US Army Corps
of Engineers
Portland District

Columbia Snake River System
Federal Investment

Columbia River Ports
A Case Study

Columbia Snake River System Federal Infrastructure

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Portland District

Federal Infrastructure

Mouth of the Columbia River

North Jetty – 2.5 mi long (4.02 km)

South Jetty – 6.6 mi long (10.62 km)

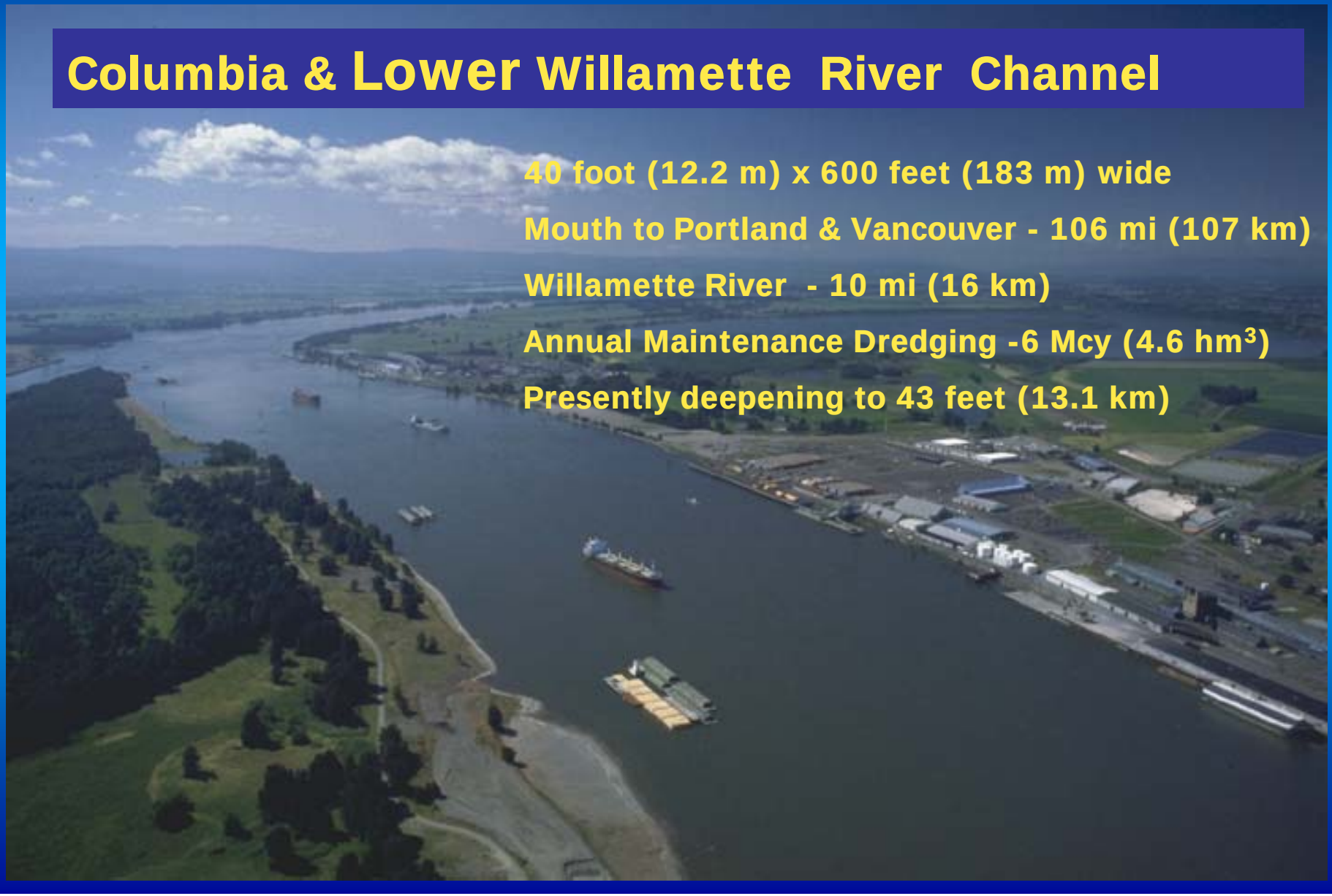
Spur Jetty – 0.3 mi long (0.48 km)

Entrance Channel – 2600 ft x 55 ft deep (792 m x 16.8 m)

Annual Maintenance Dredging: 4.5 Mcy (3.5 hm^3)

Federal Infrastructure

Columbia & Lower Willamette River Channel



40 foot (12.2 m) x 600 feet (183 m) wide

Mouth to Portland & Vancouver - 106 mi (107 km)

Willamette River - 10 mi (16 km)

Annual Maintenance Dredging -6 Mcy (4.6 hm^3)

Presently deepening to 43 feet (13.1 km)

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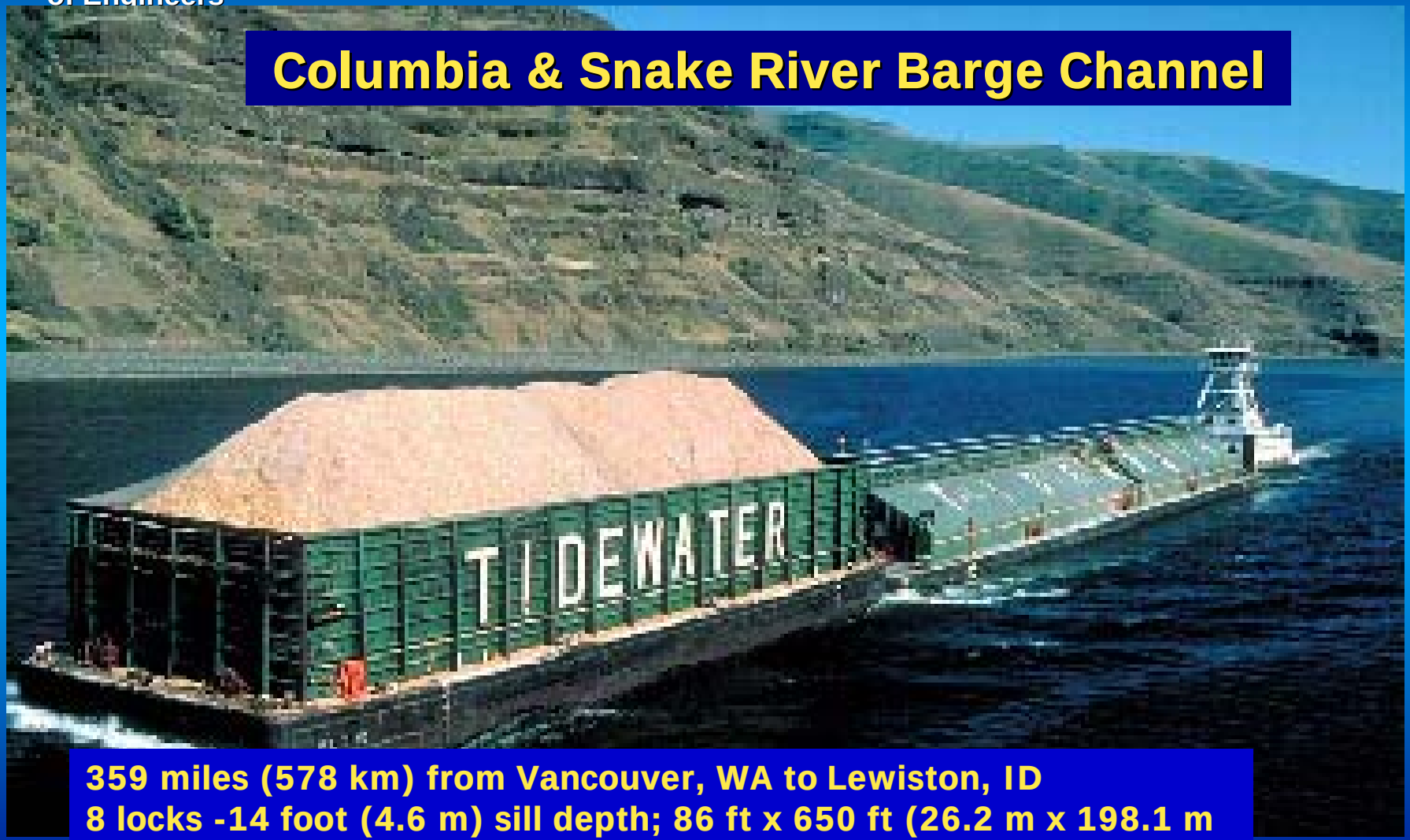

359 miles (578 km) from Vancouver, WA to Lewiston, ID
8 locks -14 foot (4.6 m) sill depth; 86 ft x 650 ft (26.2 m x 198.1 m
Annual Dredging 200 kcy (15.3 dam^3)

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8 Locks through Multipurpose Dams
700 ft Vertical Lift (214 m)

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Columbia Snake River Dams
8 Multipurpose Projects

Power –Generation Cap. 10.3 MWatt

Navigation – 359 mi of barge channel

Flood Control - 534,000 AF

Irrigation –6.5 MAc land (26,304 km²)

Recreation – Over 100 Camps, Parks & Recreational Facilities

Environmental – Fish Passage Facilities

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Selected Commodities Forecast vs. Actual

(Thousands of Tons)

139% of 1958 projections

Commodity Group	1977 Forecast	Actual Traffic 1998
Grain	5417	6578
Lumber, Wood, & Paper	1422	1354
Petroleum & Petrochemical	622	2051

(As measured at Bonneville Dam for Col-Snake River System)

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Columbia River Basin
Multi-District, International

Coordinated Project Management

- Maximizing Power Outputs
- Maximizing Fish Survival Rates
- Maximizing Flood & Irrigation Value
- Streamlining Navigation

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Columbia Snake River System

Operated in Partnership With

- Users
- Stakeholders
- Associations
- Port Sponsors
- Bonneville Power Administration
- Resource Agencies
- Other Federal, State & Local Agencies

Columbia Snake System
USACE Coordination

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69 Commercial Interests
Plus State, Local &
Other Federal Agencies

ASSOCIATIONS

Columbia River Towboat Association
PNWA
[illegible]

USERS

Tidewater Barge Lines
Foss Maritime Company
Shaver Transportation
Bernert Barge Line
SDS Lumber Co.
Puget Sound Naval Shipyard
BNSF Railway
Brusco Tug and Barge
[illegible] Island Sand and Gravel

CRUISE LINES

American West Steamboat Company
Lindblad Expedition
Glacier Bay Cruise Lines
Great American River Journeys
Lewis and Clark Columbia River Cruises
Yachts-O-Fun River Cruises
Great Rivers Cruises and Tours

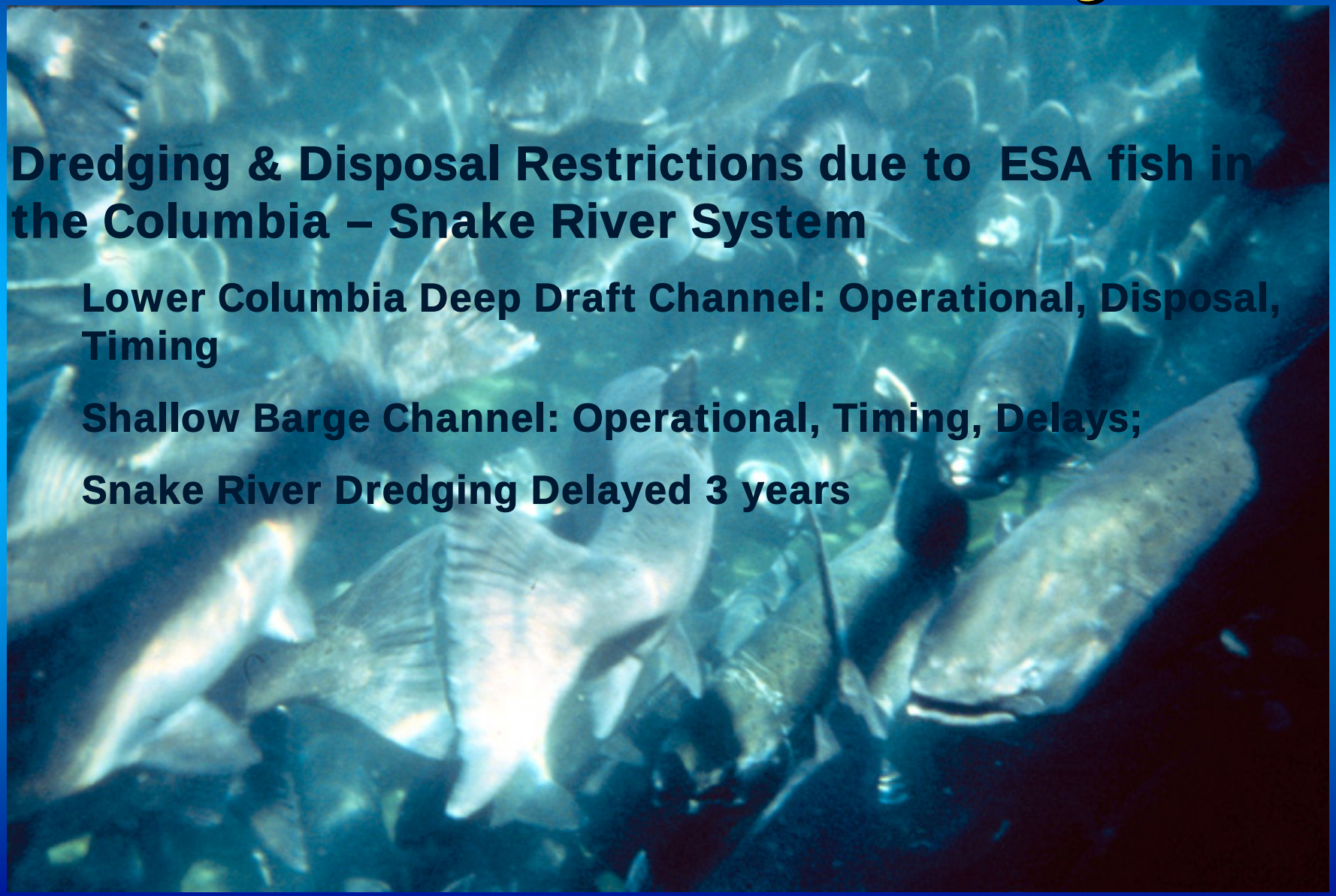
GRAIN ELEVATORS

Almota Elevator Co.
AMorrow County Grain Growers Inc.
Cargill Inc.
[illegible]
Columbia County Grain Growers Inc.
Columbia Grain International Inc.
Continental Grain Co.
Harvest States Cooperatives
Inland Terminal Inc.
[illegible]
Mid Columbia Producers Inc.
Mitsui Grain Corporation
Oregon Wheat Growers League
Peavey Grain Co.
[illegible]
[illegible]
[illegible]
Stegner Grain & Seed Co.
United Grain Corp.
Walla Walla Grain Growers Inc.
Whitman County Growers Inc.

PORTS AUTHORITIES & SPONSORS

Port of Astoria
Port of Cascade Locks
Port of Clarkston
Port of Columbia
[illegible]
Port of Kennewick
Port of Klickitat
Port of Lewiston
Port of Longview
Port of Morrow
[illegible]
Port of Skamania County
Port of St Helens
Port of The Dalles
Port of Vancouver, WA
Port of Walla Walla
[illegible]

Environmental Challenges



Dredging & Disposal Restrictions due to ESA fish in the Columbia – Snake River System

- **Lower Columbia Deep Draft Channel: Operational, Disposal, Timing**
- **Shallow Barge Channel: Operational, Timing, Delays;**
- **Snake River Dredging Delayed 3 years**

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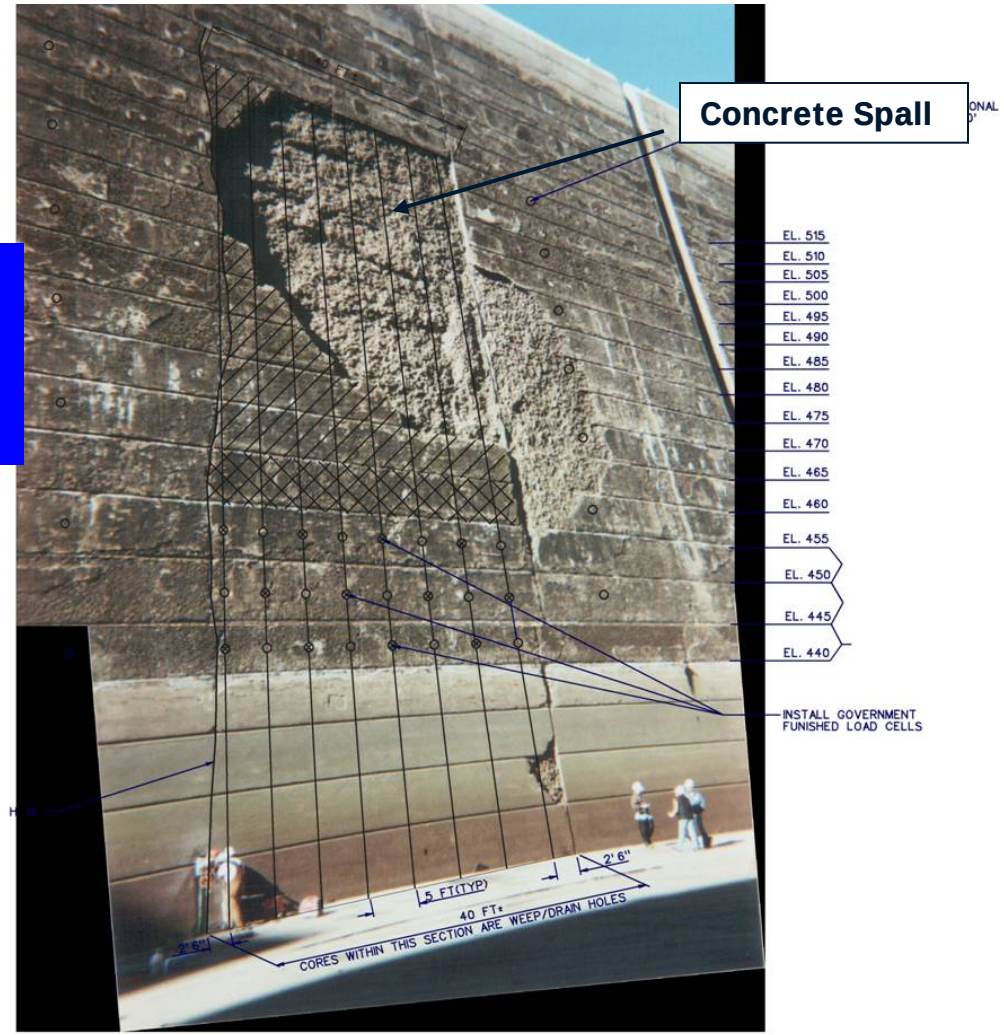
Infrastructure Challenges
Columbia Snake River System

Lower Monumental Dam

Est. Cost = $22M
(all repairs)



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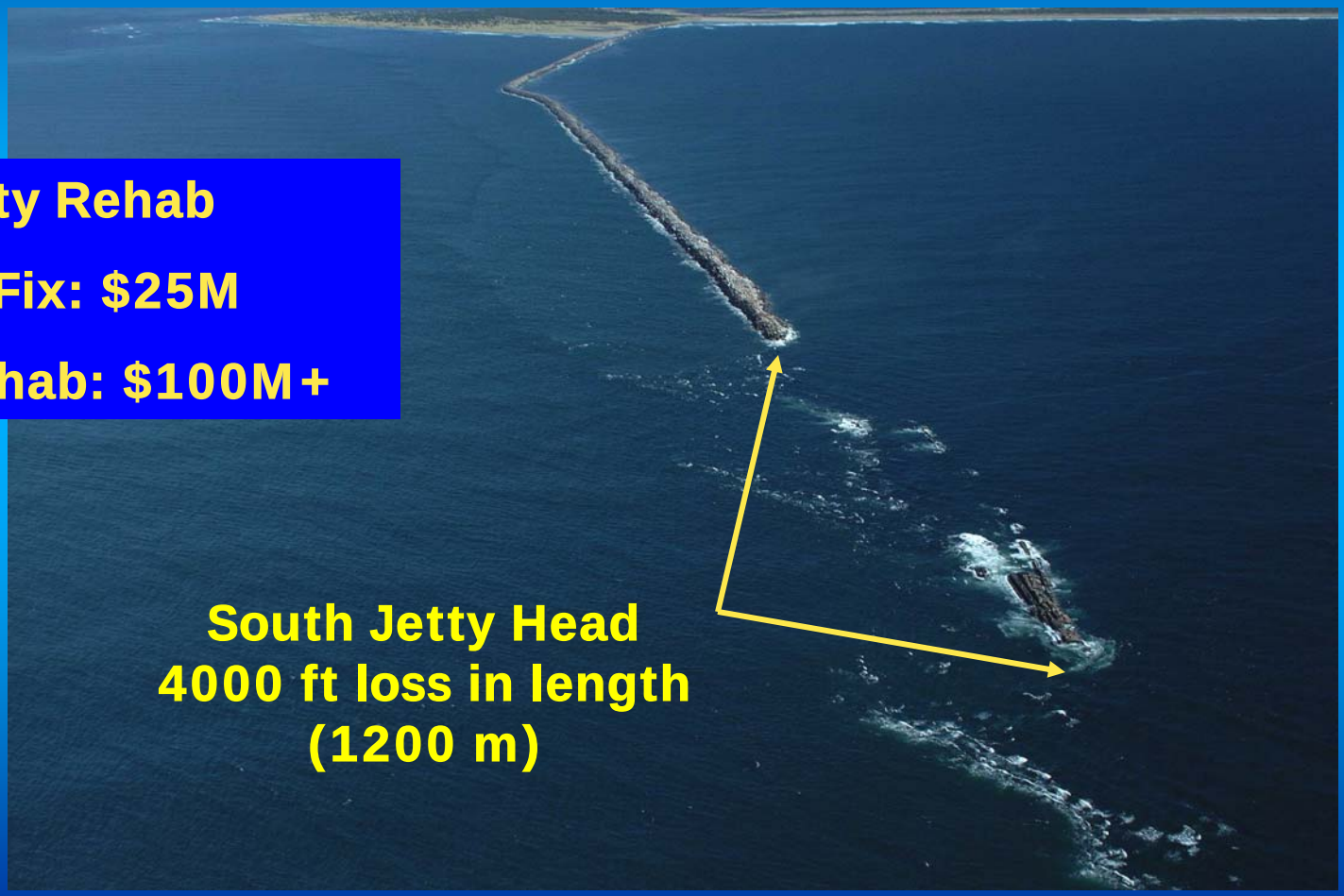
Infrastructure Challenges
Columbia Snake River System

MCR Jetty Rehab

Interim Fix: $25M

Total Rehab: $100M+



Infrastructure Challenges
Unplanned Expenditures

2003 – Coos Bay Jetty Breach – Emergency Winter Interim Repair
Final Repair Est.: $20M

2003 / 2004 – John Day Lock Failure – Emergency Repair to U/S Gate, Foundation, and Monolith - $16M

2005 Fern Ridge Dam – Active Failure Emergency Repairs $17M

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Funding Challenges for Traditional Corps Missions

Constrained Budget Forecasts

GWOT

Hurricane Recovery

Failing National Infrastructure

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Portland District Corps of Engineers