WASHINGTON STATE
Department of Ecology

East Waterway Site Cleanup

Public Open House

July 14, 2015

East Waterway

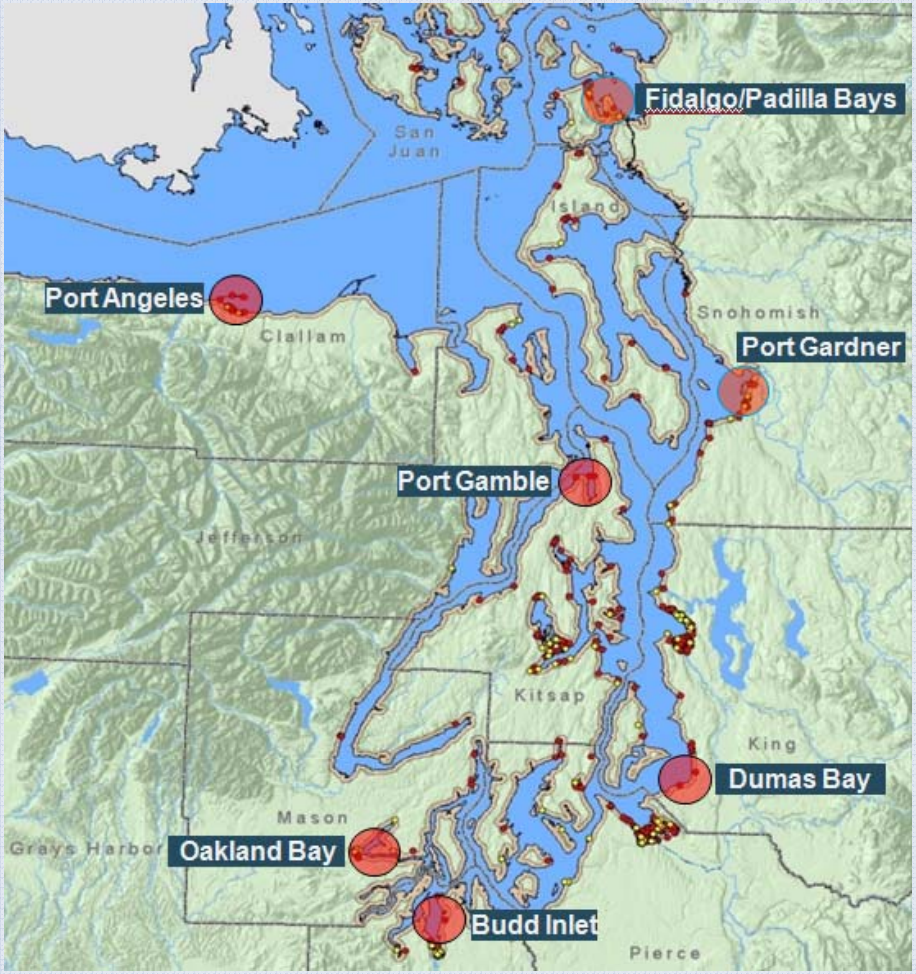
Today's Agenda

Dawn Hooper, Ecology, Facilitator

6:45	Welcome and overview	*Barry Rogowski, Ecology*
6:50	Port Gardner Baywide	*Andy Kallus, Ecology*
7:00	East Waterway Site	*Andy Kallus, Ecology* *Pete Adolphson, Ecology*
7:30	Question and answer period	*Dawn Hooper, Ecology*
8:00	Open house – visit stations and ask questions, provide input	

The Puget Sound Initiative (PSI)

- Intended to restore and preserve the health of Puget Sound
- Cleanup near shore sites throughout Puget Sound
- Port Gardner one of 7 priority Bays



Port Gardner PSI Cleanup Sites

The Puget Sound Initiative (PSI)

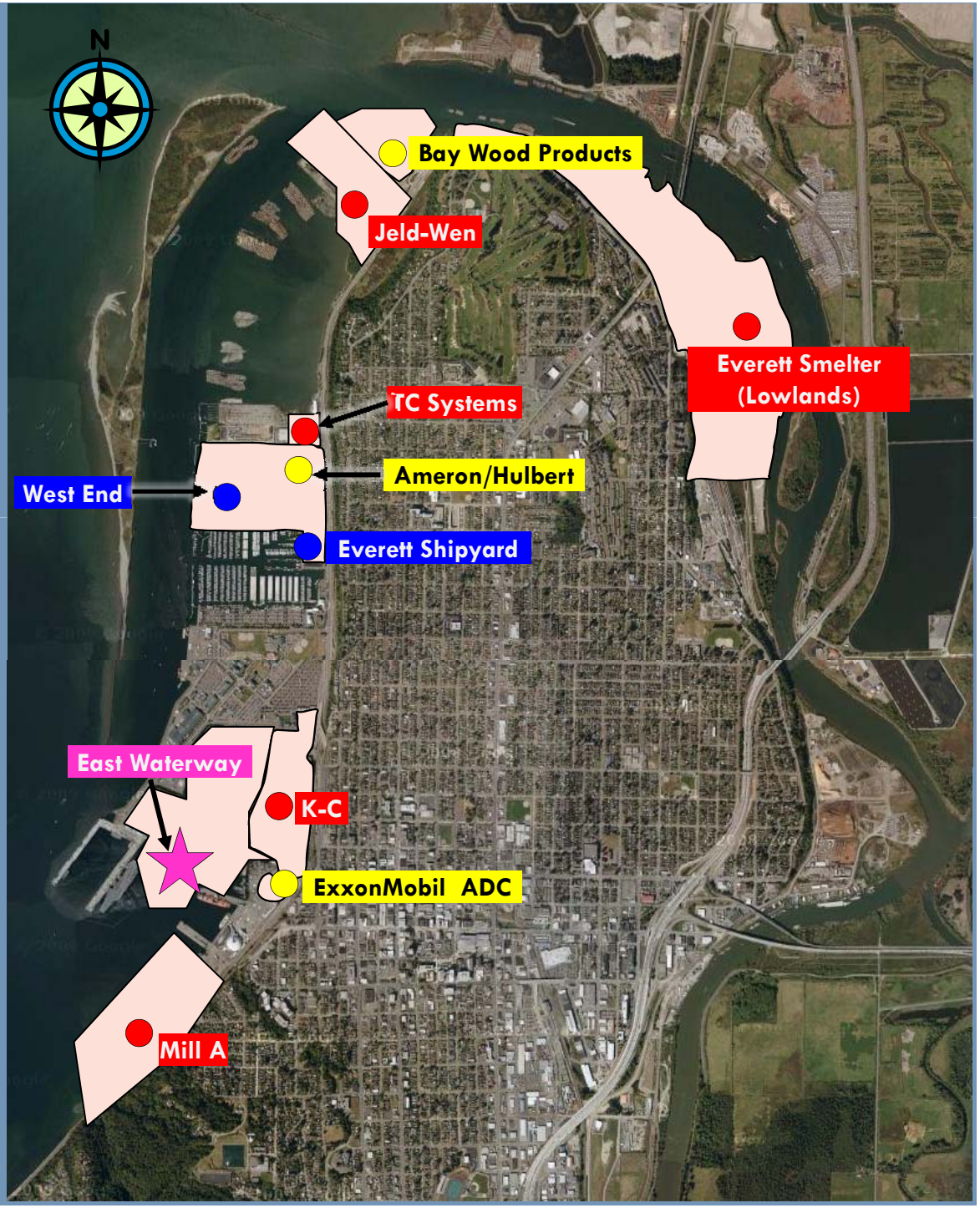
East Waterway Cleanup

- Importance to the community
- Ecology's commitment
- Keys to success

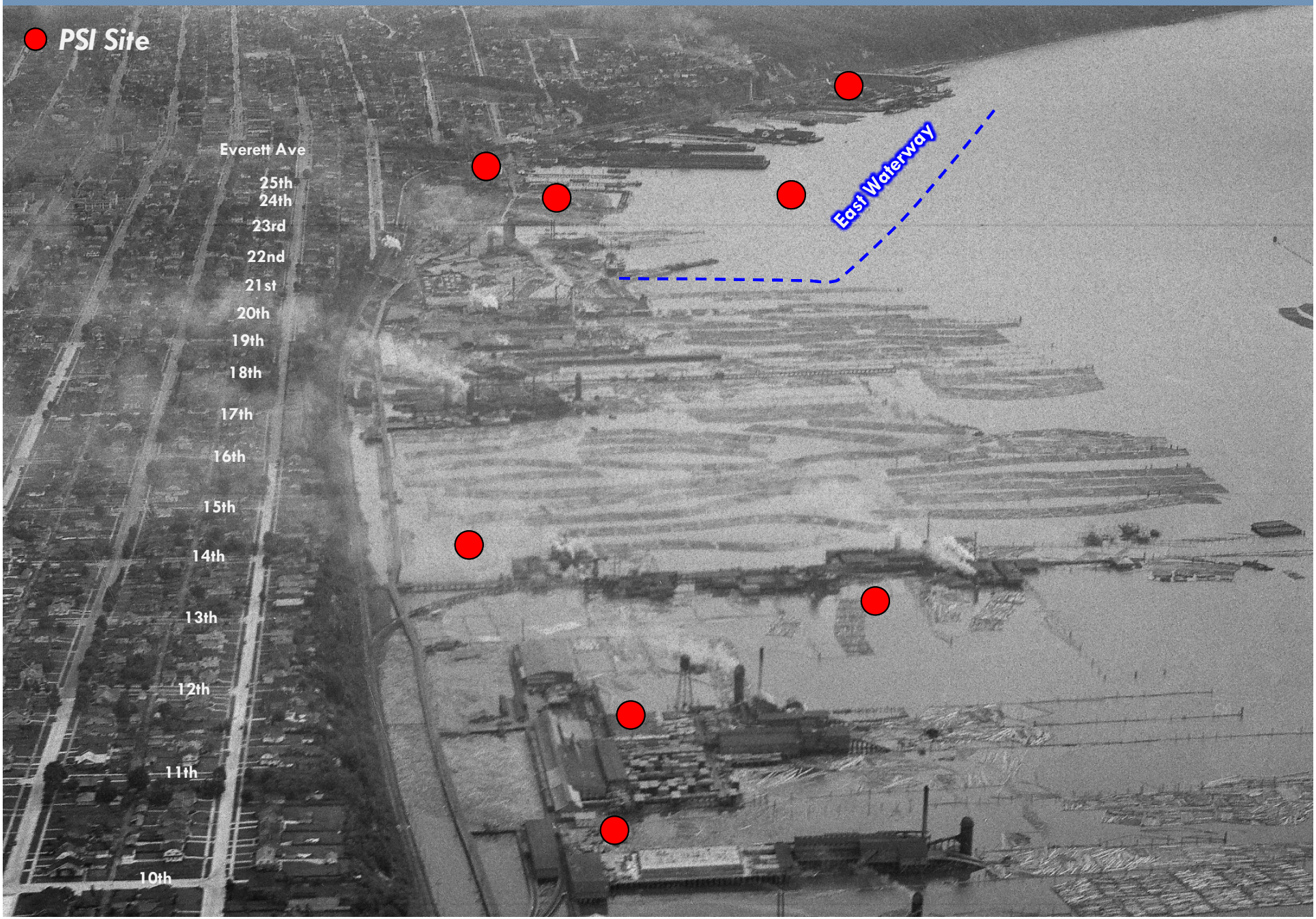
PSI Site Status

- Cleanup Complete
- Investigation Complete – moving towards cleanup action
- Investigation Underway

Cleanup Areas

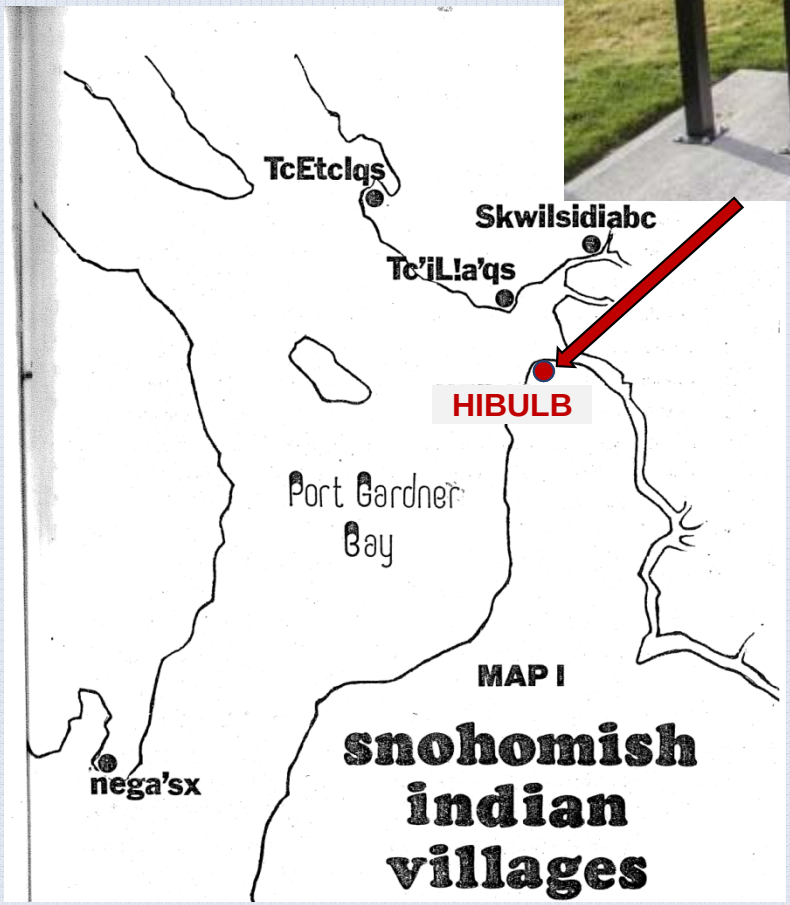


Historical Everett – 1928



2006 Aerial Photo

Tribal History



Mother of chief William Shelton, who was born at Hibulb, 1905

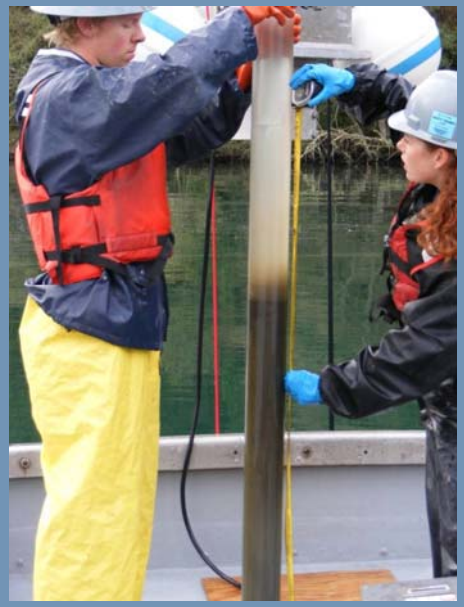
Photo by Norman Edson, Courtesy Everett Public Library (Image No. 070)

2008 Baywide Study

- Wide Coverage
- Four Focus Areas

2008 Baywide Study

- 93 locations
- General condition of the sediments
- Distribution of wood waste



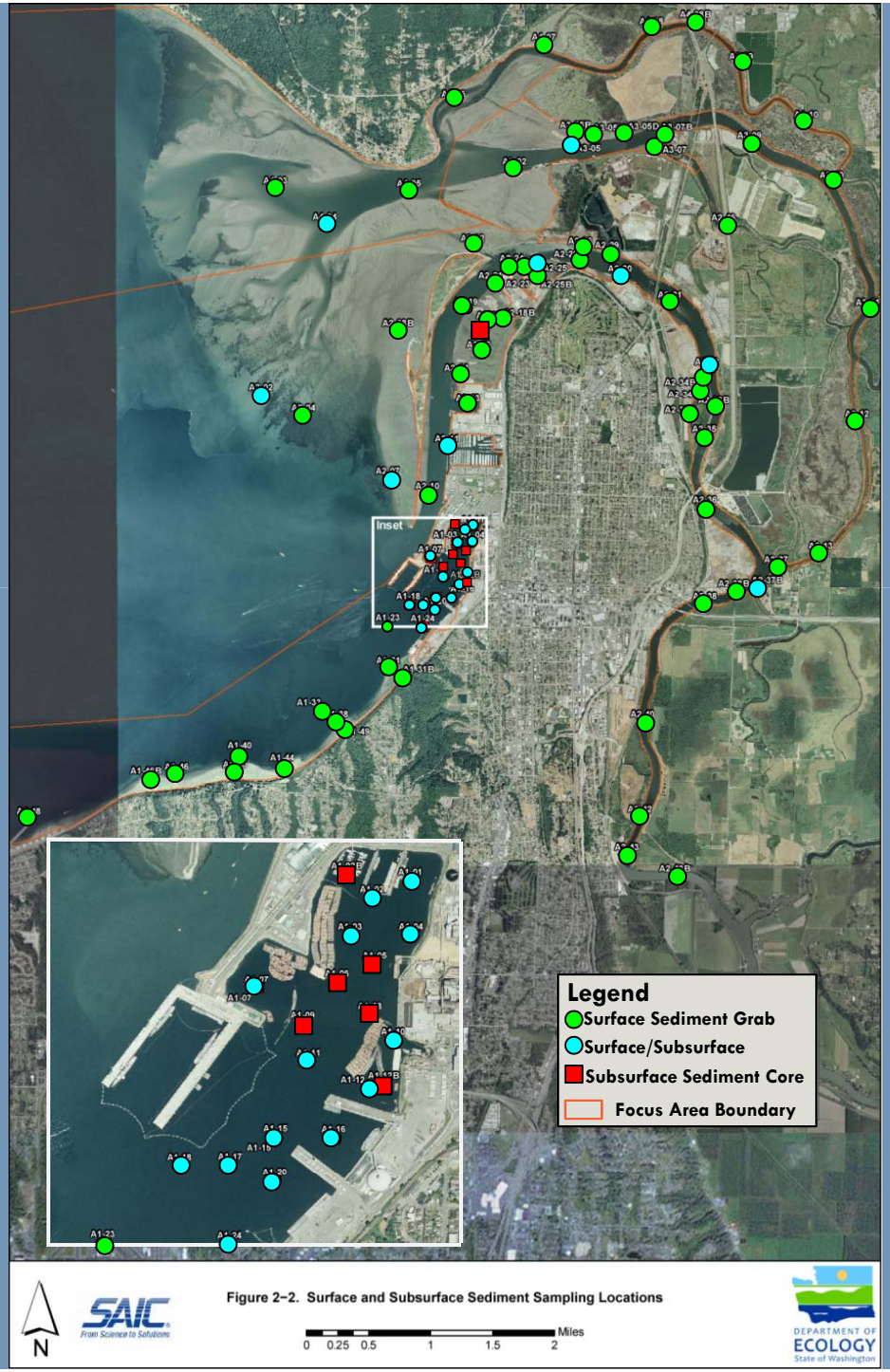
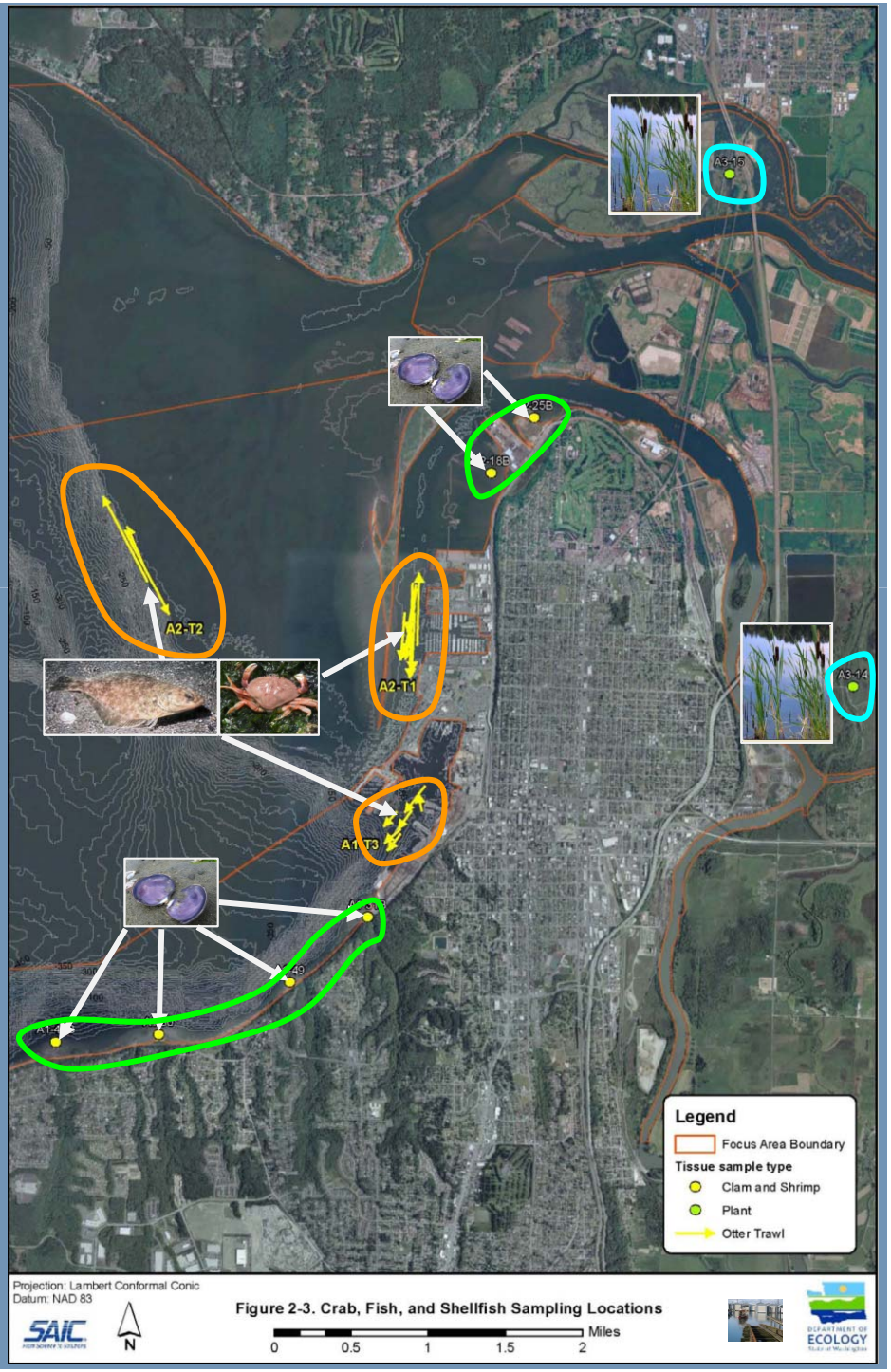


Figure 2-2. Surface and Subsurface Sediment Sampling Locations

2008 Baywide Study

- Identify concentrations of chemicals in tissue (fish, shellfish, plant)



Underwater Camera Images

Healthy Sediment with Eelgrass – west of Jetty Island

Wood Waste – Low Oxygen Conditions – East Waterway

2008 Baywide Study

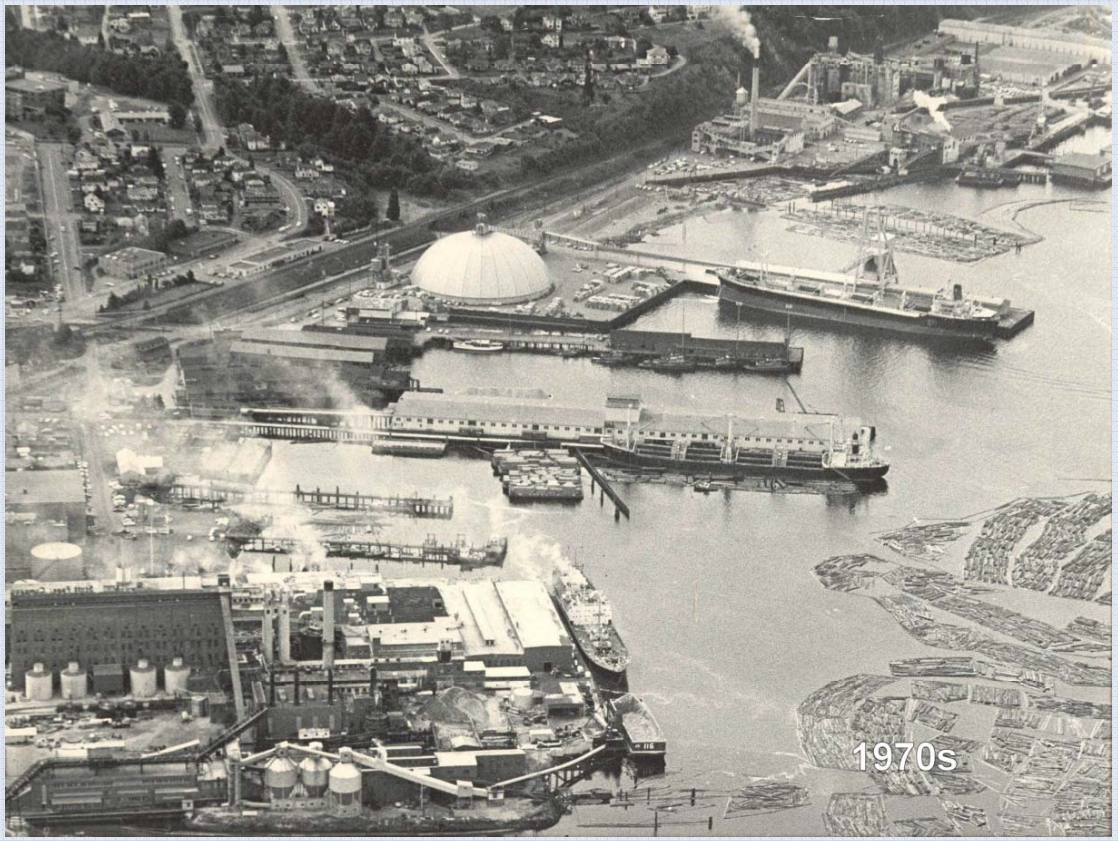
Results

- **East Waterway sediments are the most impacted**
  - Biological toxicity and chemical exceedances
  - Higher levels of Dioxins/F urans
  - Highest wood debris accumulations
- **Tissue**
  - **Dioxin/Furans** – Detected in the tissue meat; high concentrations in the fatty material
  - **Polychlorinated biphenyls (PCBs)** – Non-detect in the tissue meat; detected in the fatty material
  - **Metals** – Low levels detected

East Waterway Area

Background

- Area dominated by wood products industries in the early 1900s
- Created in the 1930s by the Port to support deepwater development
- <u>Major uses</u>
  - Navy operations & shipyard
  - Navy homeport
  - Wood products/ Pulp and Paper manufacturing
  - Port Terminals – waterfront industrial & shipping
  - Bulk petroleum storage
  - Industrial manufacturing
  - Tug boat operations
  - Log rafting and handling



East Waterway Area – 1930s

East Waterway Area – 1940s

East Waterway Area – 1960s

East Waterway Area – 1970s

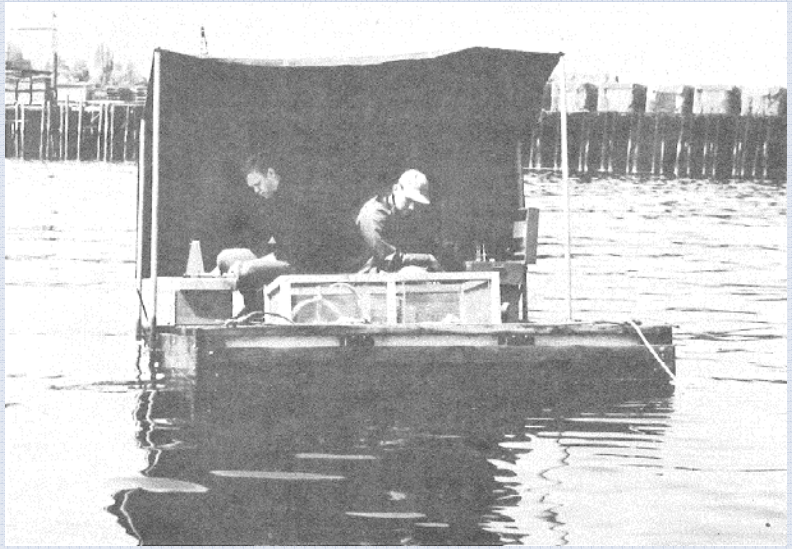
East Waterway Area – 1980s

East Waterway Area – 1990s

East Waterway Area – 2013

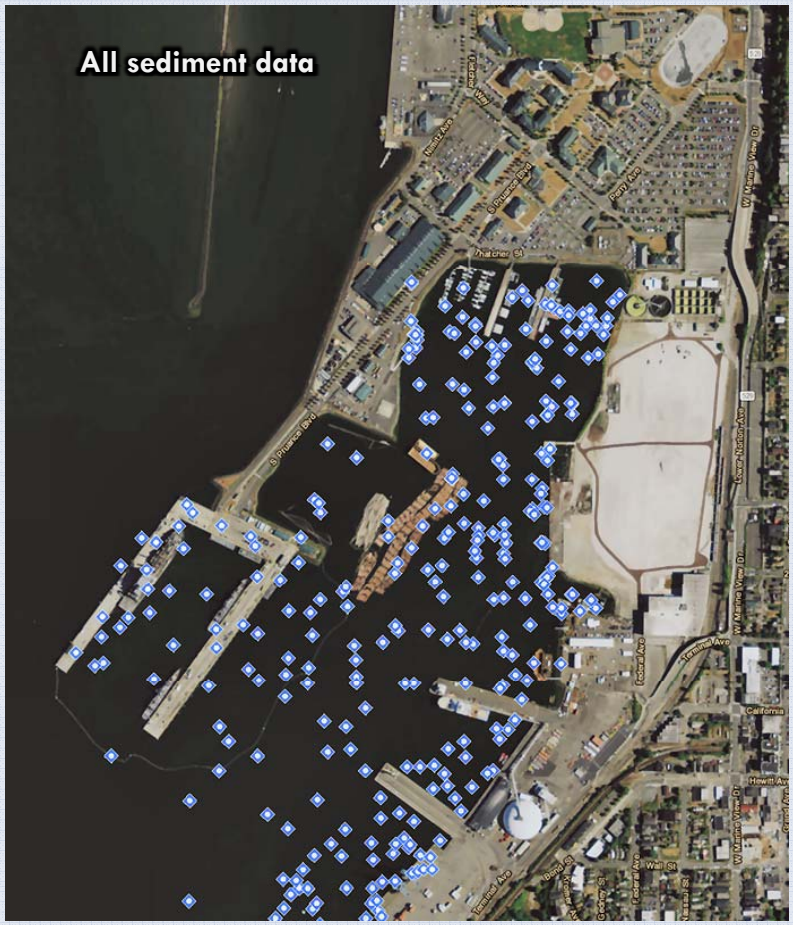
Historical Conditions

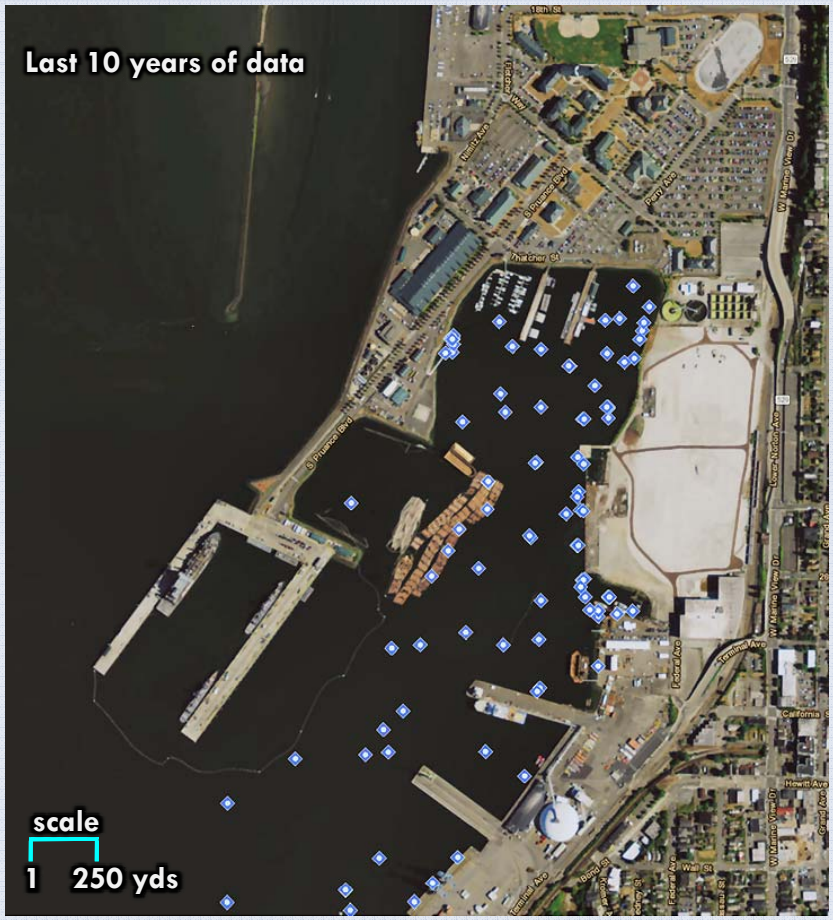
- **1930s to1940s**
  - Low dissolved oxygen
  - Sludge deposits
  - Fish kills
- **1951** – Re-routed sulfite waste liquor from the pulp mills to deepwater
- **1960s** – Large sludge deposits, wood waste, high sulfides, low dissolved oxygen, toxic to fish
- **1980s** – Began sampling sediment chemistry. Noted high wood waste accumulations
  - Whole logs – pilings, loose logs, bundled logs
  - Wood fragments, wood chips, tree bark and sawdust



Sediment Chemistry

- **Existing Sediment data – 1980s to 2015**



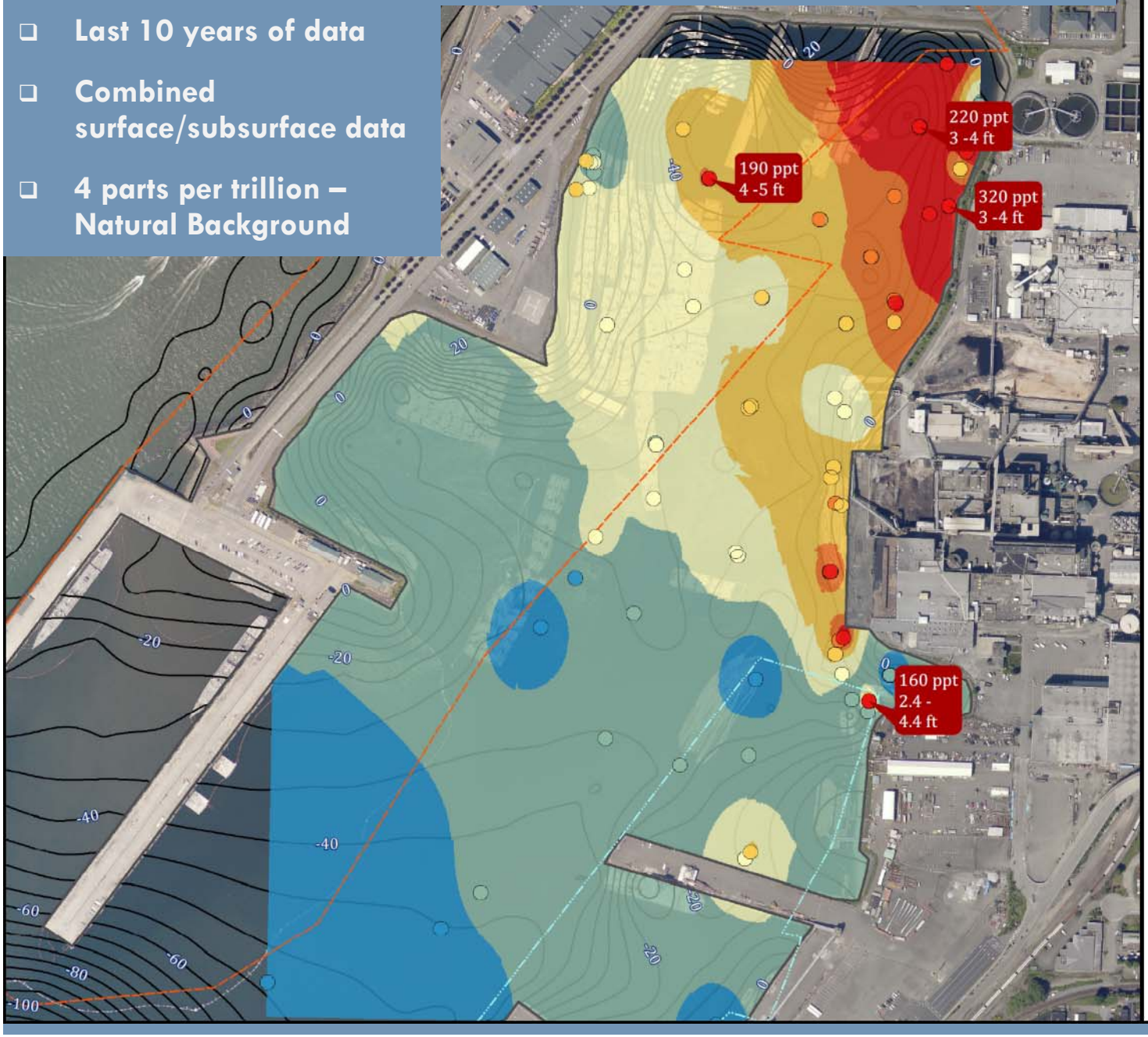


Historical Sampling

- **Sediment Management Standard (SMS) Exceedances**
  - **Chemistry**
    - Dioxins/furans
    - Polychlorinated biphenyls (PCBs)
    - Polycyclic Aromatic Hydrocarbons (PAHs)
    - Semivolatile Organic Compounds (mostly phenols and phthalates)
    - Metals
  - **Biological toxicity**

Dioxin/Furan Sediment Contamination

- Last 10 years of data
- Combined surface/subsurface data
- 4 parts per trillion – Natural Background



East Waterway: Dioxin/Furan TEQ

All Sample Depths
Data from 2004-present (DW, ppt)

Dioxin/Furan - Field Samples

- < 4
- 5 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- > 80
- PMA Boundary

Dioxin/Furan TEQ - IDW

- < 4
- 5 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- > 80
- State Owned AL
- Depth (rel MLW)

Data from EIM 6/9/14
IDW using GA

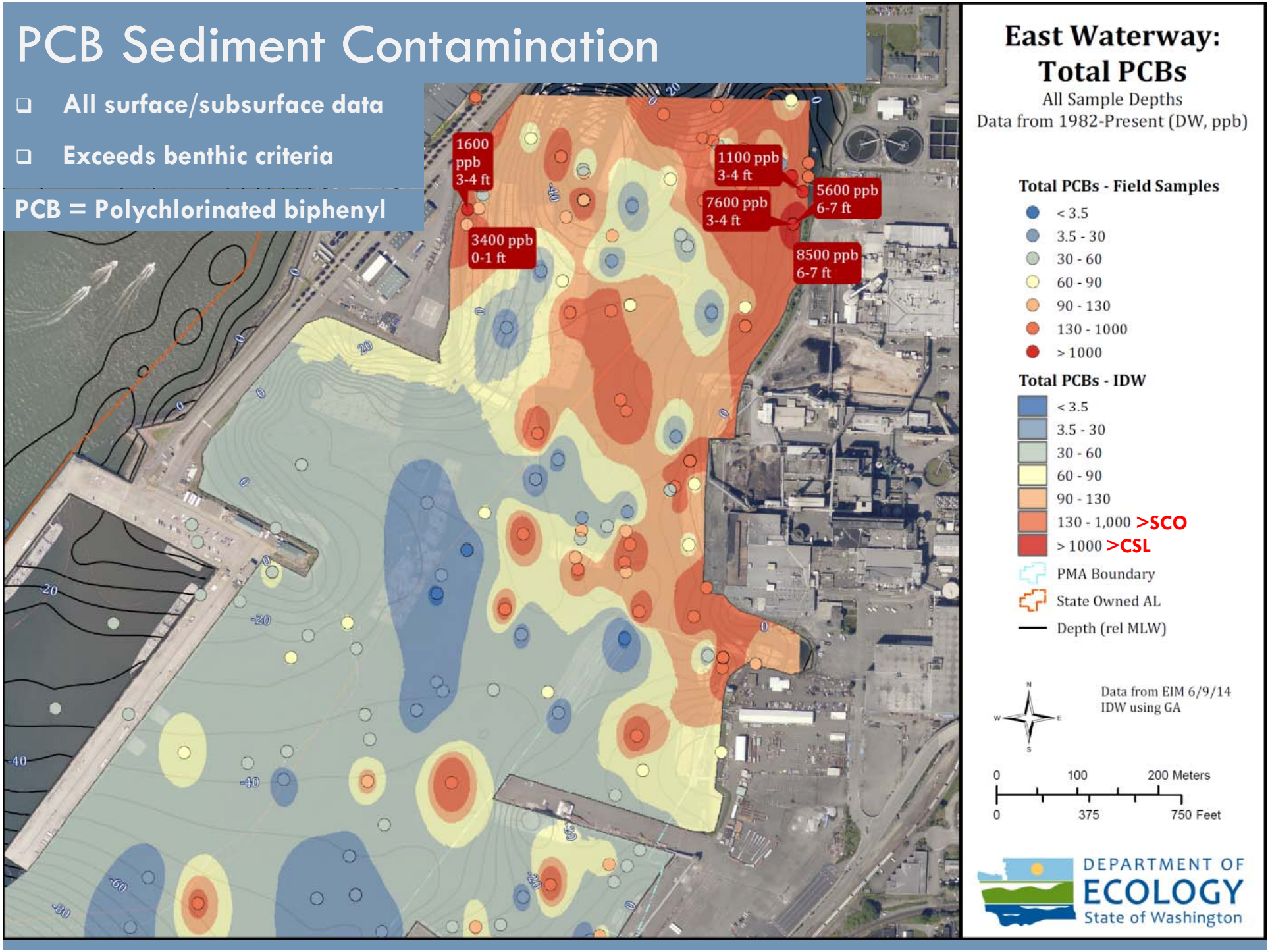
0 100 200 Meters
0 400 800 Feet

DEPARTMENT OF ECOLOGY
State of Washington

PCB Sediment Contamination

- All surface/subsurface data
- Exceeds benthic criteria

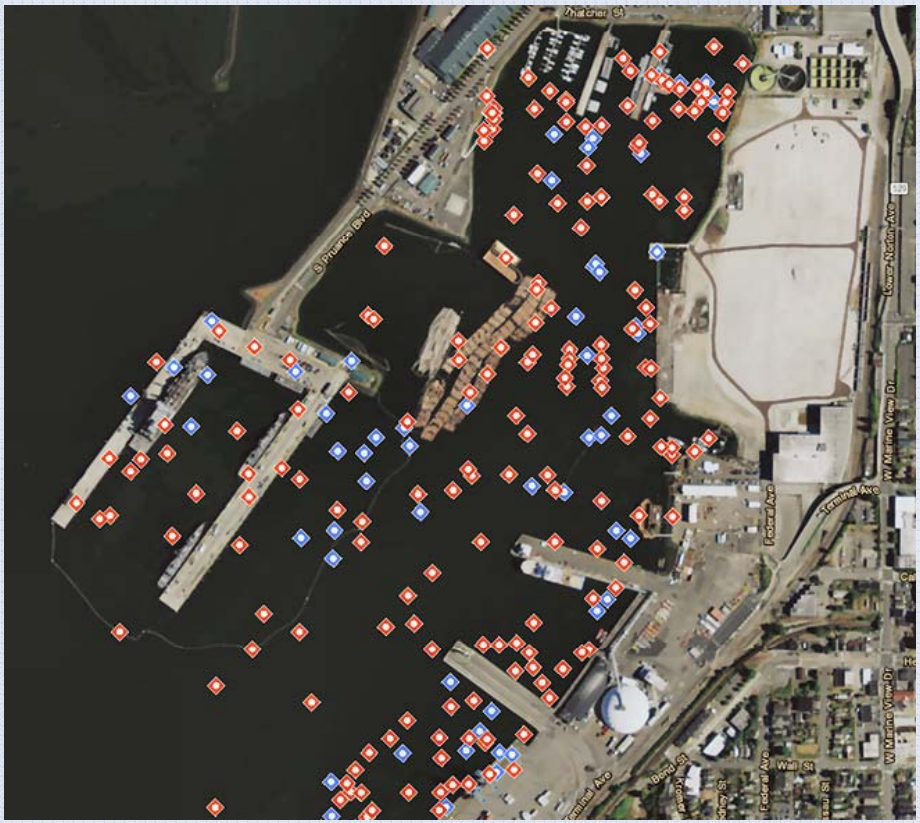
PCB = Polychlorinated biphenyl



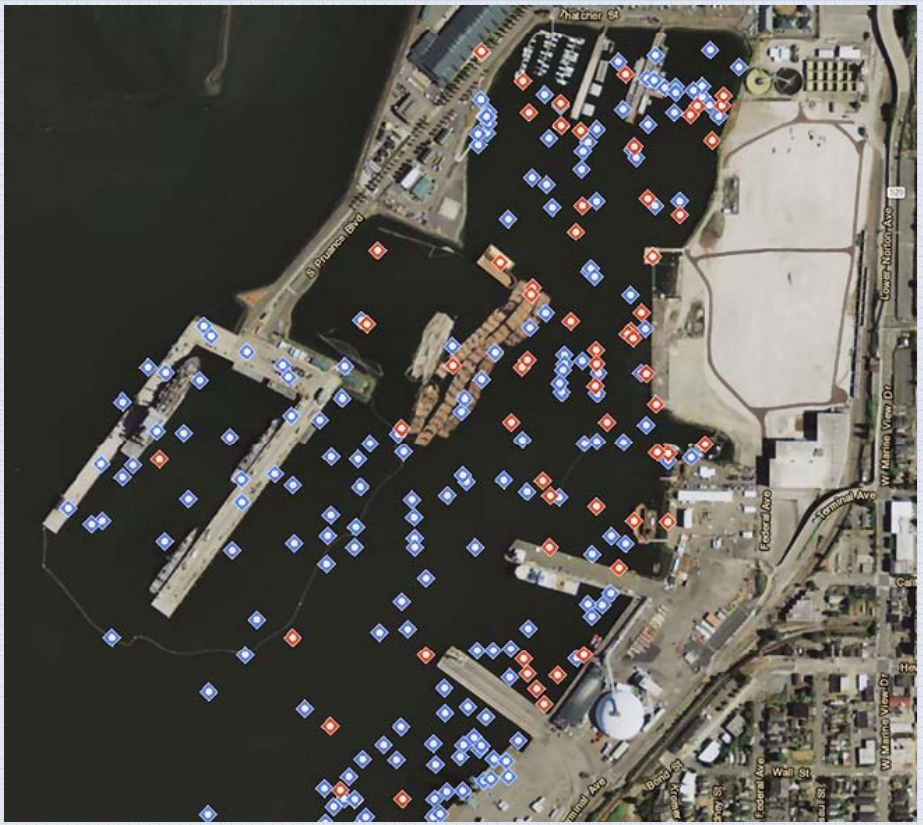
PAH Sediment Contamination

- **PAHs – Reviewed all surface/subsurface data**

Exceeds Regional Background



Exceeds Benthic Criteria



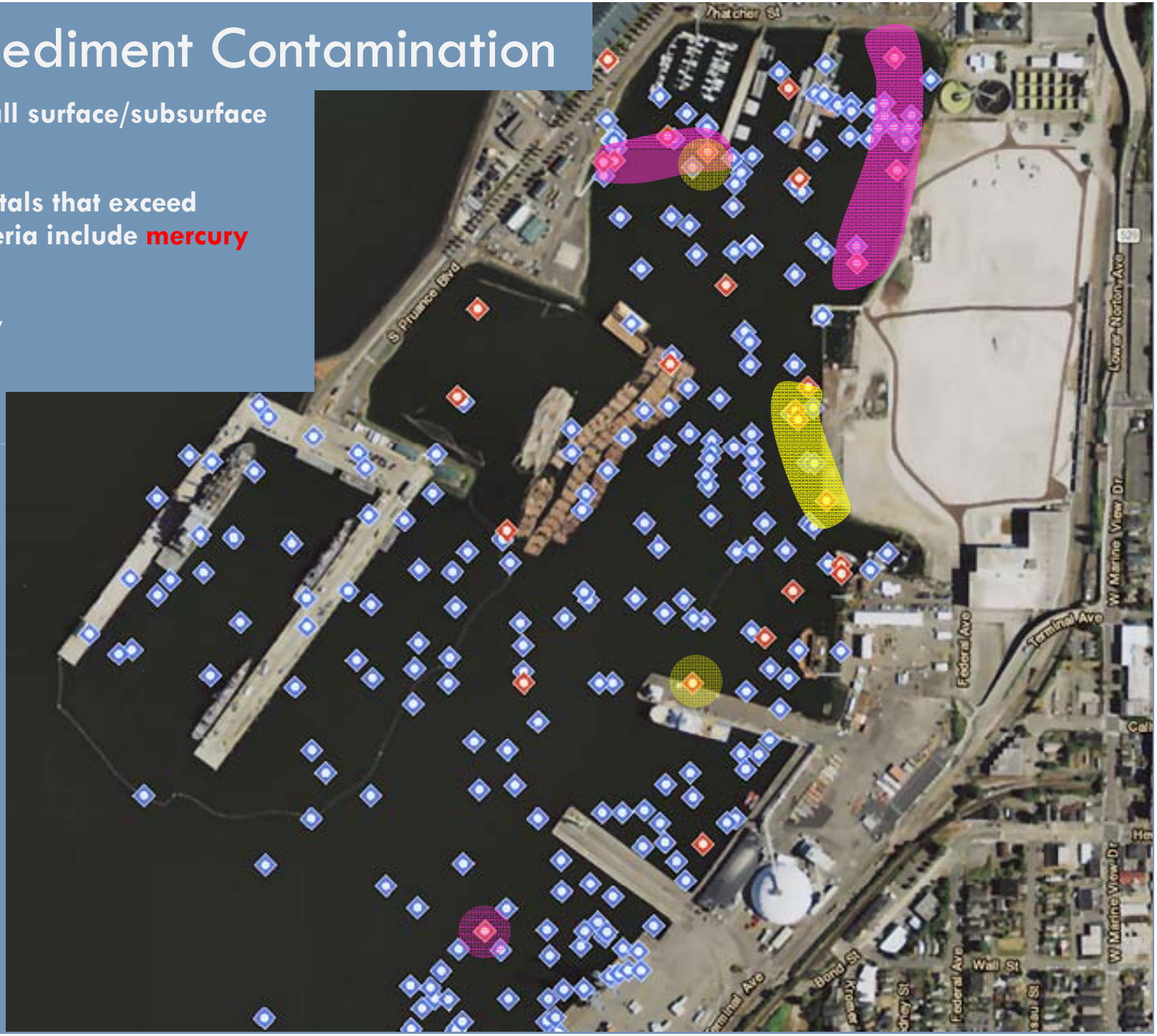
PAH = Polycyclic Aromatic Hydrocarbon

Metals Sediment Contamination

- Reviewed all surface/subsurface data
- Primary metals that exceed benthic criteria include **mercury** and **zinc**

Highest Mercury

Highest Zinc

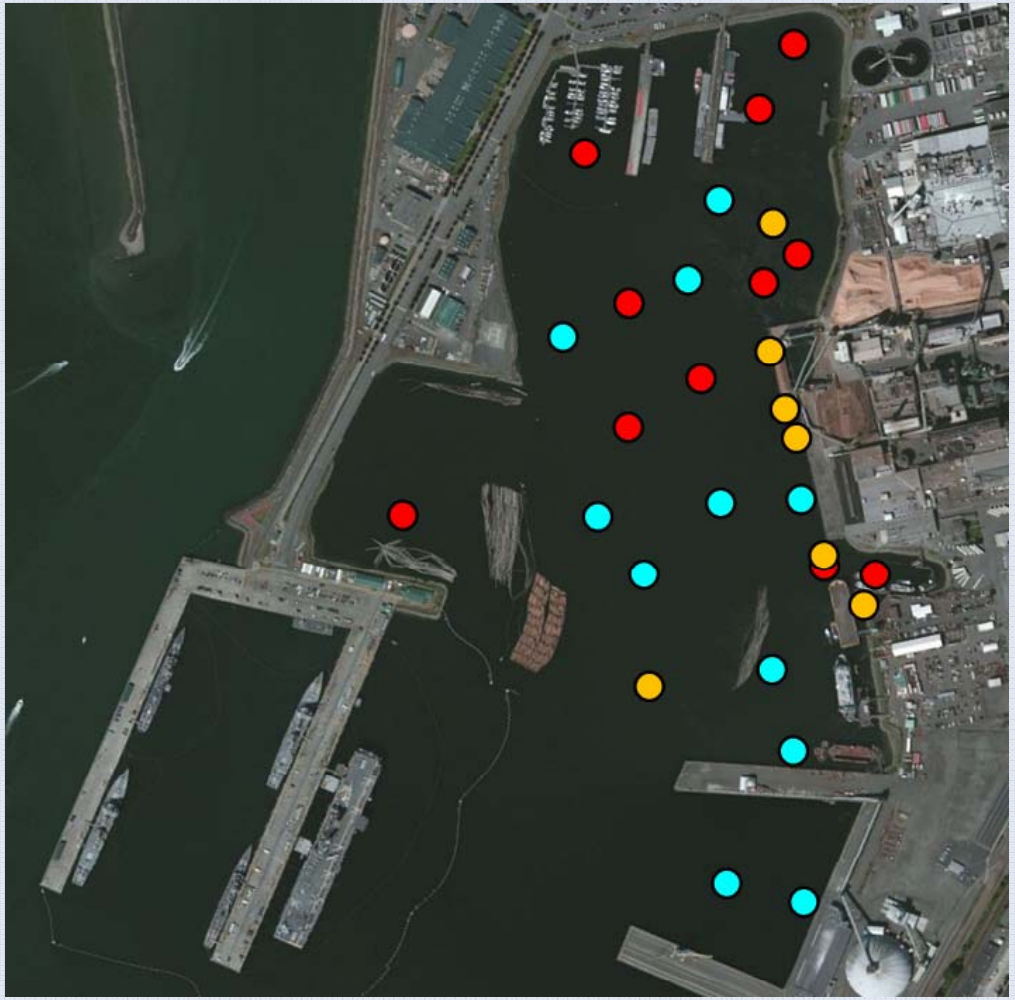


Biological Toxicity

- **Data sets reviewed**
  - 2008 – Port Gardner Baywide Study
  - 2013 K-C data

- **CSL Exceedance**
- **SCO Exceedance**
- **No Exceedance**

SCO = Sediment Cleanup Objective
CSL = Cleanup Screening Level



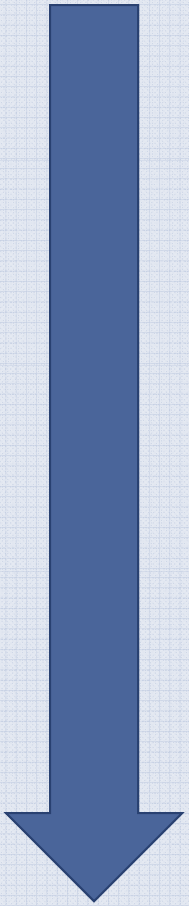
Wood Waste

- Area historically dominated by wood products industries
- Major log storage and handling area
- Barging/unloading wood chips
- State-owned aquatic lands leased for log storage and handling
- 2008 Baywide Study – Highest wood waste is in East Waterway

East Waterway Draft Agreed Order

- **Work to be Performed – In-Water Area**
  - **Develop an RI/FS work plan** – identify upland sources and remaining data gaps
  - **Perform the RI/FS Study** and prepare report
  - **Develop a draft cleanup action plan** (DCAP)
- **Upland Areas** – Will be addressed under a separate Agreed Order.

Formal Cleanup Process



Agreed Order

Public Comment Period

Remedial Investigation/
Feasibility Study Report (RI/FS)

Public Comment Period

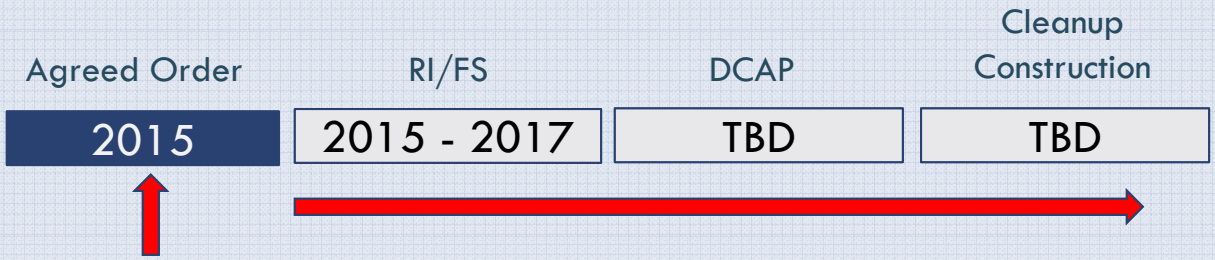
Draft Cleanup Action Plan (DCAP)

Public Comment Period

Cleanup Implementation

** **Interim actions** – may be conducted if warranted to partially address the cleanup of the site

Next Steps



- Finalize Agreed Order
- Complete RI/FS
- Issue draft Cleanup Action Plan (DCAP)
- Complete in-water cleanup
- Public comment period at each step

Key Points

- **Everett –** Long history of industrial use
- **Port Gardner** – Priority bay under the Puget Sound Initiative
- **Much of the waterfront is under cleanup agreements**
- **East Waterway**
  - **Large industrial waterway**
  - **Multiple upland sources and liable parties**
  - **Complex in-water cleanup takes time and money** – many stakeholders
  - **Main contamination issues**
    - **Wood waste**
    - **Dioxin/Furans**
    - **PCBs and PAHs**
    - **Metals – mostly mercury and zinc**

How to get involved

- Fill out a comment form tonight or take one to mail by July 30
- Review documents at the Everett Public Library
- Visit Ecology's Toxics Cleanup Website at: http://www.ecy.wa.gov/programs/tcp/sites_brochure/psi/everett/psi_everett.html

- **Send comments to:**
  - Andy Kallus—Site Manager
    WA Department of Ecology
    Toxics Cleanup Program
    PO Box 47600
    Olympia, WA 98504-7600

  - Andrew.Kallus@ecy.wa.gov

THANK YOU