

Challenges of Dredging and Dredged Material Management for Ports

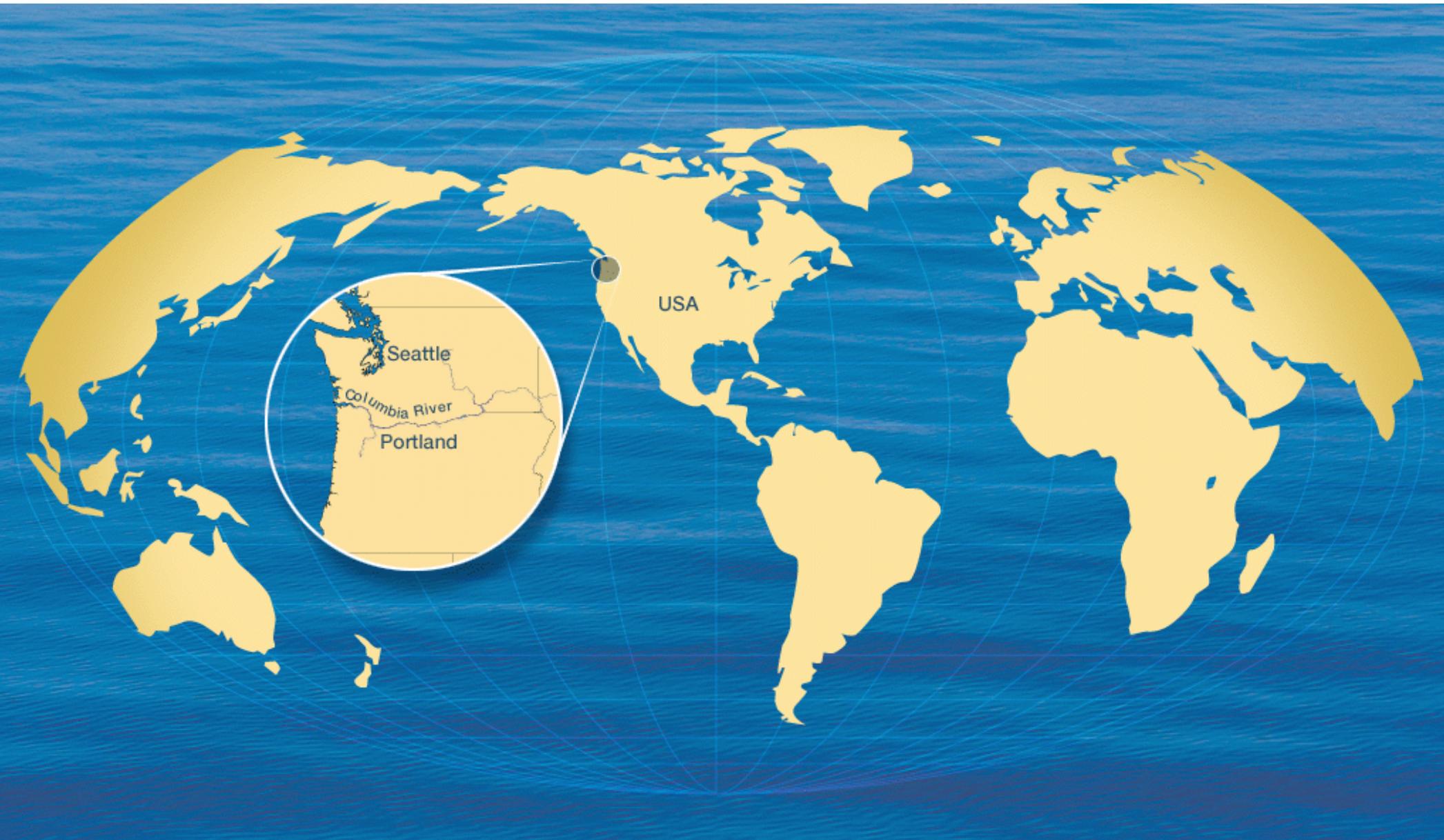


Managing Sediments in the
Watershed

August 29-31

Sebastian Degens, AICP

Port of Portland



Port of Portland Overview



Presentation

1. The port's role & the nature of port dredging
2. The challenges ports face in Dredged Material Management
3. What improvements might make a difference?

Port's role as local sponsor in Channel projects

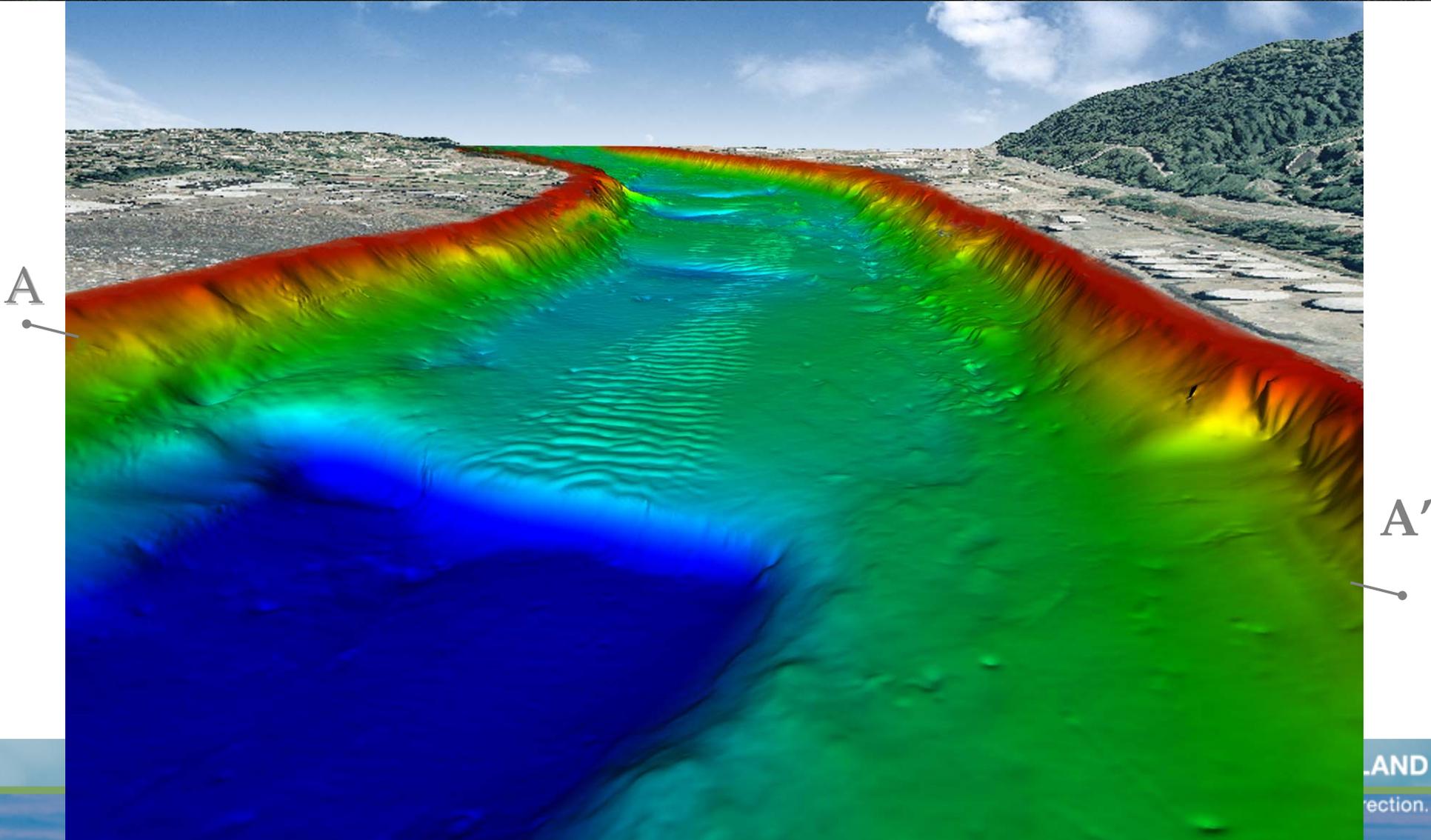
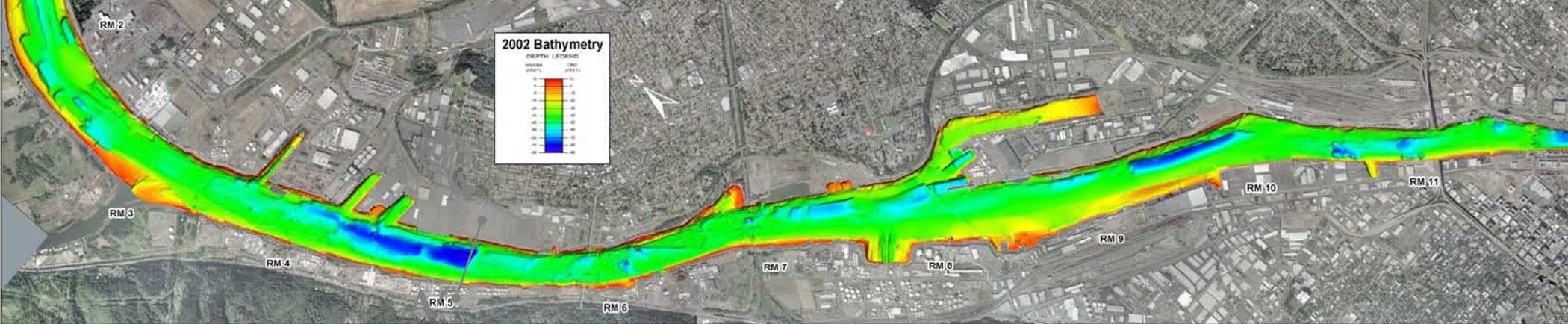
- Provide upland disposal sites
- Advocate for adequate funding to carry out navigation mission
- Cost-share sponsor for improvement studies and projects
- Partner in Long-Range Dredged Material Management Planning



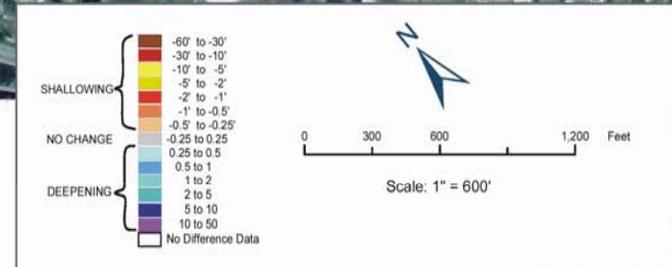
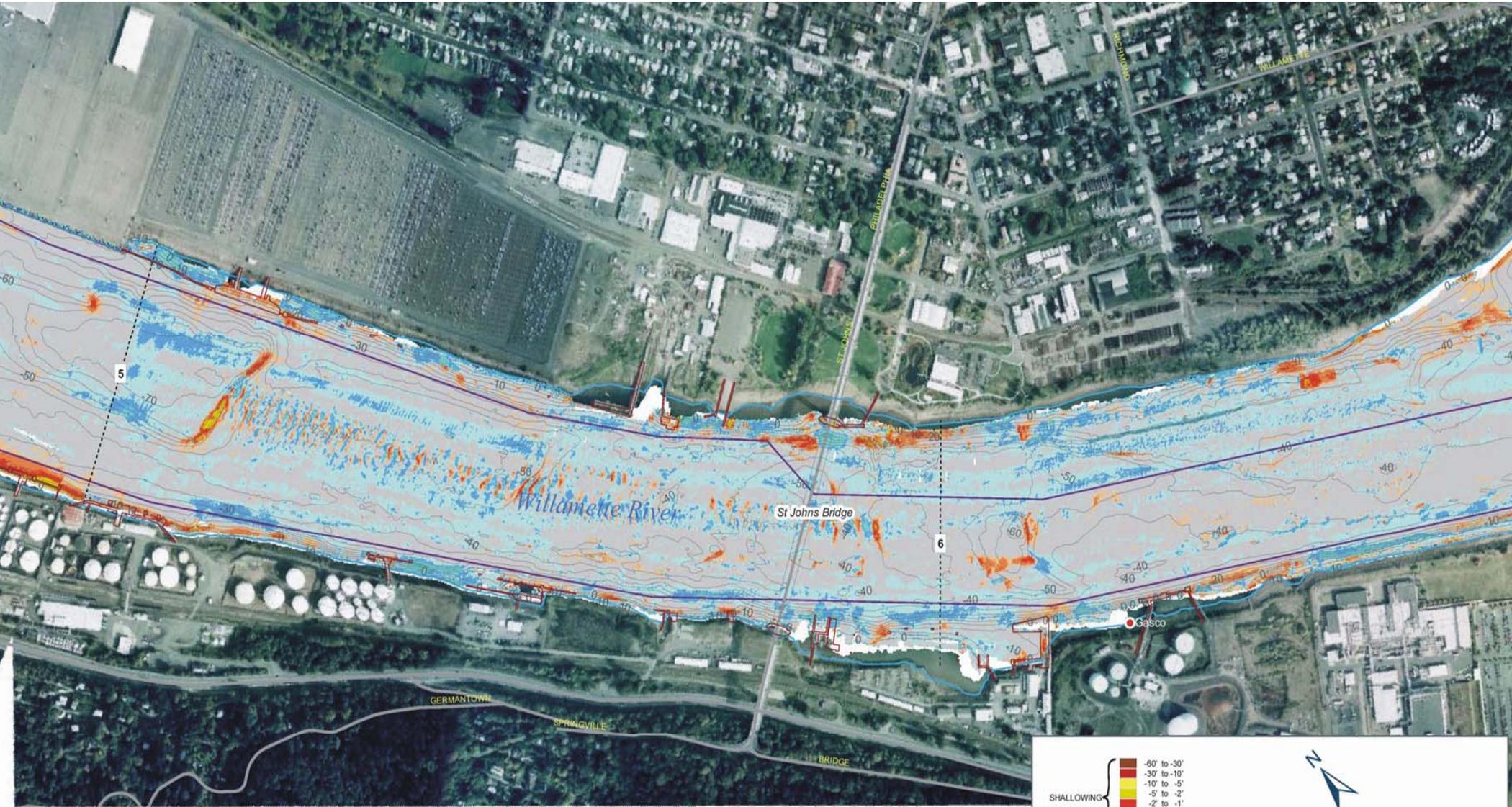
Typical Dredging at Port of Portland docks



- Clamshell dredging at dock face



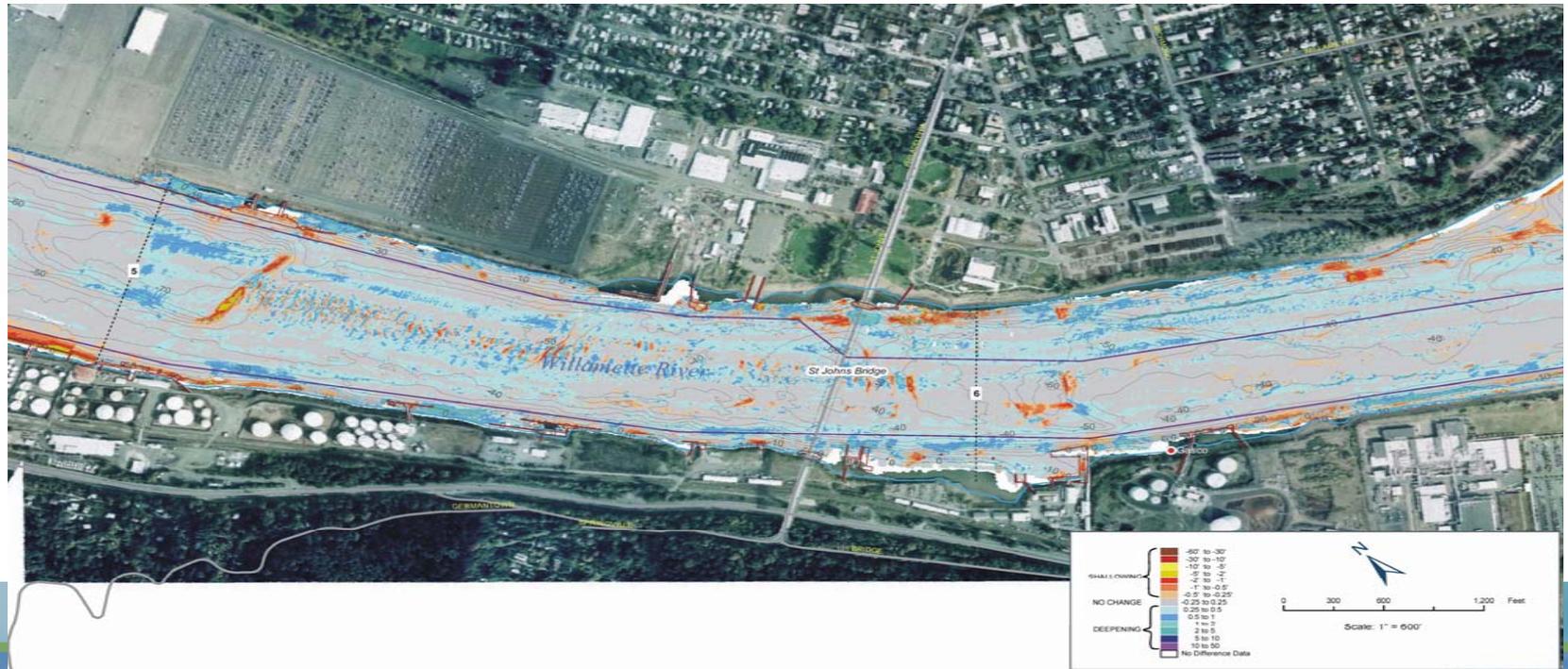
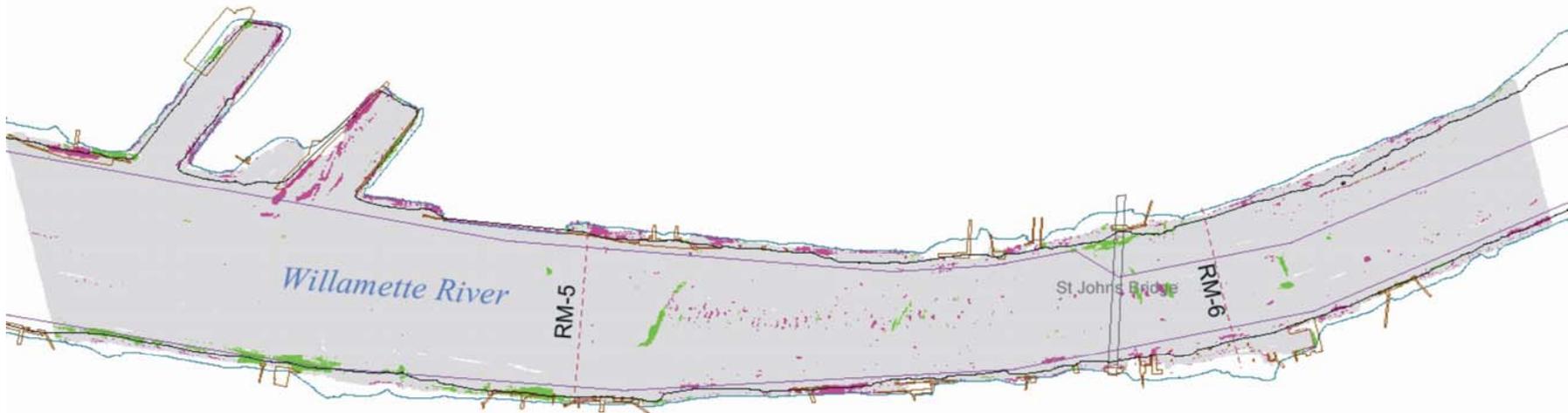
Bathymetry Change Map



Slide Courtesy of **integral** consulting inc.

Bathymetry change greater than 30 cm (1 foot)

May 2003 survey subtracted from the January 2002 Survey.



Typical Dredging at Port of Portland docks

- Clamshell dredging at dock face
- Seasonal due to fish windows and freshet
- Upland disposal since circa 1996
- +/- Two terminals per year
- 500-10,000 cy per terminal

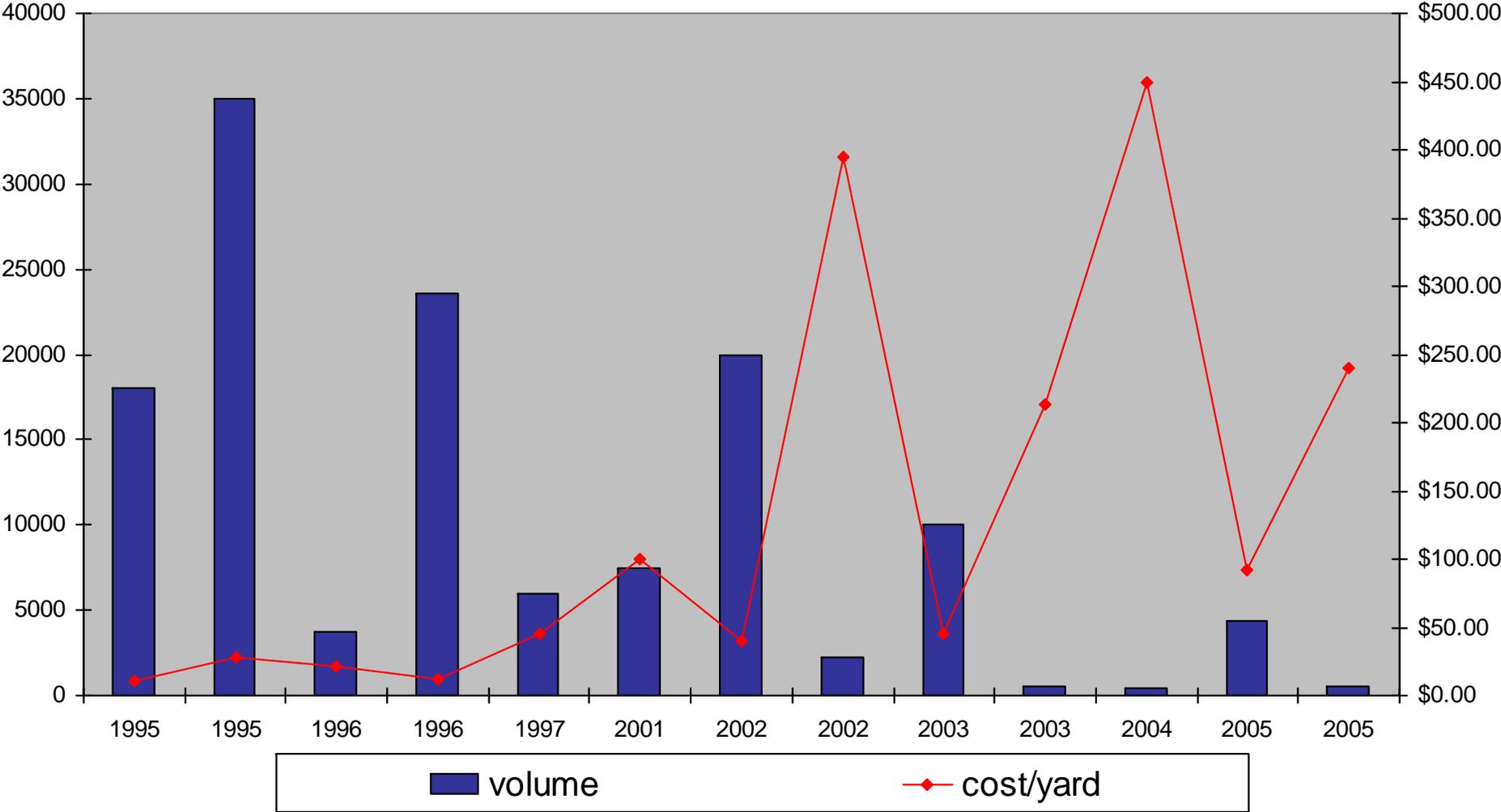
T-6 Rehandle Facility- The Upland Option

- 20,000 CY capacity
- Clean materials only (unlined)
- High cost due to multiple handling
- No real re-use for silty clays
- Regulated as “solid waste” if brought upland

Alternative Option-
use as daily cover
at regional landfills



Port of Portland Dredging Costs since 1995



Terminal 2 Case Study

- 18,000 cy dredged in 1995 at cost of \$10/cy (in-water disp.)
- 22,297 dredged in 1996 at a cost of \$12/cy
- Last dredging in 2002 @ cost \$40/cy (upland disposal)



What challenges, if removed, would significantly make a difference?

- Being able to place sediment back into the water
- Being able to place water entrained during the dredging process back into the water
- Being able to expand the uses of dredged material once taken upland



What are the barriers to sunnier days?

- Low levels of contaminants brought in from upstream sources
- The stigma attached to dredged material, earned or not
- The lack of funding for dredged material management planning



Summary & Observations

- ACOE and ports share many of the same challenges on federal navigation channels, but larger scale
 - Costs driven by sediment & water quality issues rather than volume
 - Beneficial Uses of dredged material need to be expanded
- Funding for long-term dredged management planning is constrained to the detriment of harbors, navigation, and the watersheds
- Better & wider understanding of sediment transport, dredging means & methods, the physical & operational systems unique to each watershed could help develop cost-effective options

The End

