

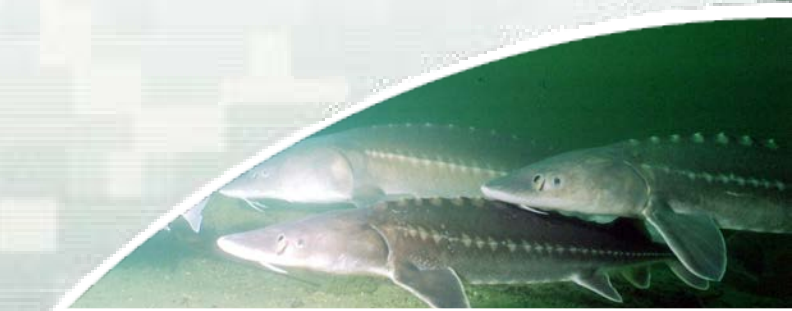
Overview of Columbia Basin Water Management

Walla Walla District and Portland District Navigation Meeting
Port of Morrow SAGE Center

Karl Kanbergs, acting RCC Chief
Columbia Basin Water Management
May 2015

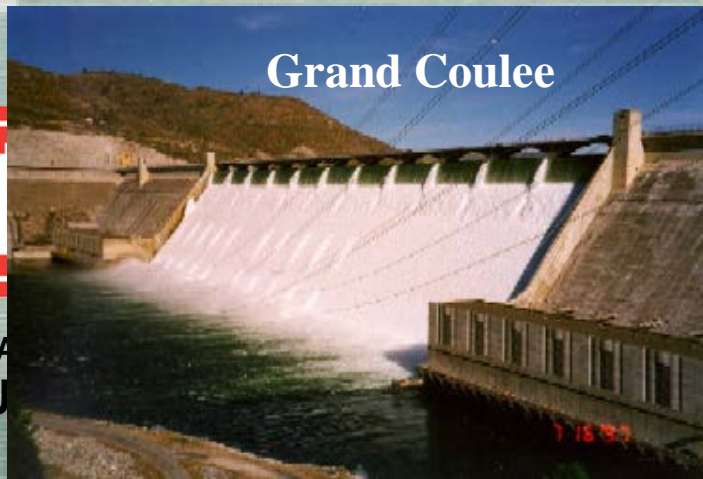
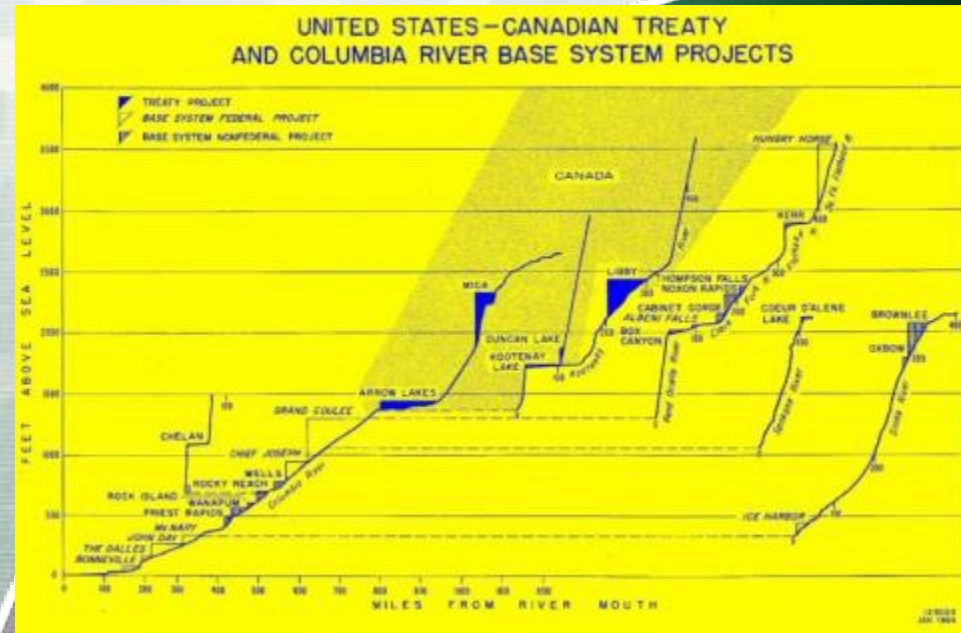


US Army Corps of Engineers
BUILDING STRONG®



Columbia is the most powerful river in North America

- Hydropower is measured by river flow times change in elevation (called “head”)
- St. Lawrence and Mississippi have more flow, but much less head
- Grand Coulee has twice the head of Niagara Falls



US A
BU

Columbia River Basin

- The Columbia River Basin is approximately 260,000 square miles
- Average annual runoff of about 200 million acre-feet; 4th largest river in North America in terms of runoff
- Average flow of about 275,000 cfs; varies from 36,000 to 1,240,000 cfs
- Most hydropower capacity (~37 GW) in North America

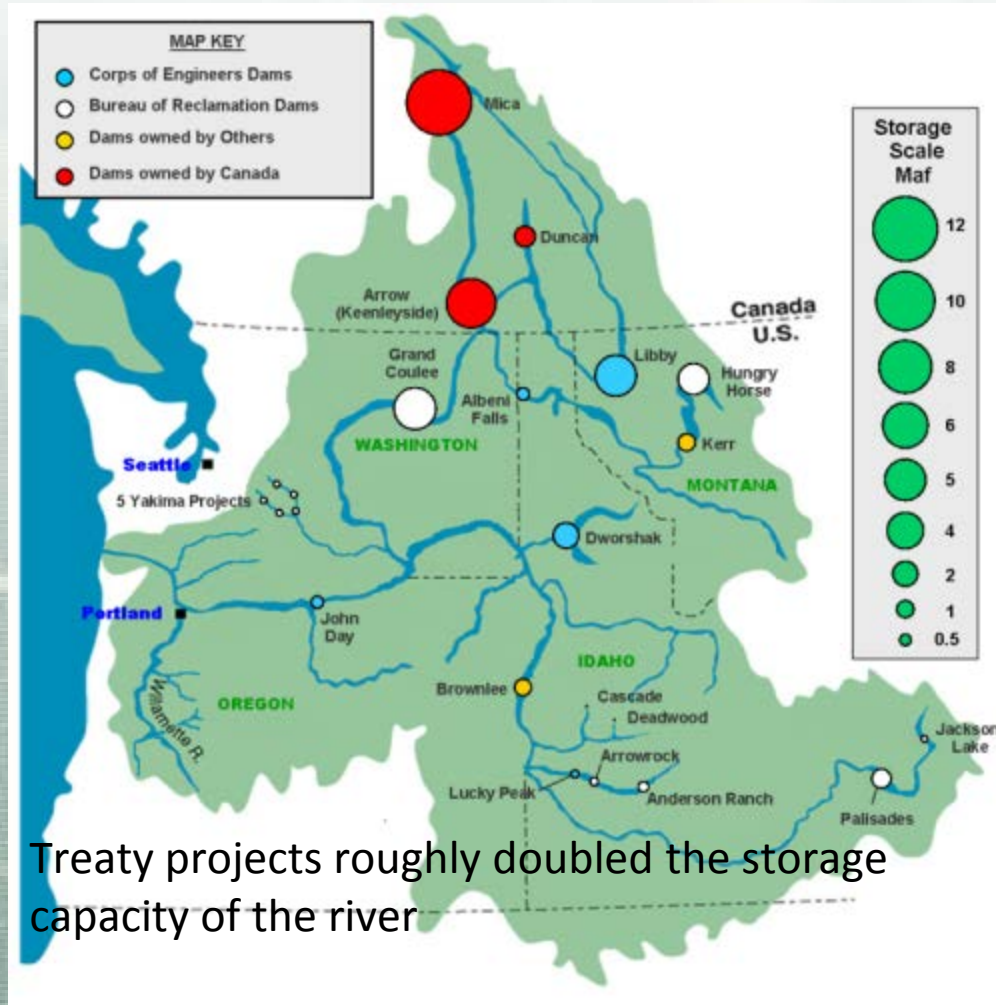


The Columbia River Basin

- Multiple purposes and interests
 - Flood Risk Mitigation
 - Ecosystem-based Function
 - Hydropower
 - Water Supply
 - Recreation
 - Navigation
 - Cultural Resources/Tribes
- Many laws and regulations work to strike a balance among these interests



The Columbia River Basin



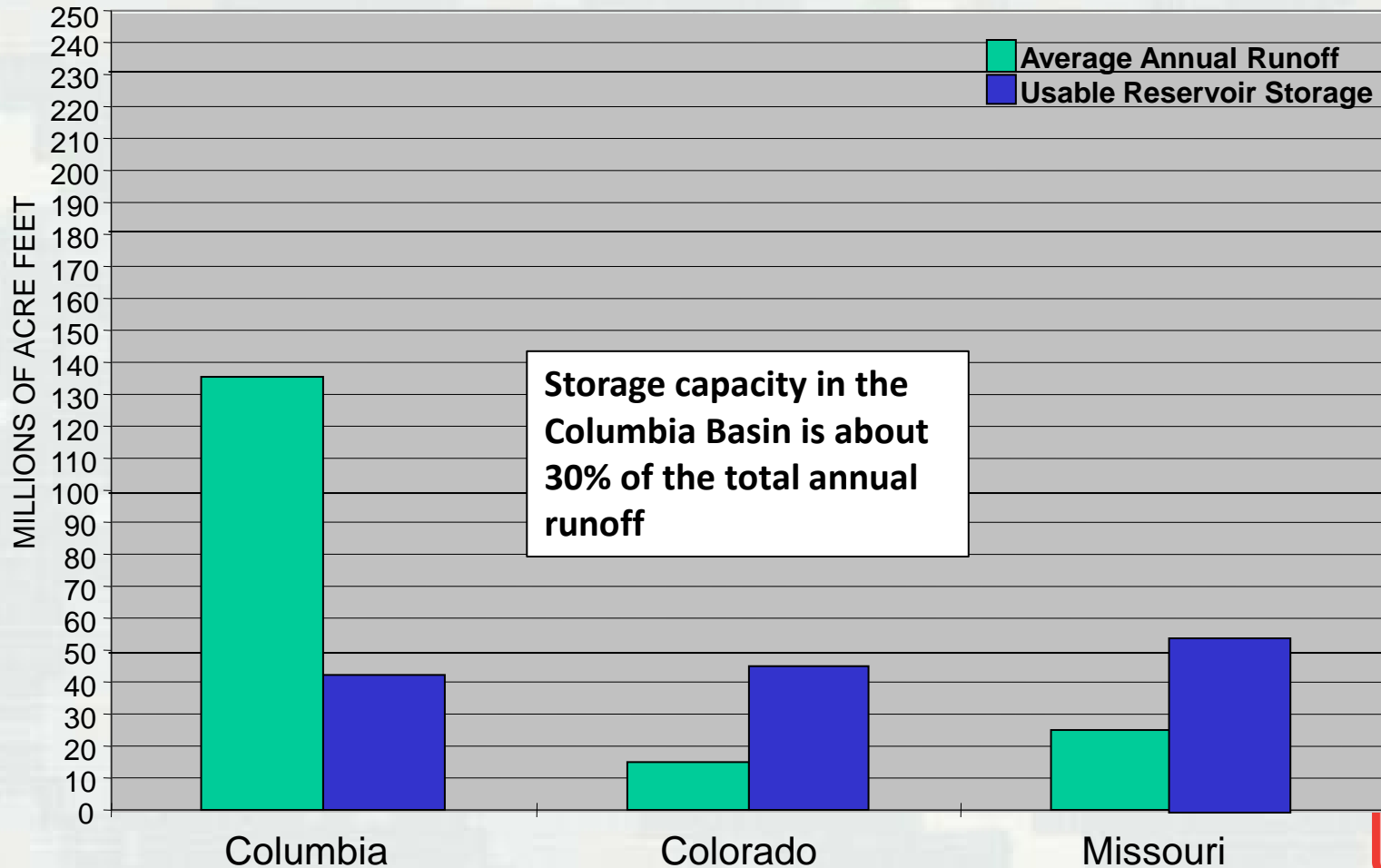
- Treaty projects roughly doubled the storage capacity of the river



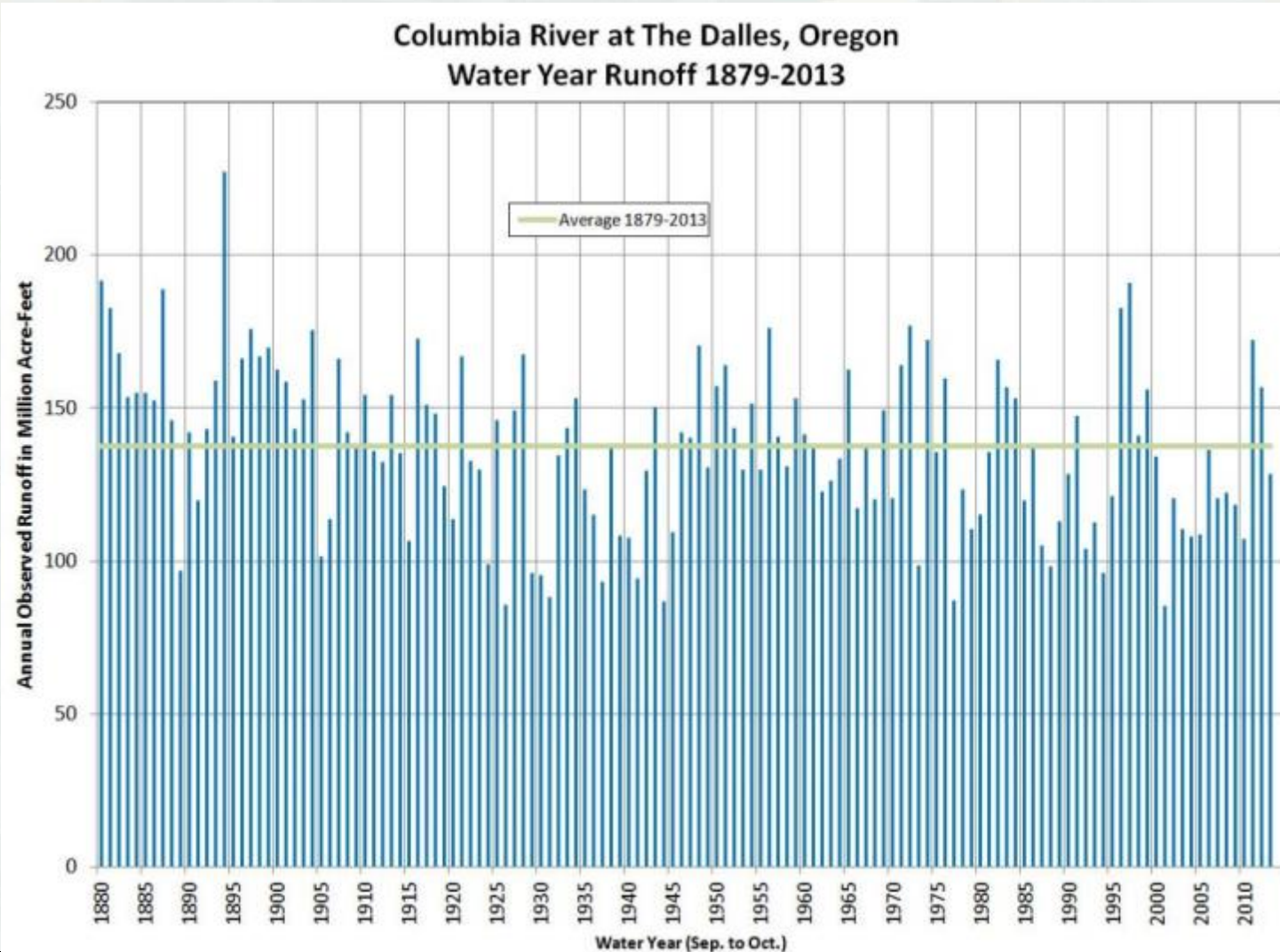
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Comparison of Major U.S. River Basins

Columbia Basin Reservoir Storage Limited



Highly Variable Annual Runoff



Fish and Wildlife

Endangered Fish Species



Hydropower



- 21 Corps hydroelectric dams produce 12,900 MW
- Total Federal Columbia River Power System produces 20,500 MW
- Hydropower supplies ~60% of regions power



Navigation

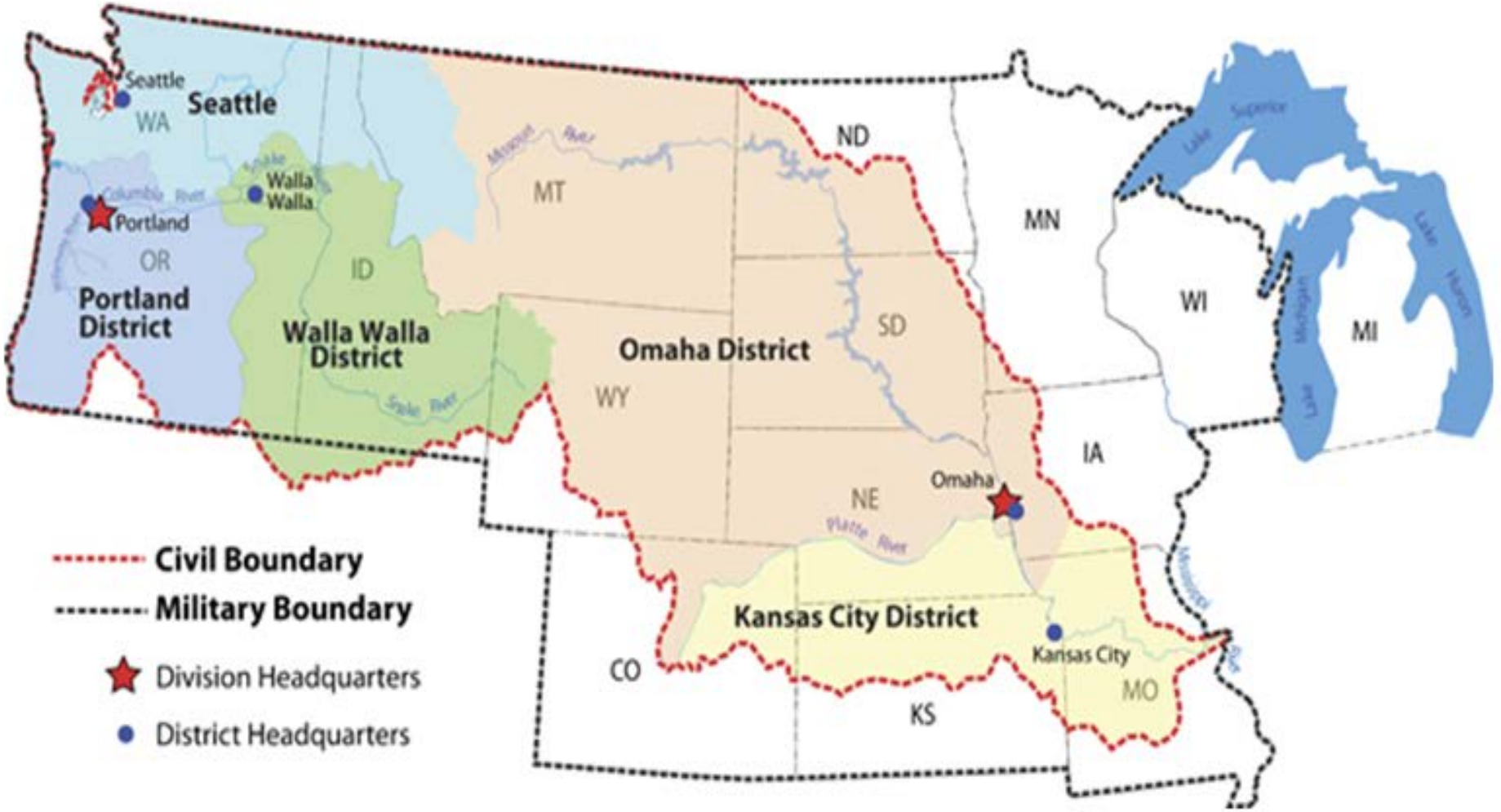
Columbia River:

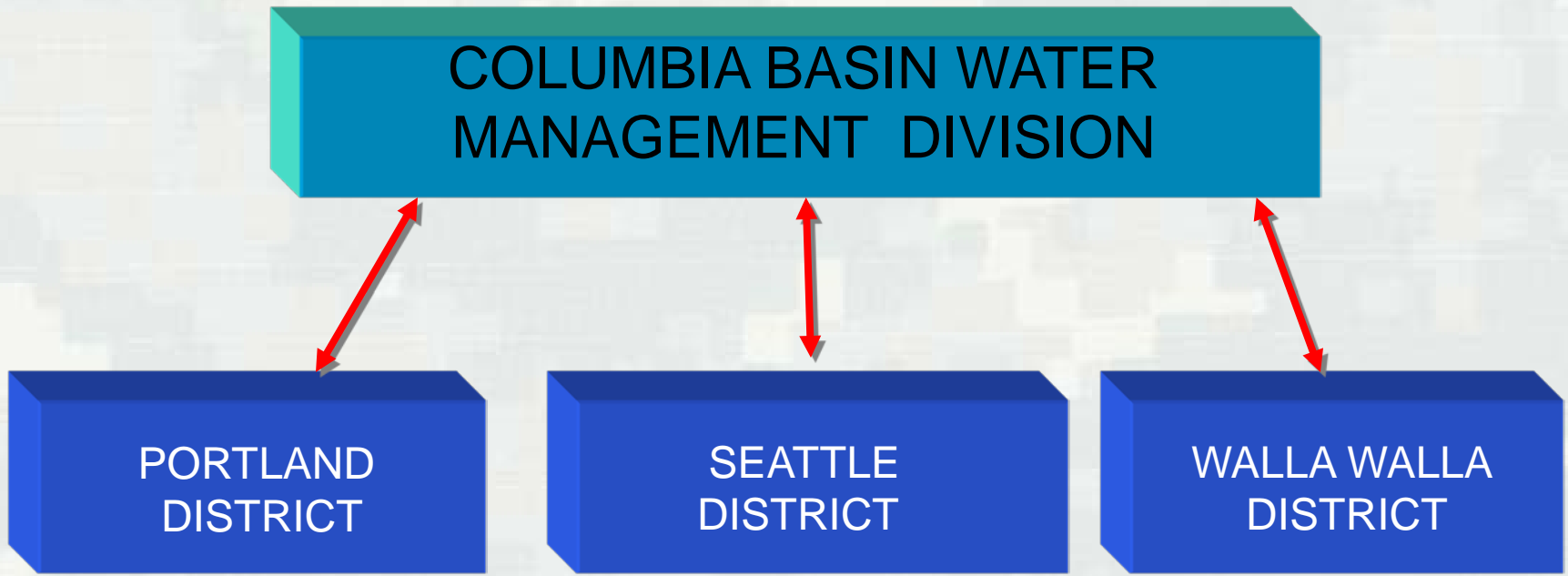


- Serves 36 ports and carries 40% of U.S. wheat
- More than 485 miles of navigable water
- Transports 35 million tons of cargo each year
- Export & import traffic exceed \$12 billion annually
- Deepest Corps lock is John Day Lock at 110 feet



Northwestern Division





- Division focus is on system and mainstem Columbia regulation plus Columbia River Treaty and coordination with Canada
- District focus is on tributaries to Columbia and technical support
- Functions as an interdependent regional team
- Well integrated with other functions like Emergency Management for crisis response



Special Operations Coordination



- Flows, TW Elevation, FB elevation, spill?, turbines?
- Fish impacts/Biop/Court Order?
- Conflicts with other operations
- Safety considerations
- Seasonal timing
- Contingencies and unexpected events, etc.



WATER MANAGEMENT DIVISION

--NWD WM Division Chief, Steve Barton

**-- RESERVOIR CONTROL CENTER
(RCC Chief Julie Amman)**

Reservoir regulation team (5)

Karl Kanbergs (lead)

Greg Bowers

John McCoskery

Michelle Yuen

Steve Burrell

Fish Team (2)

Water Quality Team (2+)

Outage Coordinator (1)

**-- HYDROLOGIC ENGINEERING & POWER BRANCH
(HEPB, Chief Bill Proctor)**





RCC MISSIONS :

**Flood Risk Management
Navigation
Hydropower
Water Quality
ESA Protection/Wildlife
Recreation**

END USERS:

**Public
District Regulators & Offices
BPA
Bureau of Reclamation
Northwest River Forecast Center
NOAA Fisheries
US Fish and Wildlife Service
States and Tribes
Treaty Partners
Non-Federal Dams
Navigation interests**



Questions?

