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Northwestern Division



Welcome to the Mekong River Commission

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of Engineers, Northwestern
Division



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Agenda



- U.S. Army Corps of Engineers and Northwestern Division Overview
- Columbia River Basin
- Missouri/Mississippi River Basin



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Civil Works Divisions & Districts



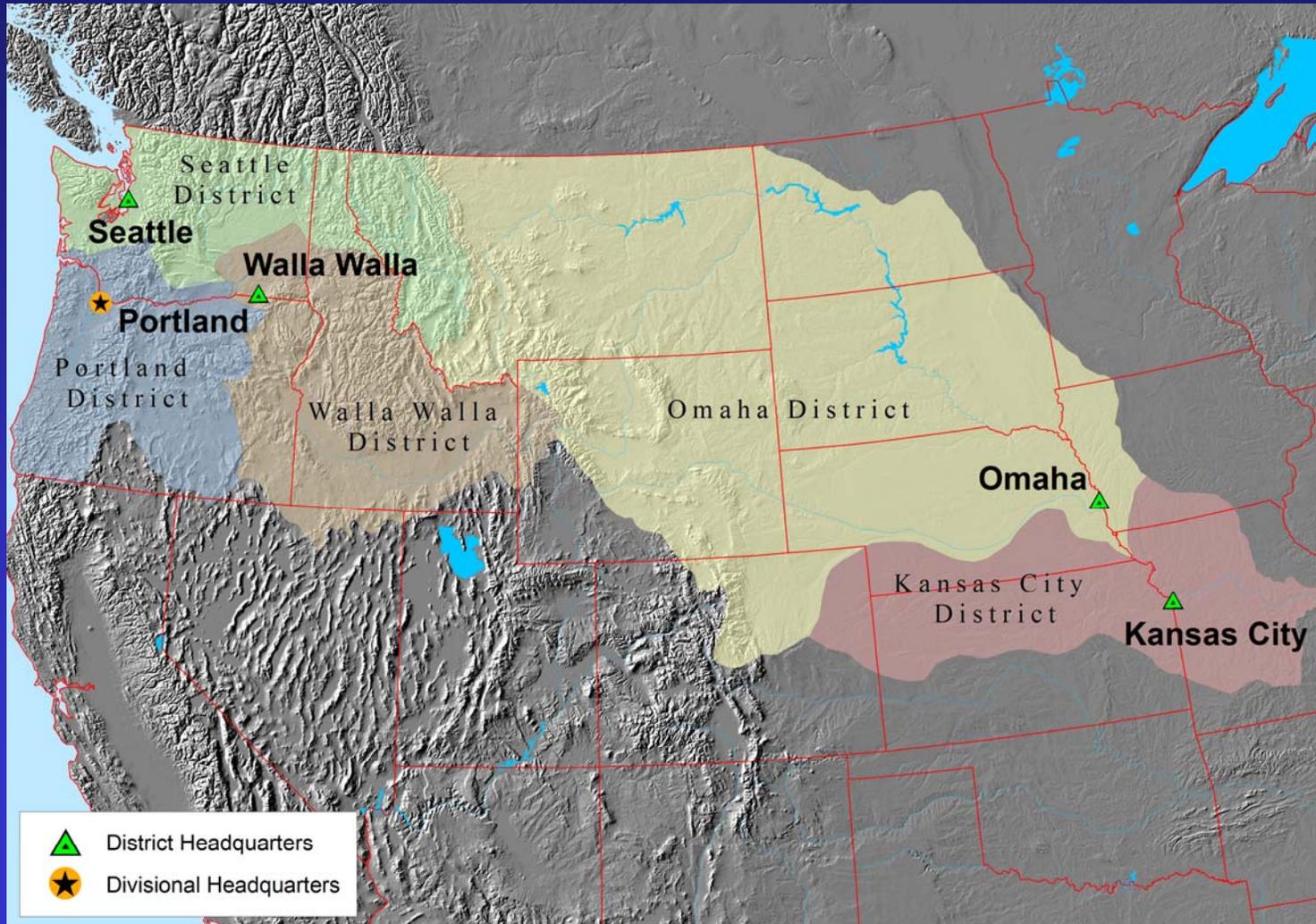


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Overview





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Background



- Why is U.S. Army involved in water resources?
 - ◆ 1775 – Coastal fortifications- during revolution
 - ◆ Rivers and Harbors Act of 1890 and 1899
 - Corps leads development of navigable waters for commerce and national security
 - ◆ Early 1900s: Different Flood Control Acts
 - Hydropower for economic development and national security
 - Flood control focus for saving lives and property
 - ◆ Critical national security infrastructure
 - ◆ Balanced approach to water resource development



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Water Management



Columbia River Basin



2 Countries

4 States

Missouri River Basin



10 States



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Columbia River Overview



■ Columbia River Treaty Principles

- Focus on sharing benefits
- Power and flood control focus
- Other considerations such as fisheries addressed through mutual agreement
- Extensive international collaboration

■ U.S. Federal Columbia River Power System Principles

- Maximum overall benefits to region
- Use regional approach
- Balance competing demands



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WHY DID THE GOVERNMENTS WANT A TREATY?



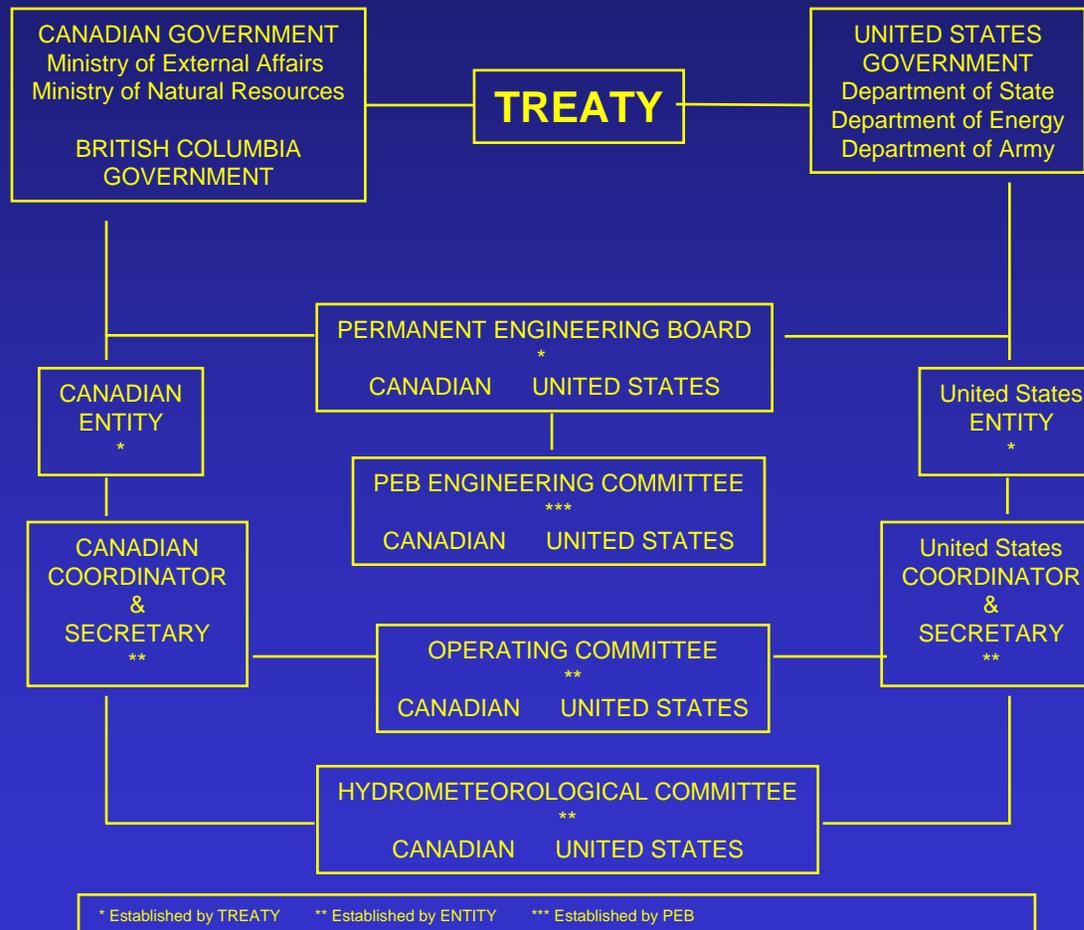
- Flood of 1948 required more Flood Control
- Canada has 15% of basin area, but 30% of 190 million acre feet (Maf) average annual flow @ The Dalles
- 50% of worst Columbia flood (1894) flow came from Canada
- Flow at US/Canada border ranges from 14,000 to 555,000 cfs
- Optimize US operations to realize the benefits of the Canadian storage





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Columbia River Treaty Organization





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WATER MANAGEMENT DIVISION

PORTLAND
DISTRICT

SEATTLE
DISTRICT

WALLA WALLA
DISTRICT

- Division focus is on system and mainstem aspects
- District focus is on tributaries and technical support
- Functions as an interdependent regional team
- Well integrated with other functions like Emergency Management for crisis response



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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

Missouri River

- ◆ Transports 8 million tons of cargo annually
- ◆ 735-mile long Bank Stabilization and Navigation Project - Sioux City to St. Louis
- ◆ Channel maintenance supplemented by two Corps river fleets



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Hydropower



- In Columbia Basin, 21 hydroelectric dams produce 12,900 MW.
- In Missouri Basin, 8 hydroelectric dams with 2,614 MW of capacity.





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Fish / ESA





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Recreation



- Corps projects in NWD host more than 46 million visitors annually.





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Flood Damage Reduction



- NWD projects prevented \$32 billion in cumulative damages
- Columbia Basin drains 259,000 square miles
- Missouri Basin drains 539,000 square miles
- Flood control space ranges from 25% of Columbia's seasonal volume to 200% of Missouri's seasonal volume.



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Mississippi/Missouri River Basin



Drains 41% of Continental U. S.

Average Flow = 640,000 cfs

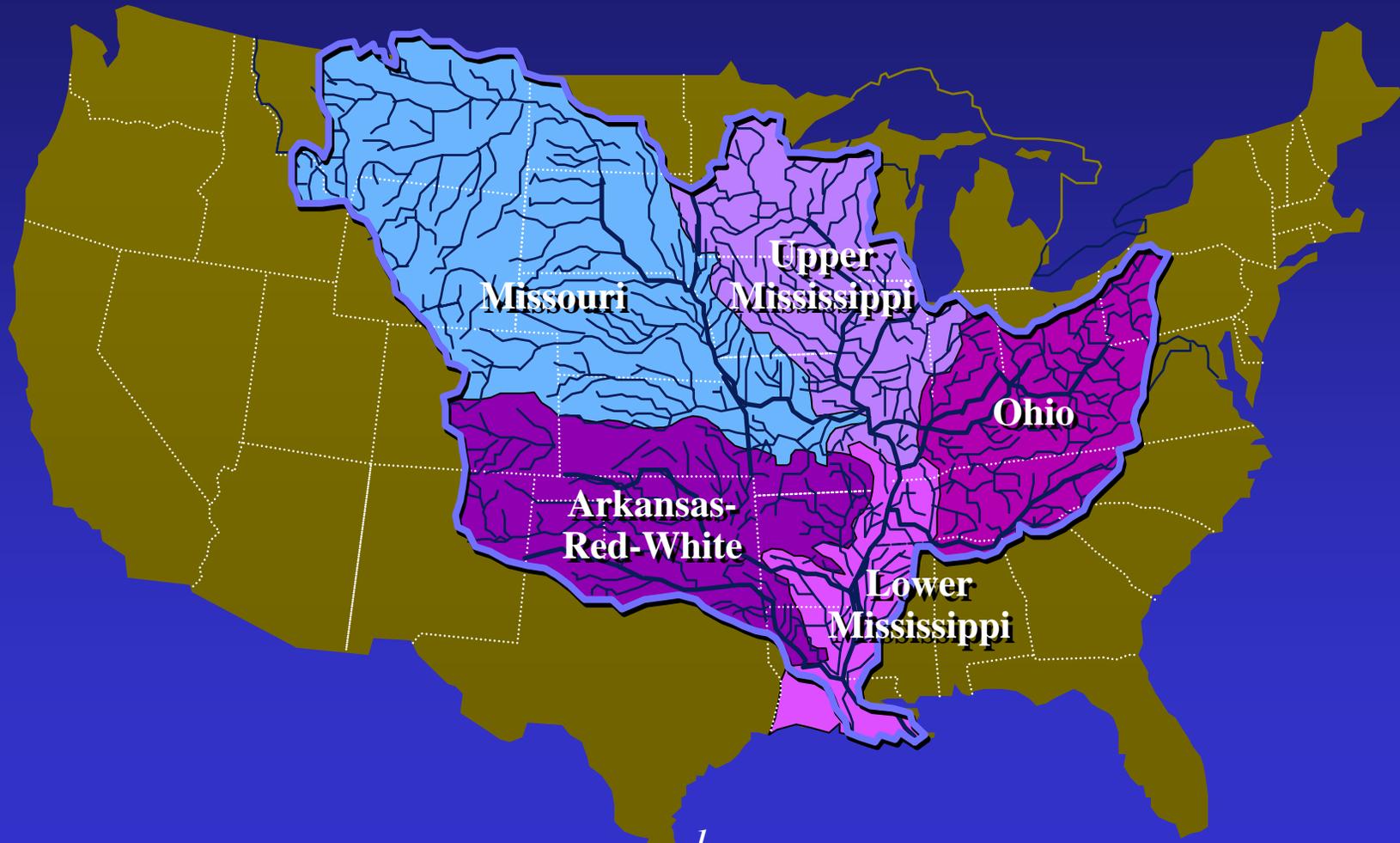
Suspended Sediment Load = 180 million yd³/yr ~ 50% of U.S. Rivers



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Purpose



1

GULF OF MEXICO



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Missouri River Mainstem Reservoir System



Congressionally Authorized Project Purposes

Flood Control
Navigation
Hydropower
Irrigation
Recreation
Water Supply
Water Quality
Fish and Wildlife
(Including endangered species)

Bank Stabilization and Navigation Project
Sioux City, IA – St. Louis, MO



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Missouri River Basin



- Very large reservoir storage capacity
- Managed to meet multiple purposes, including three major endangered species
- Multiple stakeholders, very engaged
- Upstream and downstream interests quite different
- Major issues include:
 - ◆ Water supply and drought management
 - ◆ Recovery of endangered species
 - ◆ Navigation
 - ◆ Cultural and tribal resources
 - ◆ Climate variability



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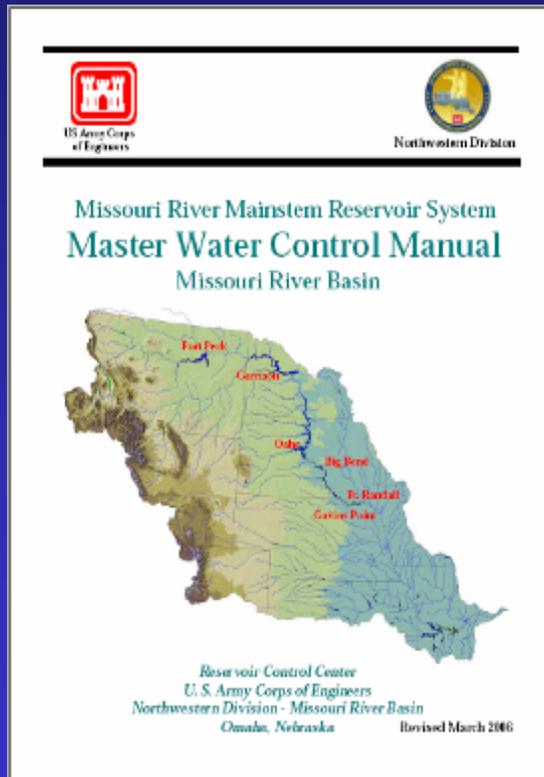
Gavins Point Dam





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Missouri River Mainstem Reservoir System Master Manual



- First published in 1960
- Updated in 1975 and 1979
- Master Manual Review and Update began in November 1989 in response to late 1980's / early 1990's drought
- Manual was revised for drought conservation in March 2004
- Again revised in March 2006 for spring pulse



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Drought Impacts



- Water Intakes
- Irrigation
- Boat Ramps and Marinas
- Cultural Resources
- Fisheries
- Power Production
- Navigation





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Threatened and Endangered Species



Interior Least Tern



Piping Plover



Pallid Sturgeon



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Mississippi River Drainage Basin



*41% of U.S. Flows Through the
"Body of the Nation"*





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Mississippi River Commission (MRC)



- **Presidential appointed commission; established 1879**
- **Seven Presidential appointees:**
 - **Three Corps Generals**
 - **Three Civilians (min 2 Civil Engrs)**
 - **One NOAA Admiral**
- **Headquartered in Vicksburg, Miss.**
- **MRC work carried out by six Corps of Engineers district offices in the Mississippi valley**
- **Authority extends for entire river - headwaters to Head of Passes**
- **Promotes Public involvement, listening, partnering, inspecting, engineering**



1927 MRC members



- **Transcends regional entanglements**



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MRC Process



Listening



Engineering



Inspecting



Partnering



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Questions?

What is MRRIC?



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Missouri River Recovery Implementation



Committee

- Provides a basin forum for collaboration on recovery activities
- Ensures consideration of public values in recovery decisions
- Consists of broad range of basin tribes, states, stakeholders, and federal agencies
- Provides consensus-based recommendations to entities in the basin

