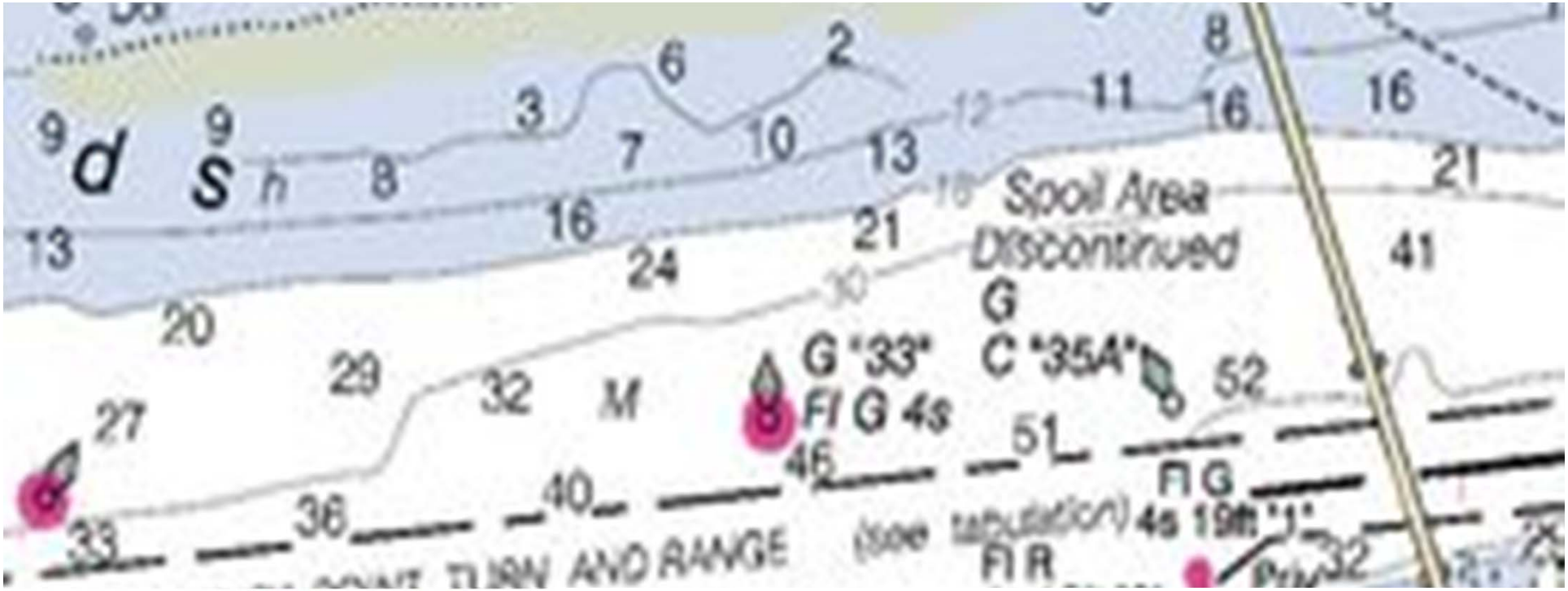


The Port of Astoria

Presented to Lower Columbia Solutions Group 7/8/2011

- **The Location**
- **The Problem**
- **Possible Contributing Factors**
- **Solutions?**

The Location

Central Waterfront Activity

- **Oregon's Blue- Water Port**

- **Deep Draft Capable Piers**
- **Cargo Handling**
- **Cruise Ships**

Central Waterfront Activity

- **Dredges**
- **Research Vessels**
- **Military Vessels**

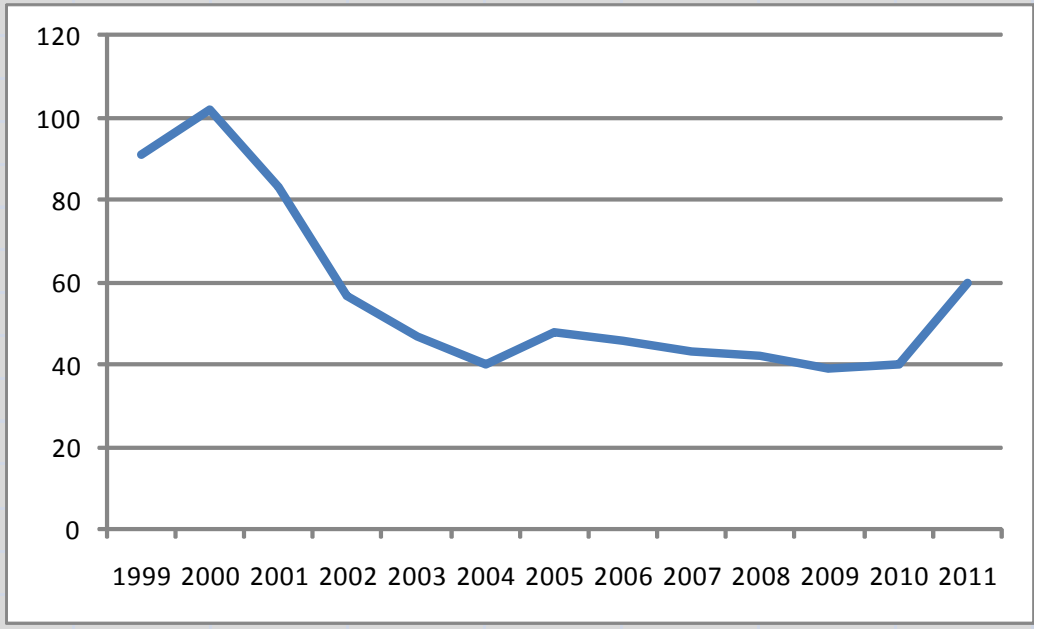
PORT OF ASTORIA

SHIP CALLS

1999-2010

CALENDAR YEAR	TOTAL SHIP CALLS
1999	91
2000	102
2001	83
2002	57
2003	47
2004	40
2005	48
2006	46
2007	43
2008	42
2009	39
2010	40
2011	60 estimated

1989	*52 (LOG SHIPS ONLY)*
1990	*42 (LOG SHIPS ONLY)*
1991	*24 (LOG SHIPS ONLY)*



Central Waterfront Activity

- **Warehousing**
- **Fishing Industry**
- **Marina**
- **Hotels**
- **Restaurants**
- **Tourism**

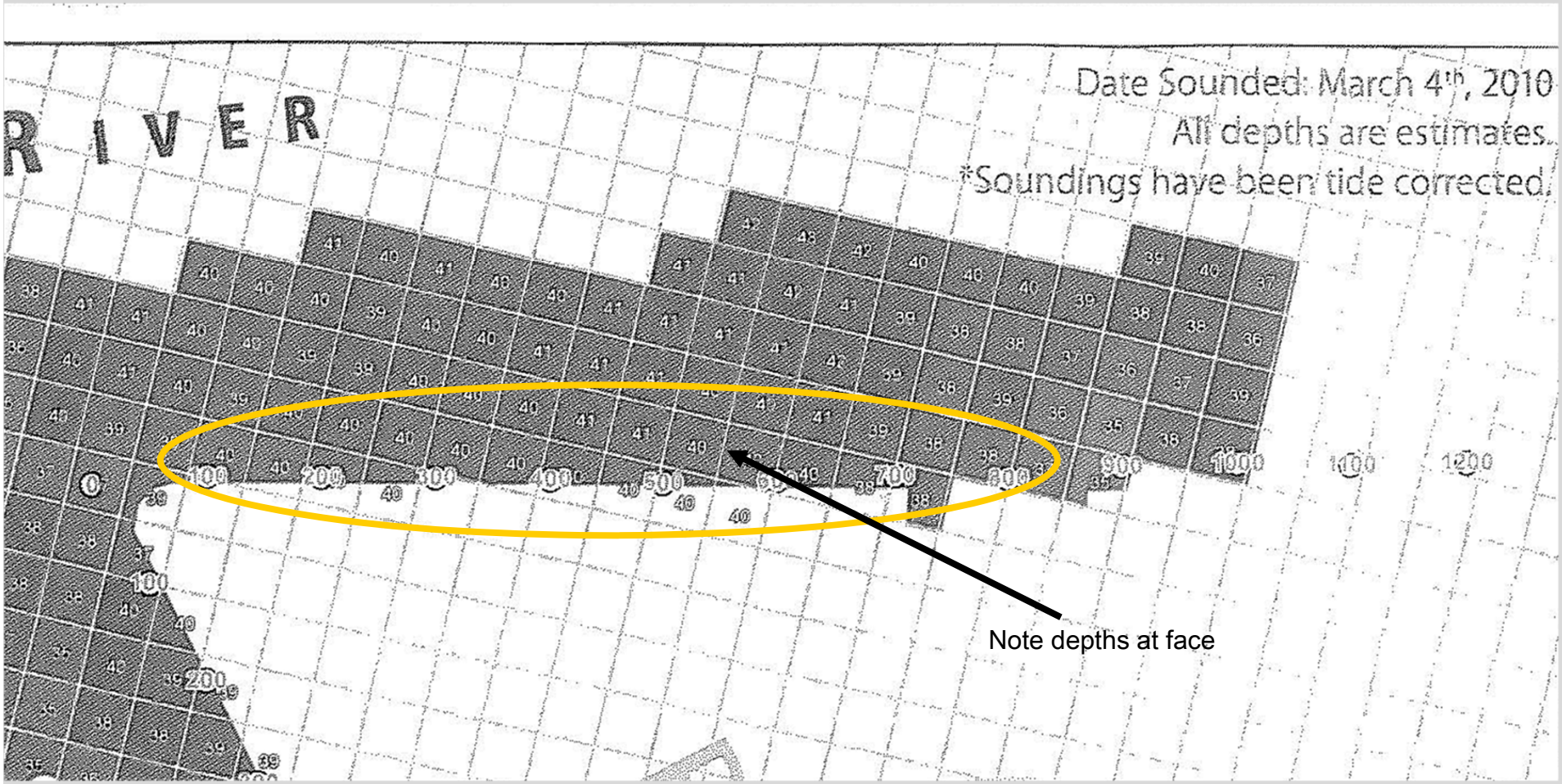
Fishing Industry

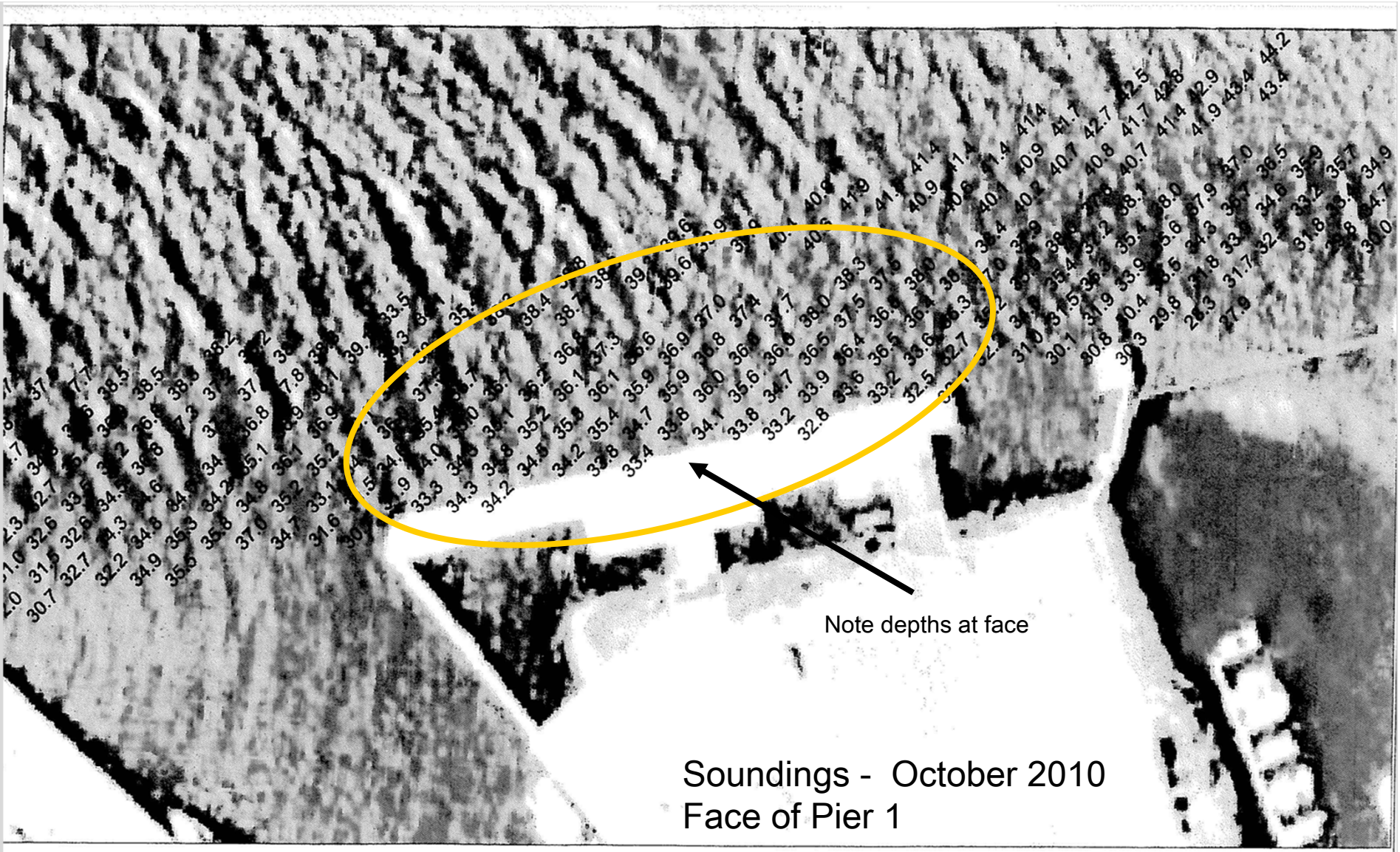
Moorage

The Problem: Sedimentation

- “At least the Port is going to lower the moorage rates”

Soundings - March 2010 Face of Pier 1





GRAPHIC SCALE

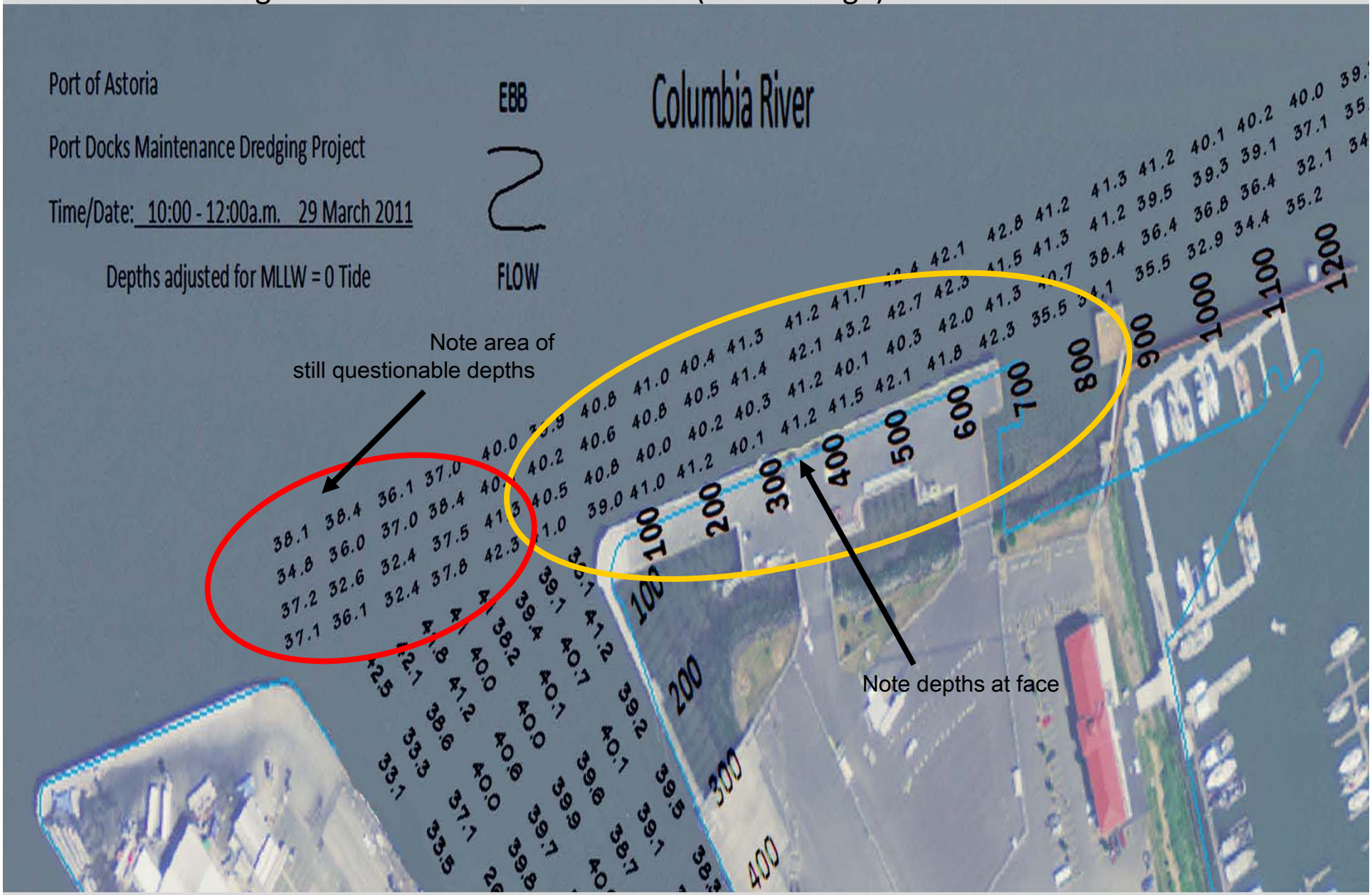
00 0 50 100 200 400

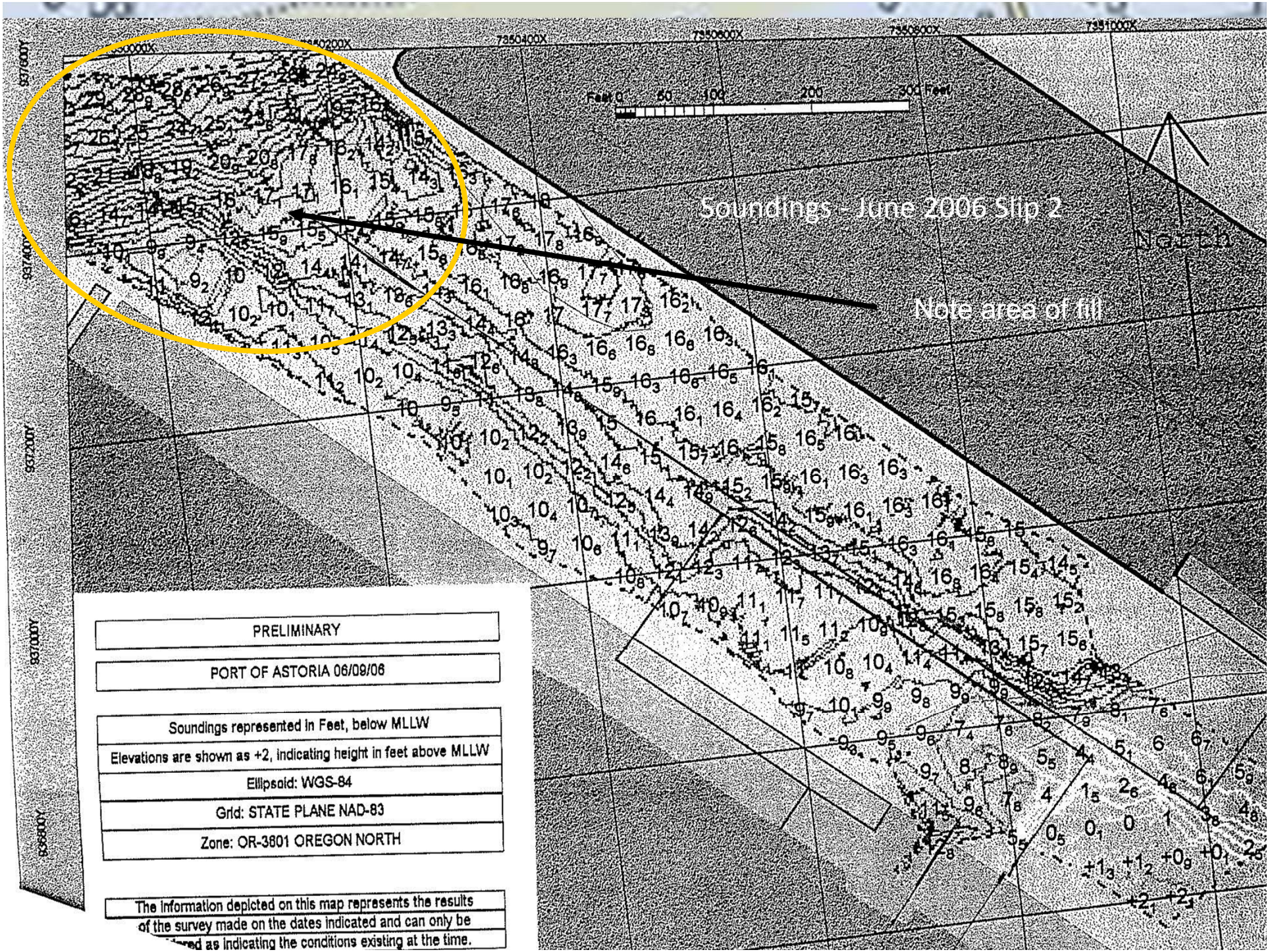
(IN FEET)
1 inch = 100 ft.

Port of Astoria Pier 1
Astoria, OR

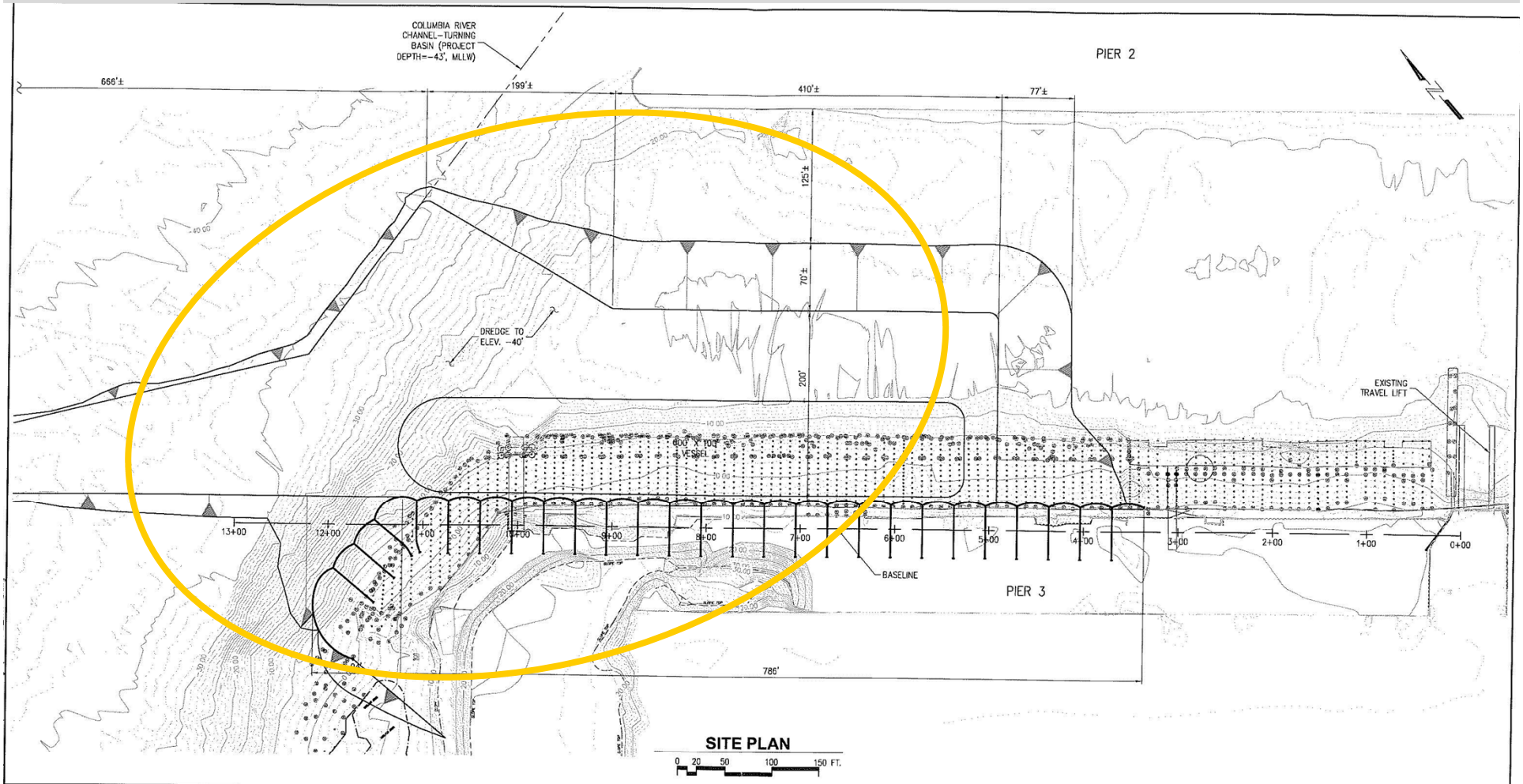
Survey date: October 19, 2010
Vertical Datum: MLLW
Surveyor not liable for depths

Soundings - March 2011 Face of Pier 1 (Post-Dredge)




Soundings - June 2006 Slip 2
Note area of fill
PRELIMINARY
PORT OF ASTORIA 06/09/06
Soundings represented in Feet, below MLLW
Elevations are shown as +2, indicating height in feet above MLLW
Ellipsoid: WGS-84
Grid: STATE PLANE NAD-83
Zone: OR-3601 OREGON NORTH
The information depicted on this map represents the results
of the survey made on the dates indicated and can only be
ered as indicating the conditions existing at the time.

Soundings - 2011 Slip 2



P N D ENGINEERS, INC.
811 First Avenue, Suite 570
Seattle, Washington 98104
Phone: 206-624-1387
Fax: 206-624-1388
mail@pndengineers.com

REVISIONS

REV	DATE	DESCRIPTION

DRAFT CONCEPT

PROJECT: ASTORIA - PIER 3 MATERIAL HANDLING BULKHEAD

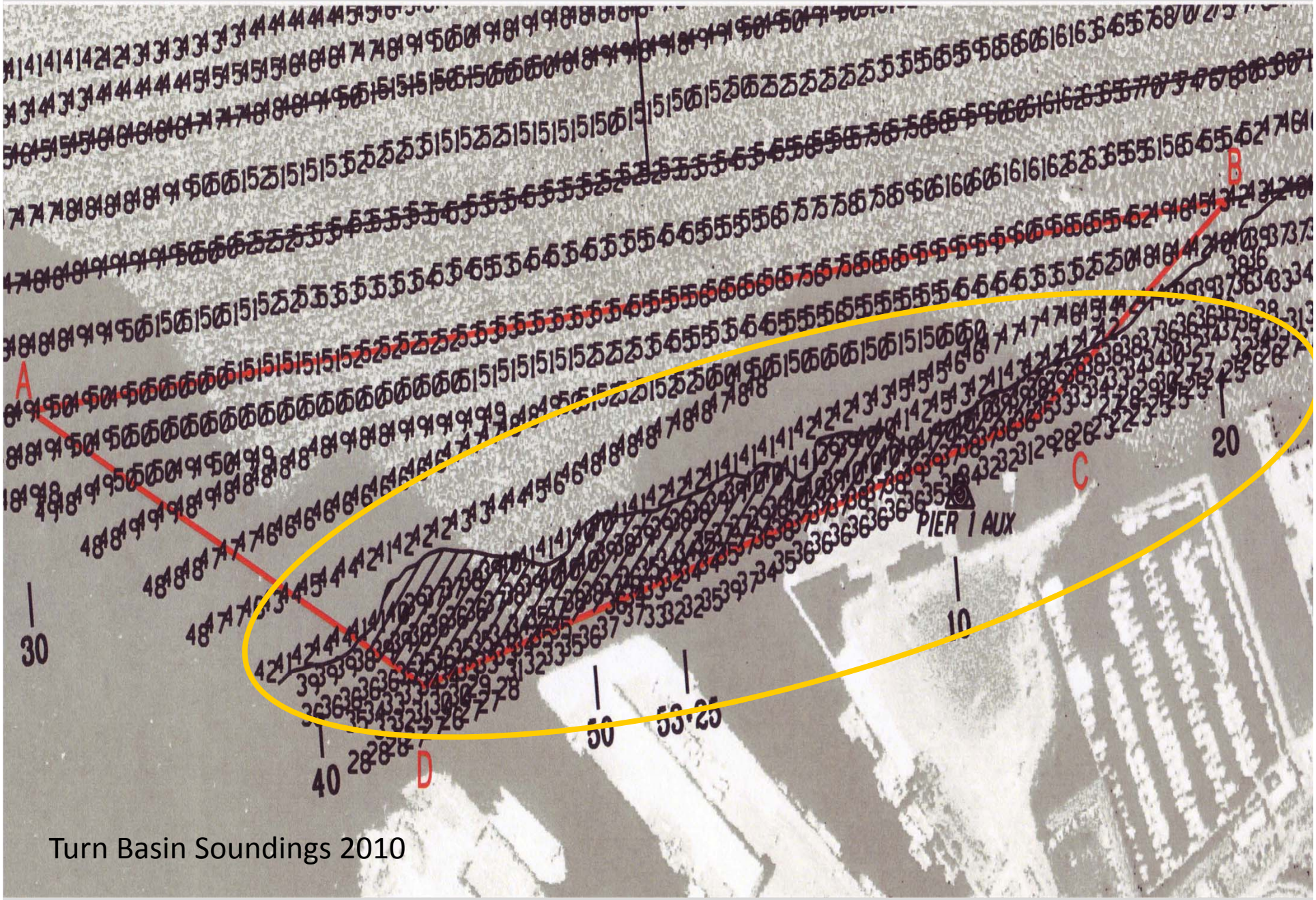
TITLE: OPTION 2 PHASE I SITE PLAN

DESIGNED BY:	TWB	PROJECT NO:	114049.01
DRAWN BY:	GRD	DATE:	JUNE 2011
CHECKED BY:		SCALE:	NOTED

SHEET NO: 2 OF 4

Impact on Turn Basin Area

- **Cross Hatched area less than 40 ‘**
- **Cost to Corps of Engineers**
- **Hazard to navigation in vicinity of Piers**



Turn Basin Soundings 2010

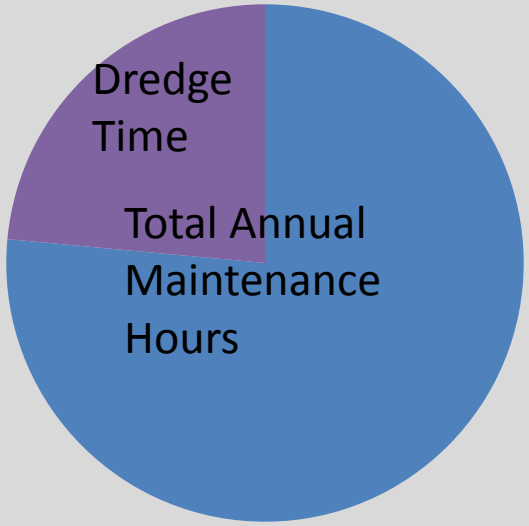
Port of Astoria Dredging Costs

- Average labor per year –
  last three years = $128,345.00
- Parts & Supplies –
  average per year = $19,245.00
- Fuel / Oil –
  average per year = $44,255.00
- Repairs / Maintenance
  average per year = $65,982.00

- **TOTAL average per year = $257,825.00**
  Direct Costs Only

Maintenance Impact

- 2007 through 2011 Port has Maintenance crew of 7 to 8 personnel
- During dredge season two crews of three each run two shifts – 5 days per week
- Approximately 30 % of Maintenance man hours per year spent on dredging
- Maintenance deferred



Other Adverse Impacts

- Increased dredging necessary for Turn Basin
- Potential grounding of loaded cargo vessel
- Double handling of silt as Port dredges then Corps of Engineers dredges
- Cost to Corps of Engineers

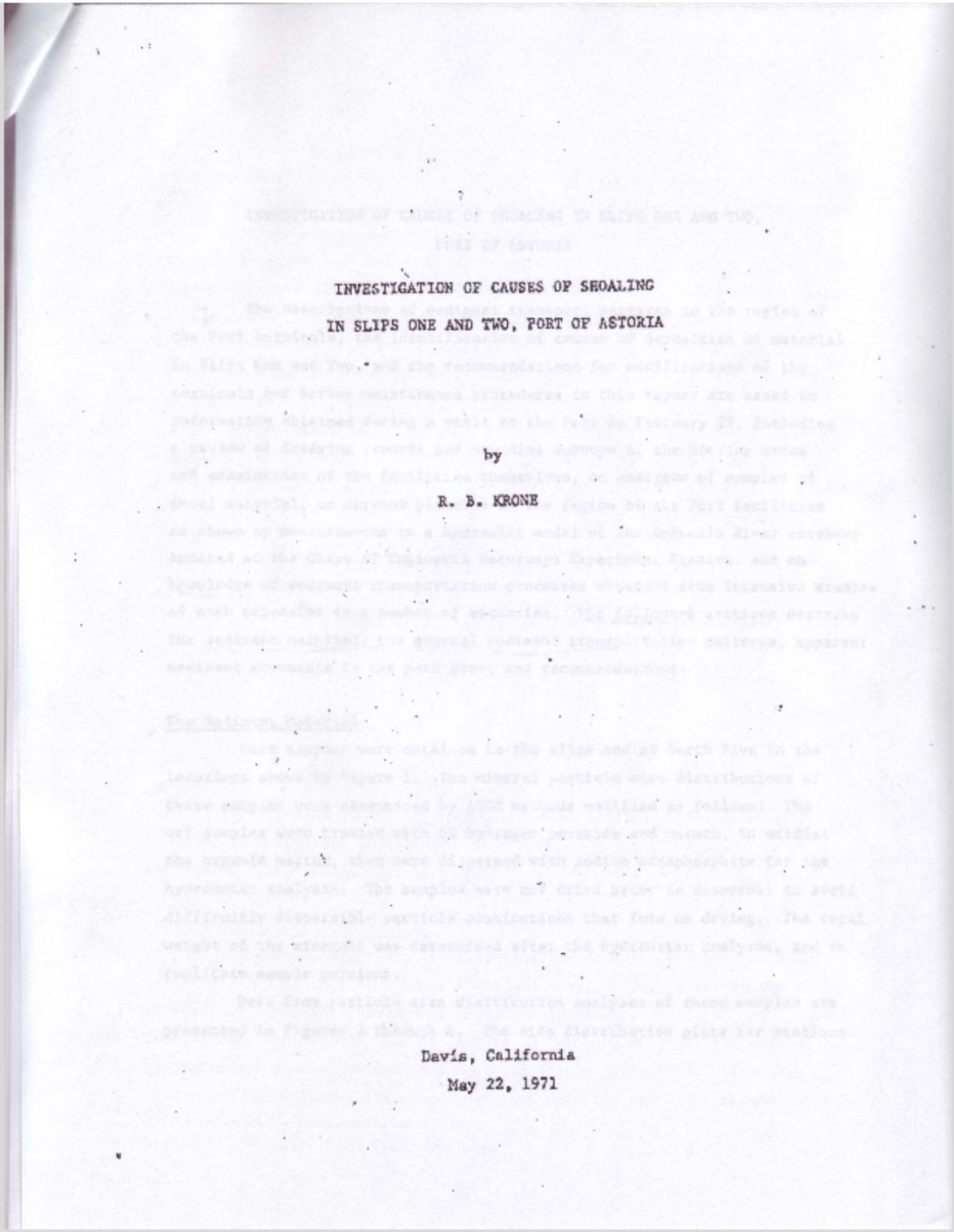
Possible Contributing Factors

- Krone Report
- Dredging Upstream
- Hydrology
- Pier Design
- Young's Bay
- Other

Investigation of Causes of Shoaling in Slips One and Two, Port of Astoria

By R. B. Krone

1971



INVESTIGATION OF CAUSES OF SHOALING

IN SLIPS ONE AND TWO, PORT OF ASTORIA

by

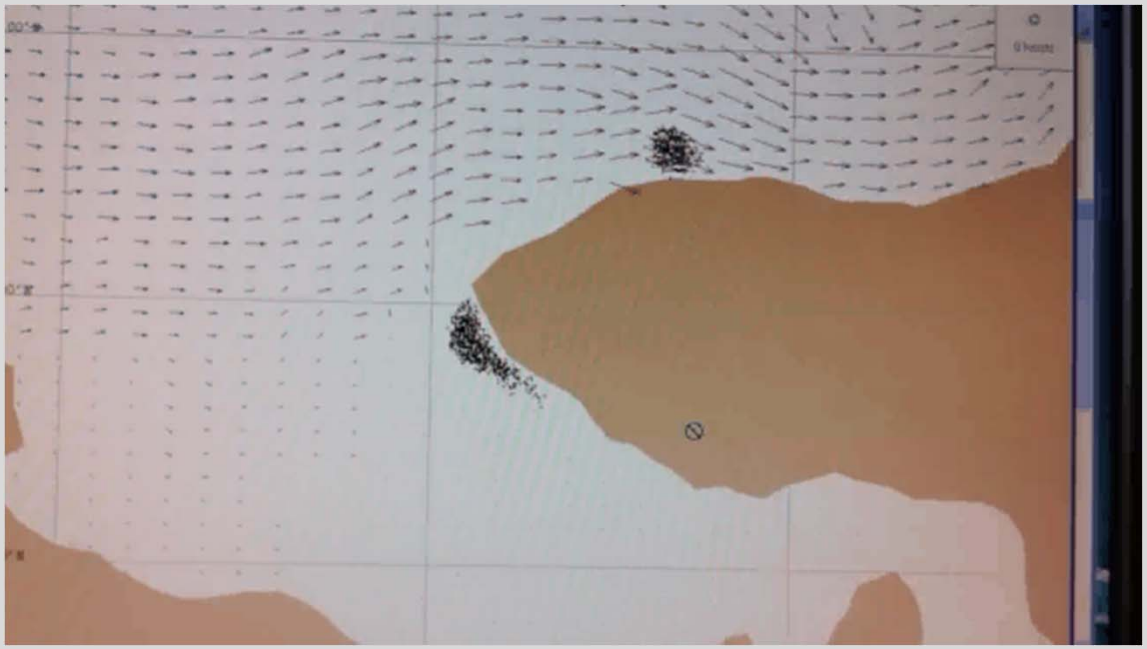
R. B. KRONE

Davis, California

May 22, 1971

- Fine sediment as land erosion particles carried by the Columbia, Young's, & Lewis and Clark Rivers
- Onshore breezes generate disturbance which suspend materials
- Suspended sediment can move downstream from the Bay during the ebb then upstream with bottom currents to the slips during the flood

N.O.A.A. GNOME Simulation



- The shape of the 18 ft. contour in Slip Two supports the conclusion that most of the shoal deposits from water entering the slip during flood flows

- A barrier to flow…at the end of Pier Three is needed

- The proposed turning basin…should be dredged to be as deep or deeper than the slips

Solutions ?

- Continue minimum maintenance dredging
- Corps of Engineers dredging Turn Basin
- Wing Dams
- Other ?

Recommendations

- Study / Examination of benefits of Wing Dam installation to reduce infill of Port of Astoria Pier areas
- Financial assistance and support for Port request for Corps of Engineer funding
- Support 2013 request for Turn Basin dredge funding

Benefits of Solutions

- Reduced Dredging Costs to Port and Corps of Engineers
- Employment for Clatsop County and Oregon