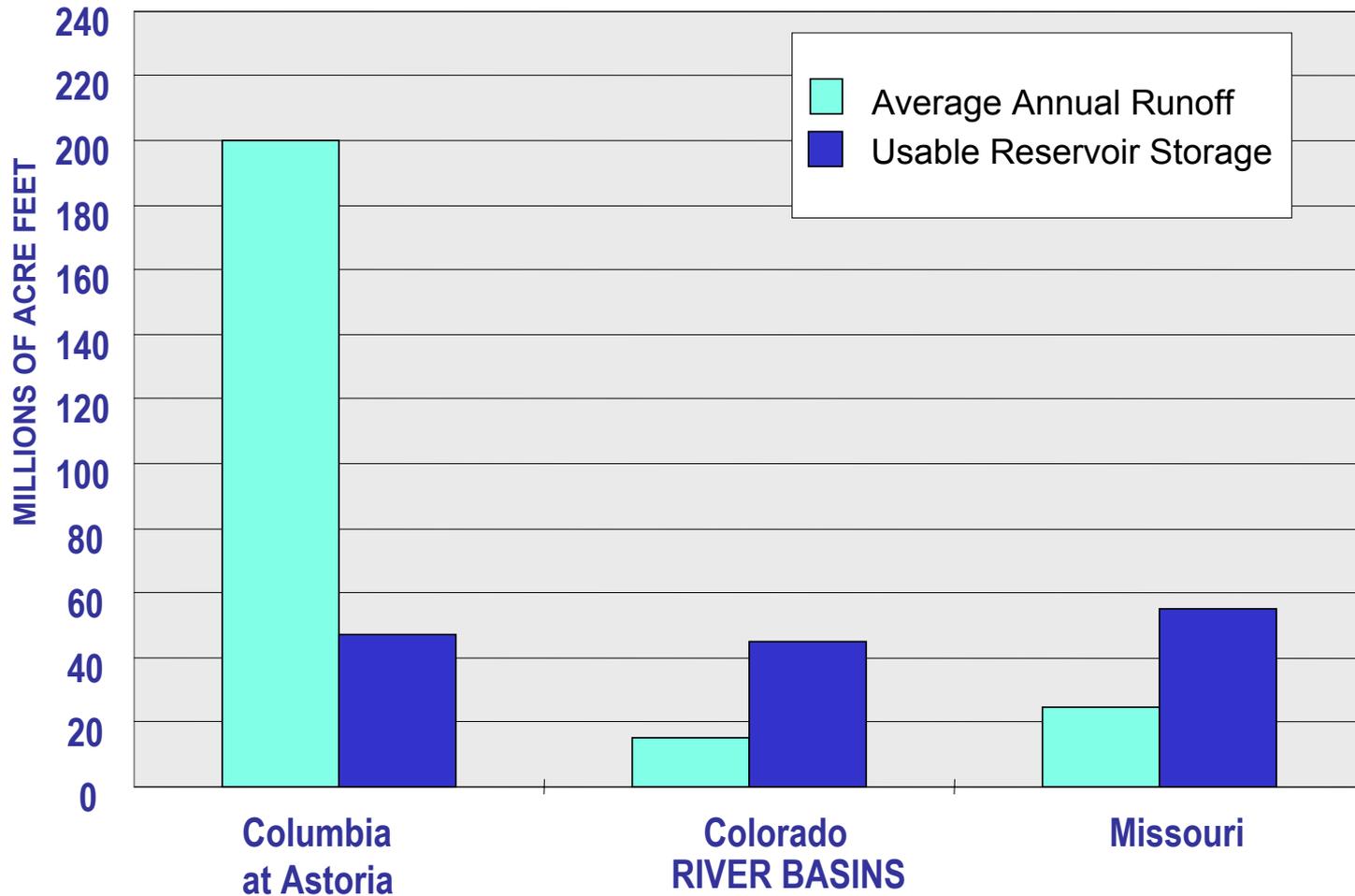
FOR DISCUSSION PURPOSES ONLY

October - September Volume Runoff: Columbia River at The Dalles
(1929-2003 Average is 133 MAF)



FOR DISCUSSION PURPOSES ONLY

Average Annual Runoff and Usable Reservoir Storage Major Western River Basins



FOR DISCUSSION PURPOSES ONLY

Federal Columbia River Power System Storage and Run-of-River Dams

Storage Projects

- Operating range up to 225 feet
- Active storage 16.5 million acre-feet

Run-of-River Projects

- Operating range up to 5 feet
- No active storage

FOR DISCUSSION PURPOSES ONLY

Columbia River Basin



Total active storage
FCRPS: 16.5 MAF
Treaty storage: 15.5 MAF
Other: 9.7 MAF

FOR DISCUSSION
PURPOSES ONLY



Salmon-Recovery Hydro Actions

- **Flow Augmentation:** Increases spring and summer river flows to enhance conditions for juvenile salmon and steelhead outmigrants. Shifts flows from fall/winter to spring/summer.
- **Run-of-River Reservoir Level Constraints:** Restricted operating ranges at run-of-river reservoirs increases velocities and reduces water particle time, reduces passage delays, both potentially improving conditions for outmigrants.
- **Operations for Mainstem:** Encourage low level spawning below BON/PRD, protect redds through emergence. Flow constraints during spawning and incubation periods reduce risk of subsequent dewatering of salmon redds.
- **Spill:** Provides a non-turbine and non-mechanical bypass system passage route for downstream migrants.

III.

Overview of Current Flow Operations

OPERATIONS TIMELINE

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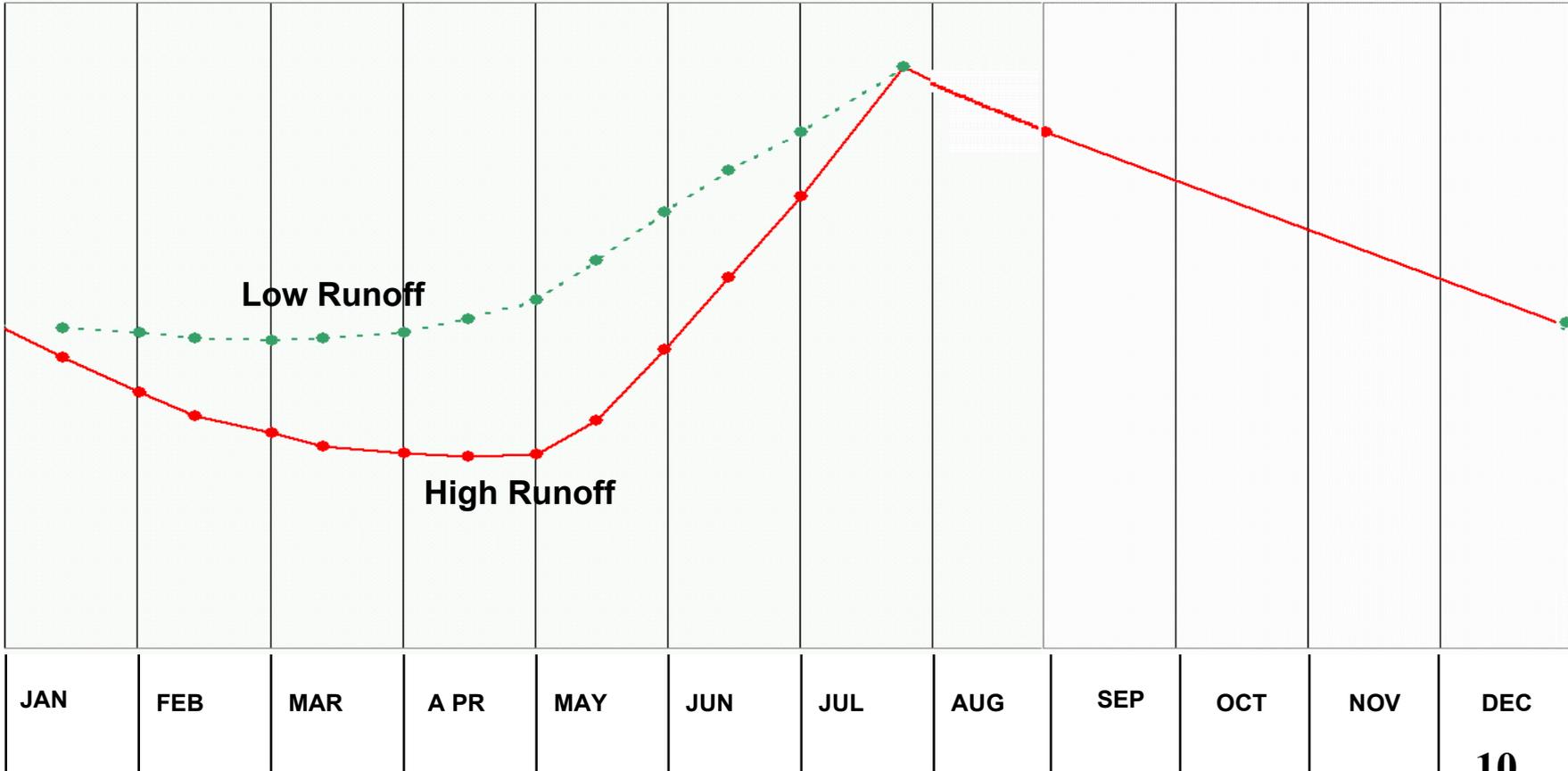
Winter Draw Down for Flood Control and Chum Flow

Spring Flow Augmentation and Reservoir Refill

Summer Flow Augmentation and Draft to Draft Limit

Winter Drawdown for Flood Control and Chum Flow

GENERAL FLOOD CONTROL OPERATIONS AT A STORAGE DAM



**FOR DISCUSSION
PURPOSES ONLY**

OPERATIONS TIMELINE

