US Army Corps of Engineers
Portland District

Federal Navigation Infrastructure and O&M Funding

OREGON FREIGHT ADVISORY BOARD
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Channels and Harbors Project
Portland District

Portland District Navigation Mission

US Army Corps of Engineers
Portland District

Major Henry M. Roberts 1st District engineer - 1871

… to eliminate impediments to navigation in the region's rivers and to obtain a precise knowledge of the territory

1917 North Jetty Constr Complete

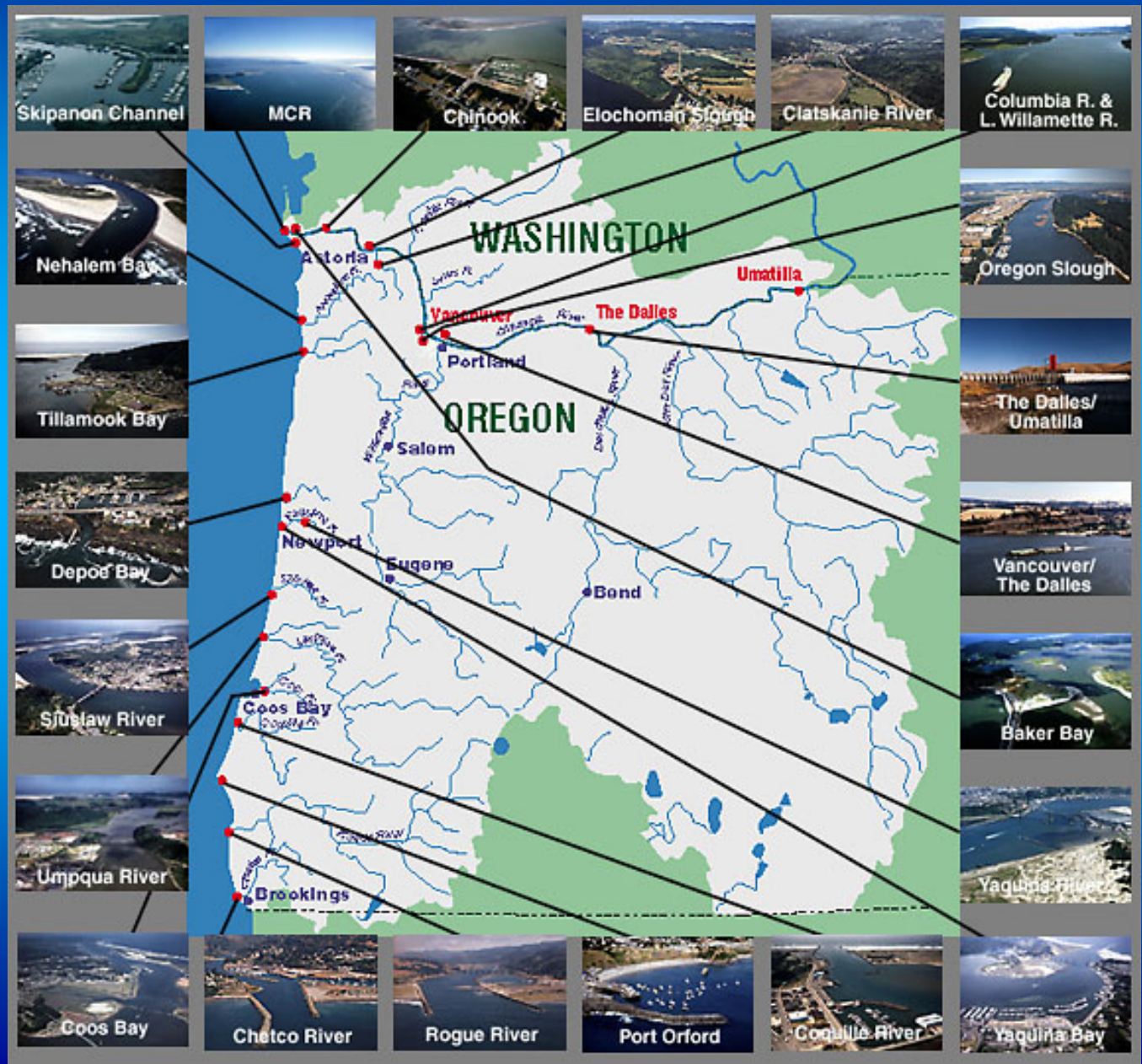
1885 – 1896 South Jetty Constr.

1936 - South Jetty Extn & Jetty A

Portland District Navigation Projects

US Army Corps of Engineers
Portland District

- 22 Active
- 18 Routine O&M
- 22 Inactive/ DeAuthorized



Federal Budget Process

US Army Corps
of Engineers
Portland District

Corps Navigation Mission

Provide safe, reliable, efficient, effective and environmentally sustainable waterborne transportation systems for movement of commerce, national security needs, and recreation.

Federal Budget Process

US Army Corps of Engineers
Portland District

Performance Objective for Navigation O&M

Operate and manage the navigation infrastructure to maintain justified levels of service in terms of the availability to commercial traffic of high-use navigation infrastructure (waterways, harbors, channels).

Federal Budget Process

US Army Corps of Engineers
Portland District

Key Factors in O&M Budget Ranking

- Commercial Waterborne traffic (tonnage & system ton-miles)
- Risk & Reliability of System
- Avg. O&M $ per Ton
- Other Considerations: Refuge & Safety, Subsistence, National security, etc.
- Remaining Items – R&D, waterborne performance data
- *Remarks, Purpose, Consequences*

Baker Bay, WA

US Army Corps of Engineers
Portland District

DESCRIPTION

W Channel - 3.2 mi x 16 ft deep; narrows in width from 200 ft entrance to 150 ft channel
Boat basin is protected by a rubble mound breakwater

ECONOMIC BENEFITS

Major local economic feature
Recreational vessels in large marina
Fish landings 31.1 million pounds (2004 – Ilwaco/Chinook combined)
Fishing Fleet/Charter vessels
Local business base of marine goods and services

OTHER

USCG National Coxswain Training School in Ilwaco provides significant presence for Columbia River rescue operations

Chinook and Head of Sand Island, WA

US Army Corps of Engineers
Portland District

DESCRIPTION

Channel is approx. 2 miles long x 150 feet wide x 10 feet deep
Boat basin is protected by a rubble mound breakwater
Marina has 300 slips for pleasure craft and commercial fishery

ECONOMIC BENEFITS

Crab processing plant on site
Recreational and charter vessels
Fishing/crabbing fleet (2004 – Ilwaco/Chinook combined)
Local business base of marine goods and services

OTHER

Port of Chinook is significant to local economy

Skipanon Channel, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Maintained channel is approximately 2 miles long x 200 feet wide with a 300 feet turning basin
Channel is authorized to 30 feet deep and maintained to 17 feet.
Boat basin is 12 feet deep
500 berths (including an adjacent marina)

ECONOMIC BENEFITS

Fishing Fleet (66,000 lbs/year)
Recreational vessels
Local business base of marine goods and services
Charter fishing

OTHER

Marina is significant to local economy

Mouth of the Columbia River

US Army Corps of Engineers
Portland District

DESCRIPTION

Channel A (n. reach) is 6 mi x 55 ft x 2,000 ft;
Channel A (s. reach) is 6 mi x 48 ft x 640 ft
N. Jetty is 2.5 mi long S. Jetty is 6.6 mi long
Spur Jetty A is 0.3 mi long

ECONOMIC BENEFITS

Provides efficient movement of goods from the Rockies to the Pacific Ocean
48 million tons of cargo worth over $16 billion travels through the mouth each year
World's 2nd largest grain export system
12,000 commercial and 100,000 recreation vessels go through each year

OTHER

MCR mouth is considered one of the world's most dangerous coastal inlets due to large waves (exceeding 45 ft during intense storms) and strong currents
Interim Repair of N. and S. Jetties is ongoing

Columbia and Lower Willamette Rivers below Vancouver, WA and Portland, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Authorized navigation channel is 40 ft deep x 600 ft wide
101.6 mi of Columbia river
11.6 mi of Willamette river

ECONOMIC BENEFITS

Annually, 48 million tons (valued at $16 billion) of cargo pass through the Columbia River

OTHER

USCG MSO Station at Portland
USCG Air Station Astoria
Serves deep draft ports of Astoria, Longview, Kalama, Vancouver, St Helens and Portland

Columbia and Lower Willamette Rivers between Vancouver, WA and The Dalles, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Authorized navigation channel is 84.5 mi x 27 ft deep by 300 ft wide

ECONOMIC BENEFITS

Lower Columbia River is the world's second largest grain export system
Approx. 10 M tons cargo annually

OTHER

Paper mill at Camas, WA has barge traffic through project for all up and down bound cargo between Portland and Lewiston, ID

Tillamook Bay and Bar, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

5,700 foot long jetty on north side of entrance to bay constructed from 1914-1918
Authorized project entrance depth 18 ft MLLW
8,000 ft long jetty on south side of entrance to bay constructed in 1969

ECONOMIC BENEFITS

3.3 million pounds fish landings (2005)
Economic effect on port $11 million

OTHER

USCG Station
Critical Harbor of Refuge
Temporary repairs to N. Jetty by Congressional Add. FY04/FY05, needs permanent repair

Depoe Bay, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Two (2) 160 ft breakwaters north of entrance
Channel is 8 ft deep x 50 ft wide, wider at seaward end
Boat basin is 750 ft long x 8 ft deep by 390 ft wide
Concrete retaining wall borders eastside of boat basin
Sediment check dam on South Depoe Creek

ECONOMIC BENEFITS

85 thousand lbs in fish landings (2005)
Large tourist and charter boat home port
5,540 commercial bar crossings annually

OTHER

USCG Station
Critical Harbor of Refuge
Retaining wall repairs FY03-FY05

Yaquina Bay, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

North Jetty is 7,000 feet long; constructed from 1889-1896
South Jetty is 8,600 feet long; constructed from 1881-1896
Spur Jetty off South Jetty is 800 feet long
Entrance channel is 4,280 feet long by 40 feet deep by 400 feet wide
Thence a channel to Mclean Point is 2 miles long by 30 feet deep by 300 feet wide
Turning basin at Mclean Point is 1,400 feet long by 30 feet deep by 1200 feet wide
South beach marina access channel
Channel from River Mile 2.4 to River Mile 4.4 is 2 miles long by 18 feet deep by 200 feet wide

Yaquina Bay, OR

US Army Corps of Engineers
Portland District

ECONOMIC BENEFITS

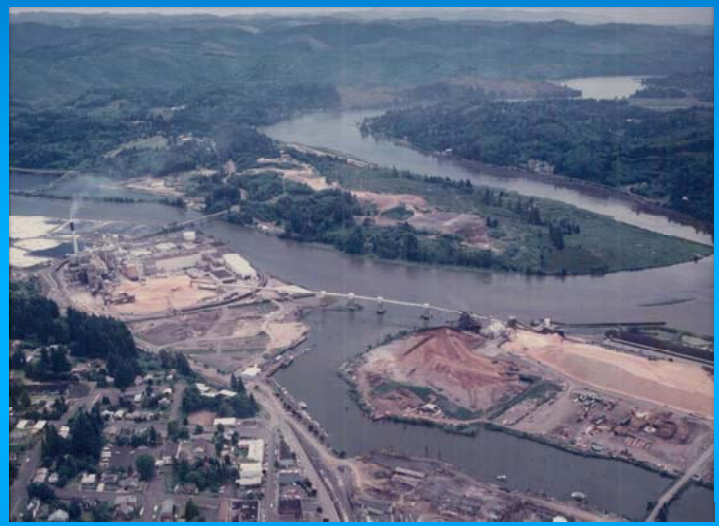
109 million lbs of fish landings (2005) and other commodities at $29 million

OTHER

USCG Air Station
Critical Harbor of Refuge
OSU Hatfield Marine Science Center with R/V WECOMA
Experimental oyster mounds placed by USACE Dredge YAQUINA in 1996
North jetty repaired in 2000
Rock groins on south side of channel failing

Yaquina River, OR

US Army Corps of Engineers
Portland District



DESCRIPTION

Channel is 9 mi long x 10 ft deep x 150 ft wide
Two (2) half tide dikes
Channel into Depot Creek is 1,800 ft long x 10 feet deep x 200 ft wide
Channel from Depot Creek to Yaquina River is 1.4 mi long x 10 ft deep x 150 ft wide
Turning basin is 500 ft long x 10 ft deep x 350 ft wide

ECONOMIC BENEFITS

2 small boat shipyards
Chip processing plant barges
Alaska fishing fleet wintering

OTHER

Georgia Pacific wood chip processing plant
Rail connection to Eugene, Oregon

Siuslaw River, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Navigation channel entrance is 18 ft deep x 300 ft wide; main channel is 16 ft deep x 200 ft wide from the mouth to Florence, OR
Two (2) rubble-mound jetties 750 ft apart
N. Jetty is 9,690 ft, constructed from 1892-1901; S. Jetty is 6,000 ft, constructed from 1910-1917

ECONOMIC BENEFITS

38+ thousand lbs of fish (2005), lumber, and other commodities at $355,000 in value
Economic effect of port is $12.5 million
1,354 commercial bar crossings annually

OTHER

USCG Station
Critical Harbor of Refuge
Jetties experiencing significant loss of length

Umpqua River, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Entrance channel is 26 ft deep; main channel is 22 ft deep x 200 ft wide from the mouth to Reedsport, OR

Two (2) jetties at river's mouth:

N. Jetty is 8,000 ft long; constructed from 1917-1919

S. Jetty is 4,200 ft long; constructed from 1933-1939

Training jetty added to lessen the effect of entrance shoaling (1950)

Training jetty extended in 1980

Winchester Bay boat basin access channel

Umpqua River, OR

US Army Corps of Engineers
Portland District

ECONOMIC BENEFITS

900 thousand lb fish landings (2005) and aggregate at $1.1 million
Economic effect on port is $14 million
2,659 commercial bar crossings annually
28,304 recreational bar crossings annually

OTHER

USCG Station
Critical Harbor of Refuge
American Bridge Company recently relocated to Reedsport at River Mile 9

Coos Bay, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

2 rubble mound jetties on north and south side of entrance
North jetty constructed from 1891 – 1898
South jetty constructed from 1924 – 1929
Deep draft entrance channel is 47 ft deep x 700 ft wide
Main channel is 37 ft deep x 300 ft wide channel at River Mile 1.0 to River Mile 15
From River Mile 15 to River Mile 17 the channel is 150 ft wide x 22 ft deep
2 turning basins
Boat basins access channel at Charleston (River Mile 2)

Coos Bay, OR

US Army Corps
of Engineers
Portland District

ECONOMIC BENEFITS

2.3 million tons cargo annually (mainly wood products) at $25.1 million
Includes 26 million lbs fish and shellfish landings (2005)

OTHER

USCG Sector Headquarters
USCG Air Station
Project deepened to --37 feet inside and 47 feet on the bar in 1996
Proposed deep-water LNG terminal in planning stages
Temporary emergency repair to North jetty in 2002 (Needs permanent repair)
Critical Harbor of Refuge

Coquille River, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Bandon Small Boat Basin
Two (2) jetties: N. Jetty is 3,450 feet long, constructed from 1892 to 1909; S. Jetty is 2,700 ft long, constructed from 1881 to 1901
Channel of suitable width and 13 ft from deep water to River Mile 1.3; Snagging operations are authorized to River Mile 24.0

ECONOMIC BENEFITS

4,000 lb commercial fish landings (2005)
Economic effect of port is 7 million
95 jobs for residents near the river
2,400 bar crossings annually

OTHER

USCG Station (seasonally manned)
Critical Harbor of Refuge
“L” shape pile dike failing

Port Orford, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

500 ft breakwater was constructed by local residents in 1935; 1968, U.S. Army Corps of Engineers extended breakwater
Entrance and turning basin is 16 ft deep x 750 ft long x 90 ft wide

ECONOMIC BENEFITS

18 tons of fish landings (2005)
Economic effect on port is $2.5 million
150 fishing and private boats use the dock each year

OTHER

Critical Harbor of Refuge
Economic Hub zone
Breakwater Failing

Rogue River Harbor at Gold Beach, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Two (2) jetties 1,000 ft apart on north and south side
N. Jetty constructed from 1960-1961
S. Jetty constructed from 1959-1960
Channel 13 ft deep and 300 ft long to boat basin
Boat basin access channel is 10 ft deep by 150 feet wide by approximately 2,000 ft long

ECONOMIC BENEFITS

75 tons of fish landings (2005)
Economic effect of port is $4 million

OTHER

USCG Station (seasonally only)
Critical Harbor of Refuge
Boat basin access channel relocated in 1998

Chetco River, OR

US Army Corps of Engineers
Portland District

DESCRIPTION

Two (2) jetties at entrance: N. and S. Jetty constructed from 1957-1958;
Entrance channel 14 ft deep x 120 ft wide to turning basin; Turning basin is 250 ft wide x 650 ft long x 14 ft deep protected by 1,800 ft long dike; Commercial boat basin access channel

ECONOMIC BENEFITS

$8.6 million in commerce including 2000 tons of fish and shellfish landings (2005)
and 4,000 tons of other commodities
Economic effect of port is $25 million
Over 47,000 recreational bar crossings annually and over 5,500 commercial bar crossings annually

OTHER

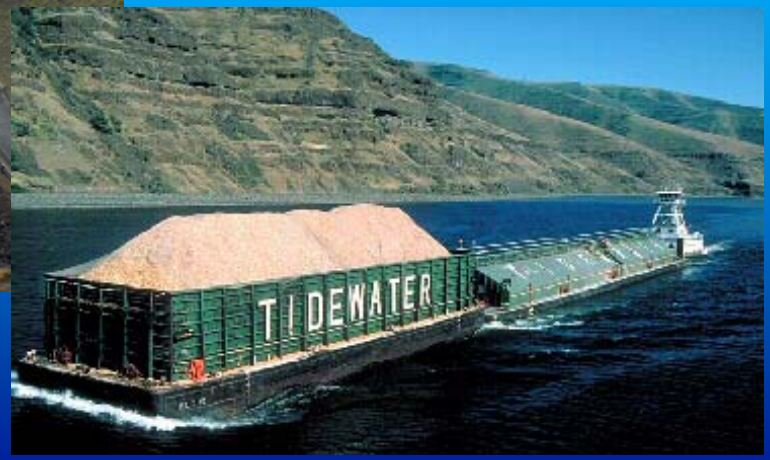
USCG Station
Critical Harbor of Refuge
Near shore disposal site

US Army Corps of Engineers
Portland District

Federal Infrastructure

Columbia & Snake River Barge Channel

359 miles from Vancouver, WA to Lewiston, ID
8 locks -14 foot sill depth;
86 ft x 650 ft
Annual Dredging 200 kcy

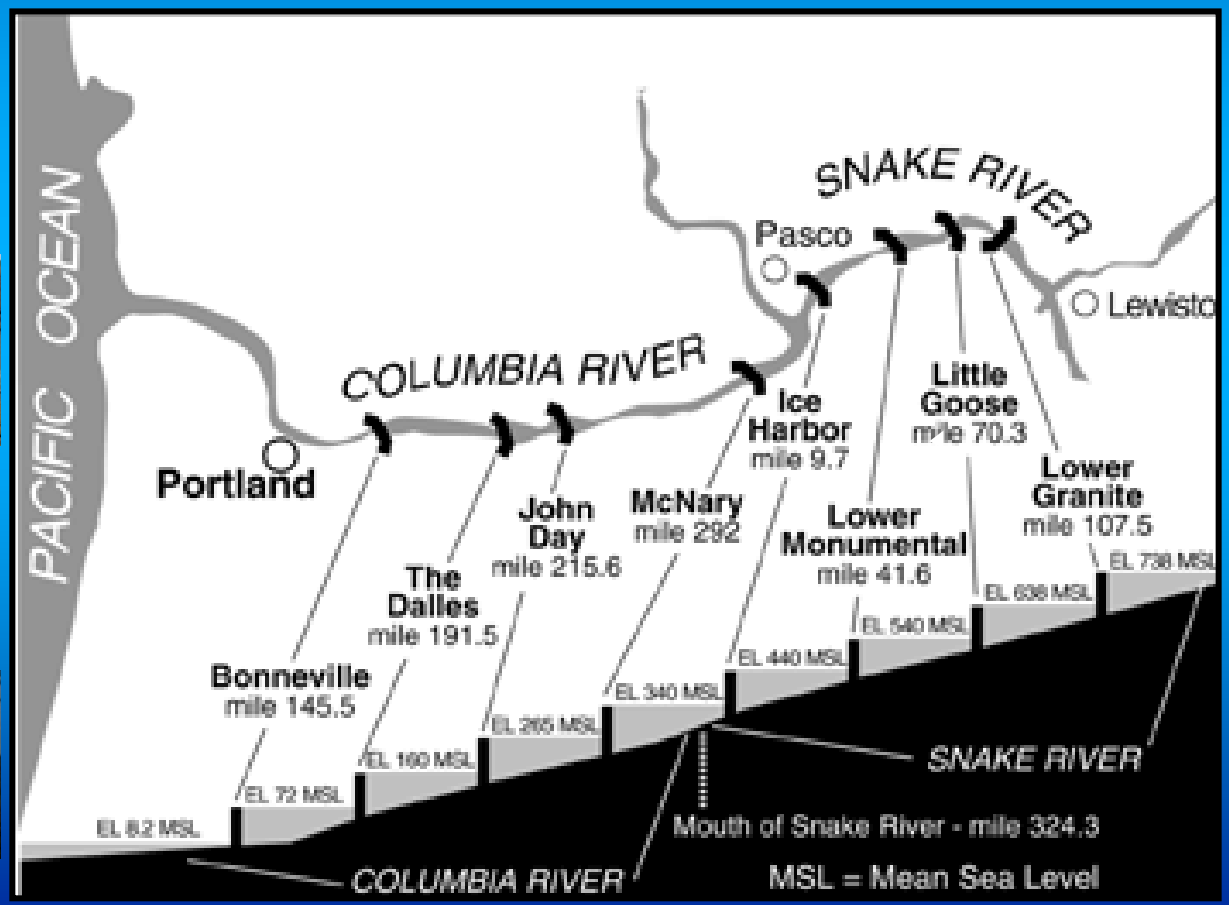


US Army Corps of Engineers
Portland District

Federal Infrastructure

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






US Army Corps of Engineers
Portland District

Selected Commodities Forecast vs. Actual

139% of 1958 projections

(Thousands of Tons)

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)

Local and Regional Stakeholders

US Army Corps of Engineers
Portland District

ASSOCIATIONS

Columbia River Towboat Association
PNWA
Merchants Exchange
Pacific Northwest Grain & Feed Assoc, Inc.
Columbia River Pilots
Columbia River Bar Pilots
Coos Bay Pilots

USERS

Tidewater Barge Lines
Foss Maritime Company
Shaver Transportation
Bernert Barge Lines
SDS Lumber Co.
Puget Sound Naval Shipyard
BNSF Railway
Brusco Tug and Barge
Ross 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.
Central Ferry Terminal Association
CLD Pacific Grain
CO-Grain
Columbia County Grain Growers Inc.
Columbia Grain International Inc.
Continental Grain Co.
Harvest States Cooperatives
Inland Terminal Inc.
Lewis-Clark Terminal Assoc. Inc.
Lewiston Grain Growers Inc.
Louis Dreyfus Corp.
Mid Columbia Producers Inc.
Mitsui Grain Corporation
Oregon Wheat Growers League
Peavey Grain Co.
Pendleton Grain Growers Inc.
Pomeroy Grain Growers Inc.
Rosalia Producers Inc.
S & R Grain Co.
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
Port of Hood River
Port of Kalama
Port of Kennewick
Port of Klickitat
Port of Lewiston
Port of Longview
Port of Morrow
Port of Pasco
Port of Portland
Port of Portland
Port of Skamania County
Port of St Helens
Port of The Dalles
Port of Vancouver, WA
Port of Walla Walla
Port of Whitman County
Port of Woodland

Port of Nehalem
Port of Tillamook
Port of Garibaldi
City of Depoe Bay
Port of Newport
Port of Toledo
Pourt of Siuslaw
Port of Umpqua
Port of Winchester Bay
Port of Coos Bay
Port of Brookings Harbor
Port of Gold Beach
Port of Port Orford
Pord of Bandon

84 Commercial Interests
Plus State, Local & Other Federal Agencies

US Army Corps of Engineers
Portland District

Columbia Snake System National Stakeholders

Illustrations from Port of Portland

US Army Corps of Engineers
Portland District

Infrastructure Challenges

Four of Eleven Coastal Jetty structures are considered to be at risk for imminent failure

Coos Bay North Jetty

Emergency Interim Fix 2003

MCR South Jetty Interim Fix 2006

US Army Corps of Engineers
Portland District

Infrastructure Challenges

Two Columbia Snake System Locks have major rehabilitation studies underway

John Day Lock and Dam
Portland District

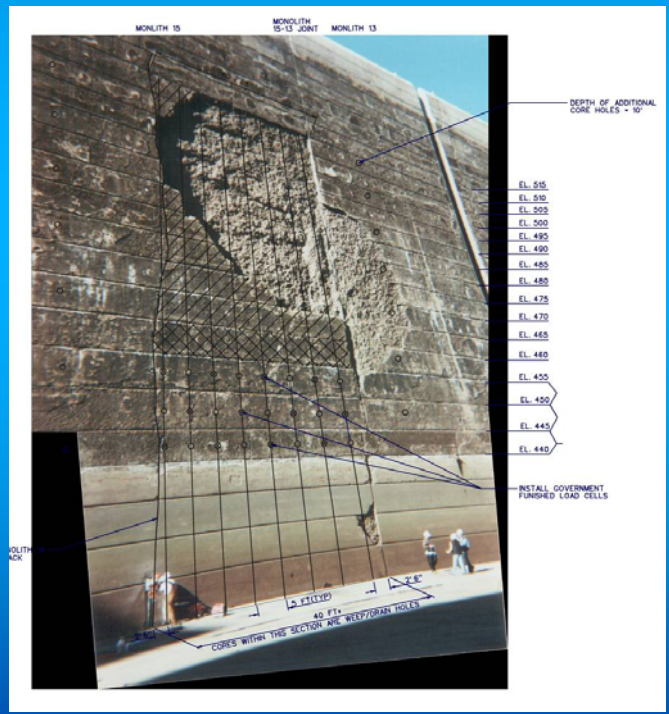
Horizontal cracking on monolith bases

US Army Corps of Engineers
Portland District

Infrastructure Challenges

Two Columbia Snake System Locks have major rehabilitation studies underway

Lower Monumental Lock and Dam
Walla Walla District



Concrete Spall

US Army Corps of Engineers
Portland District

Infrastructure Challenges

System Wide Study Underway to Identify and Prioritize Key Activities and Repairs to Minimize Risk and Maximize System Reliability

US Army Corps of Engineers
Portland District

Questions?