WASHINGTON STATE
Department of Ecology

PSI Cleanup Sites – Port Gardner

Sound Living Conference
October 25, 2014

The Puget Sound Initiative (PSI)

- Began in 2005
- Includes a lot of people, organizations and governments
- Intended to restore and preserve the health of Puget Sound
- Cleanup near shore sites throughout Puget Sound
- Port Gardner one of 7 priority Bays

TCP's role in the Puget Sound Initiative

- Cleanup languishing aquatic/upland sites
- Control sources via cleanup, discharges
- Collaborate with others
  - Port Authorities, Local Governments, Private Sector, Tribes, State & Federal Agencies, other Stakeholders
- Offer incentives for cooperative cleanups
- Follow regulatory framework
- Remain flexible, creative

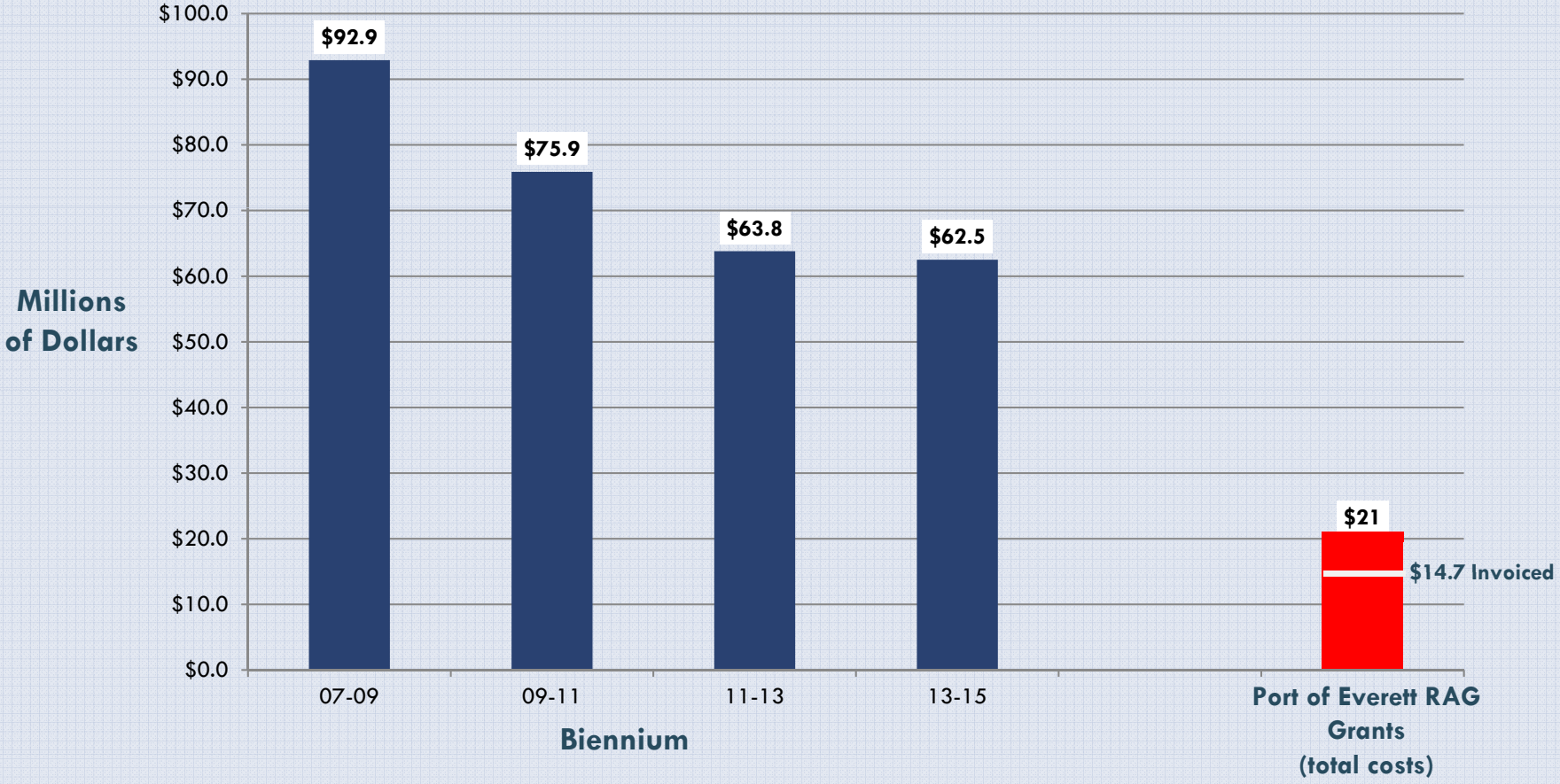
Kimberly-Clark Site - 2013

The Puget Sound Initiative (PSI)

PSI Operating Principles

Funding for Cleanups

TCP Remedial Action Grant Funding



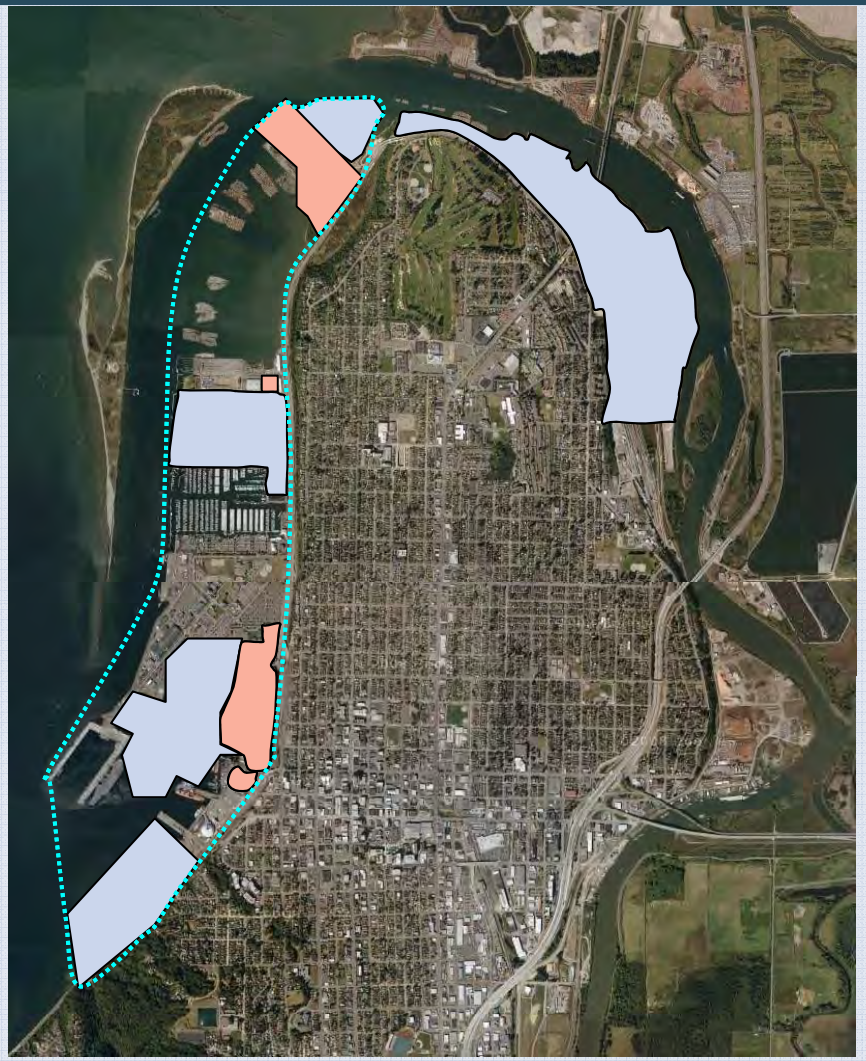
Port Gardner Baywide

Port Gardner PSI Cleanup Areas

Port is involved

Private Party, Port is not involved

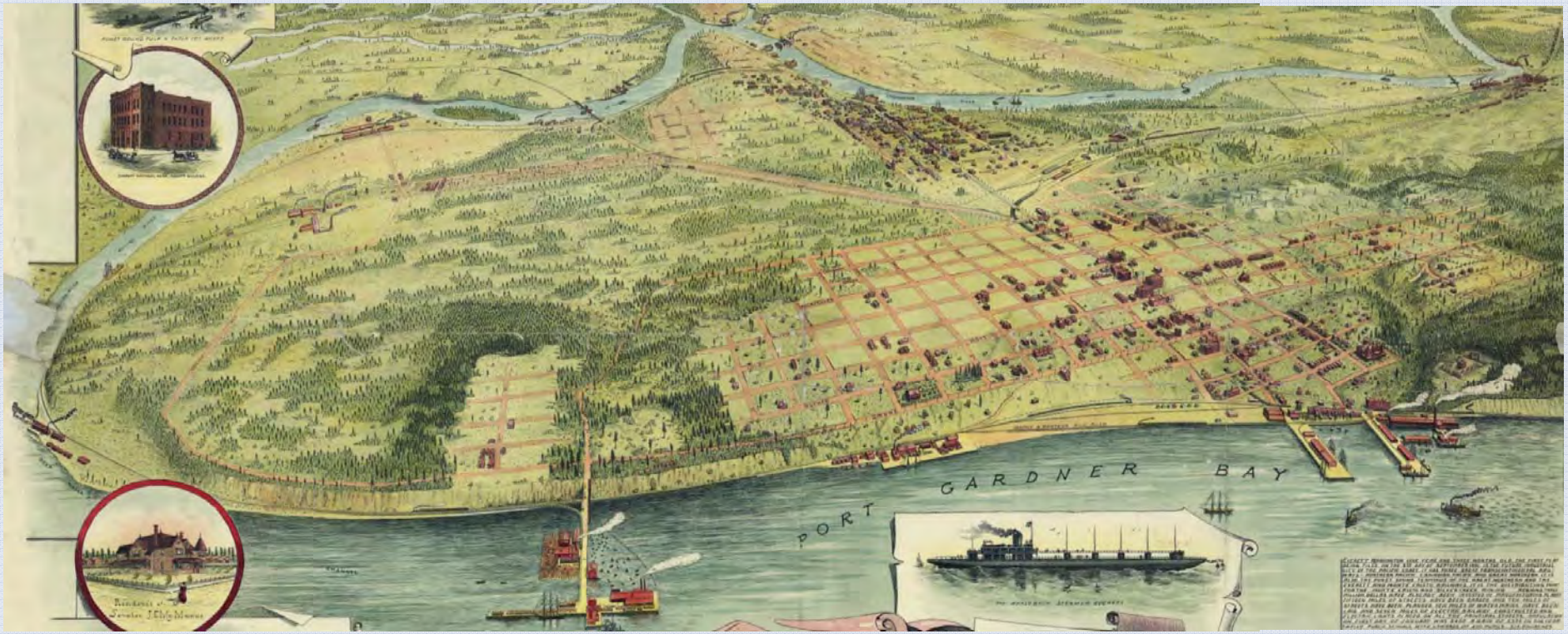
- **Main Waterfront** – 462 acres or close to 50% of the waterfront is being addressed under PSI



Port Gardner Baywide

Port Gardner PSI Sites

Historical Everett – 1893



Historical Everett – 1898-1901

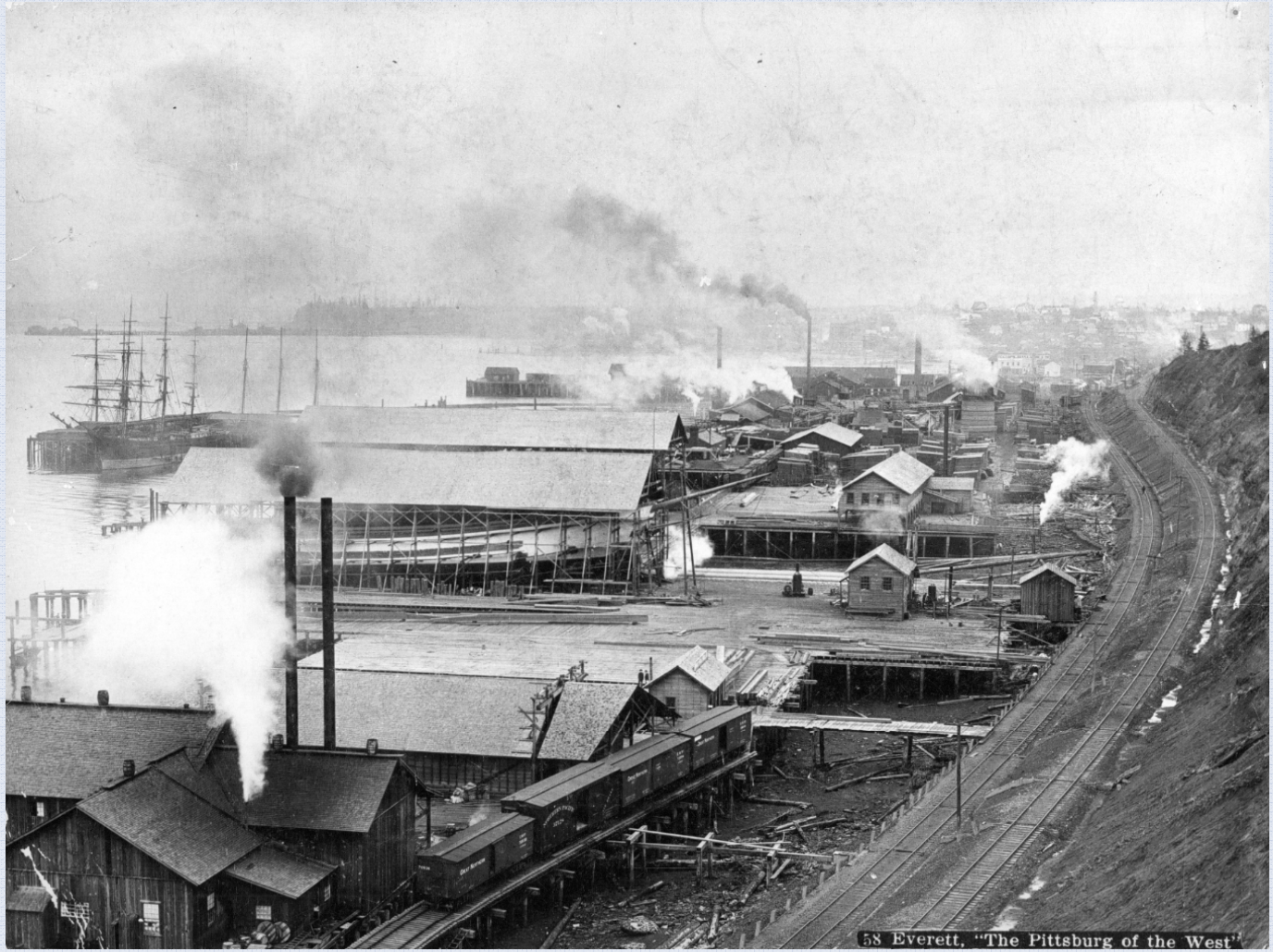


Photo Source:
Everett Public Library

Historical Everett – 1928

PSI Site

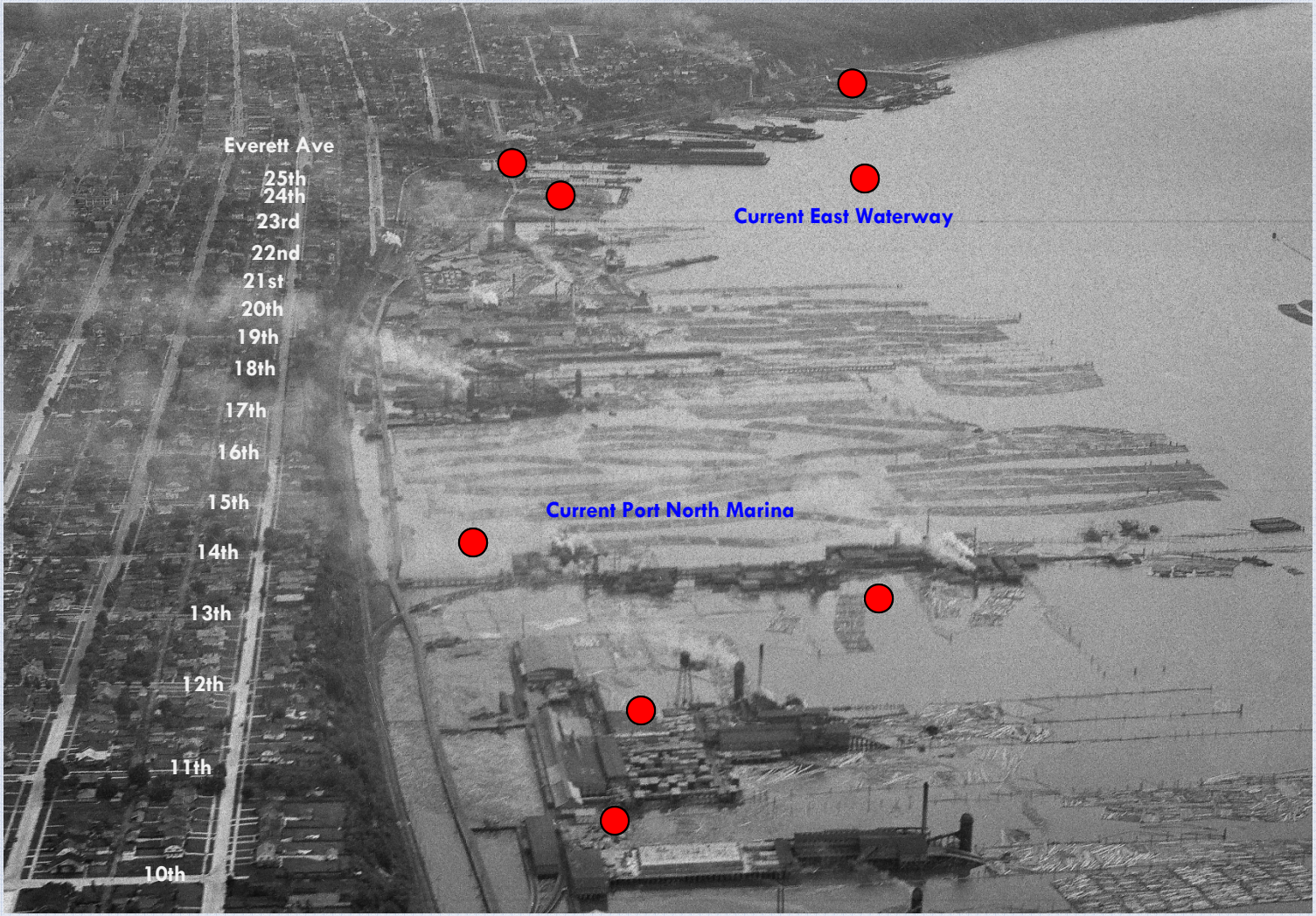


Photo Source:
Everett Public Library

Historical Everett – 1930s

Photo Source:
Port of Everett

Historical Everett – 1940s

Naval Shipyard – World War II

Photo Source:
Port of Everett

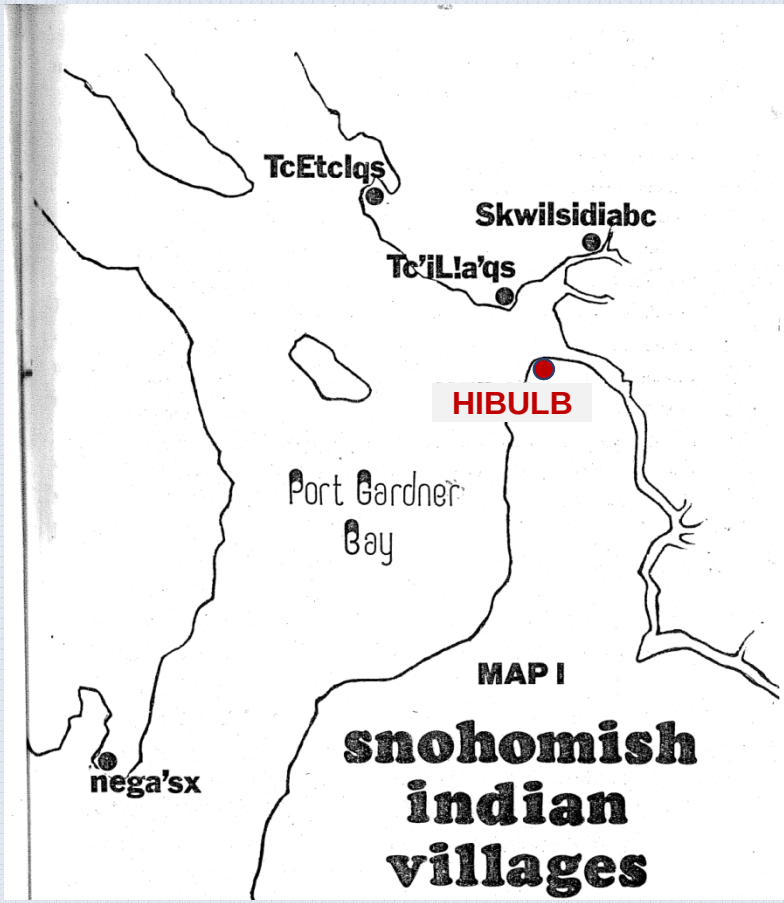
Port Gardner Baywide

2006 Aerial Photo

PSI Site

Photo Source:
Port of Everett

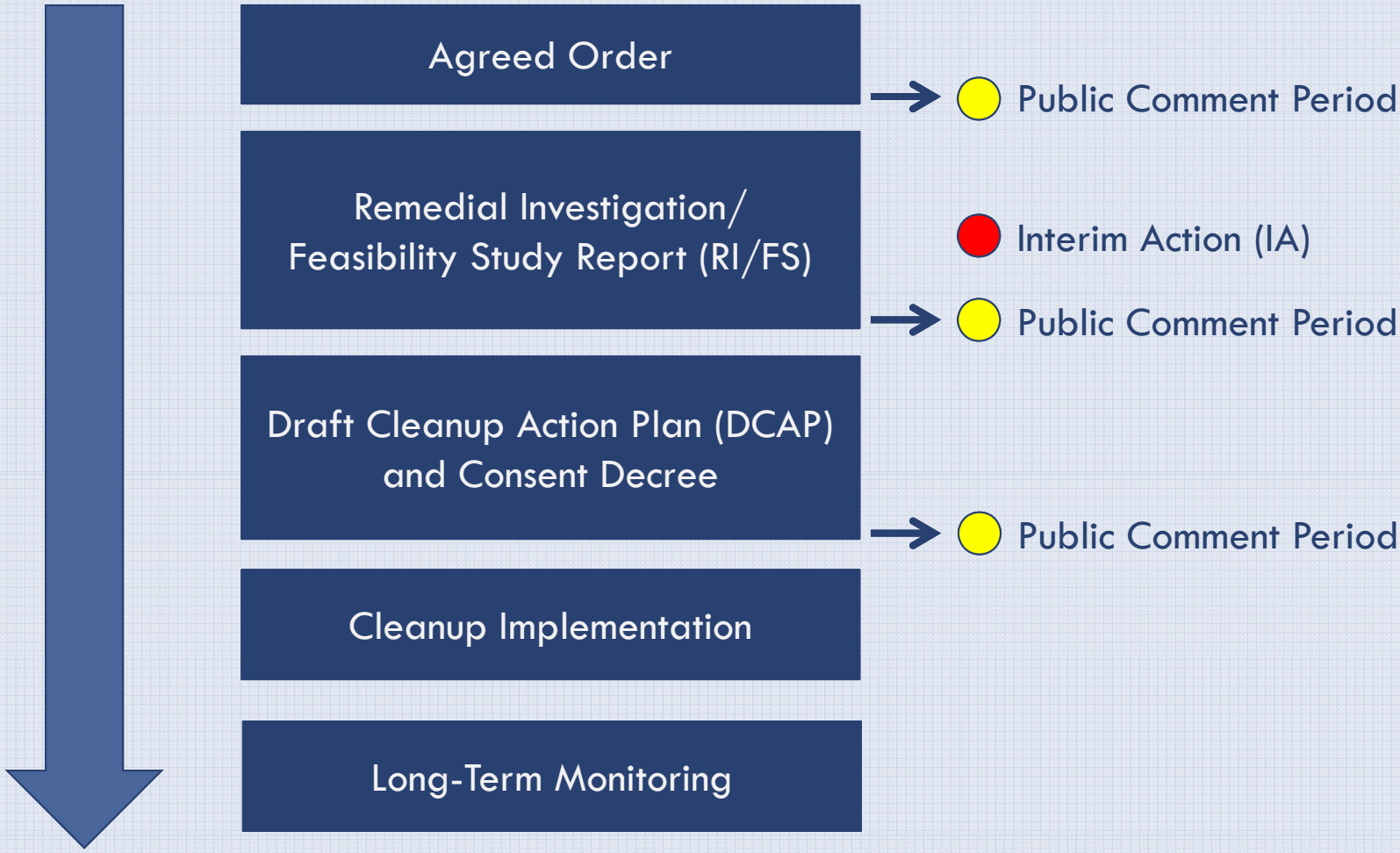
Tribal History



Mother of chief William Shelton, who was born at Hibulb

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

Formal Cleanup Process



Port Gardner Baywide

Site Status

- **Agreed Orders** – Complete at 9 sites
  - **2008 (4)** – Jeld-Wen, Everett Shipyard, West End, Bay Wood
  - **2009 (1)** – Ameron/Hulbert
  - **2010 (2)** – ExxonMobil, TC Systems
  - **2012 (2)** – Mill A, Kimberly-Clark
  - **2014** – Currently negotiating East Waterway

Port Gardner Baywide

Site Status

- **RI/FS Investigations**
  - **Complete**
    - West End
    - Everett Shipyard
    - Ameron/Hulbert
  - **Awaiting Public Comment**
    - Bay Wood – Spring 2015
    - TC Systems – Spring 2015
    - Jeld-Wen – Summer 2015
    - ExxonMobil ADC – Summer 2015

Port Gardner Baywide

Site Status

- **CAP/CD Complete**
  - **West End –** Cleanup Complete
  - **Everett Shipyard**
    - Upland Cleanup Complete
    - In-Water Cleanup – In Progress
  - **Ameron/Hulbert –** Out for public comment
- **CAP/CD – 2015 Public Comment**
  - **Bay Wood Products**
  - **Jeld-Wen**
  - **TC Systems**

Port Gardner Baywide

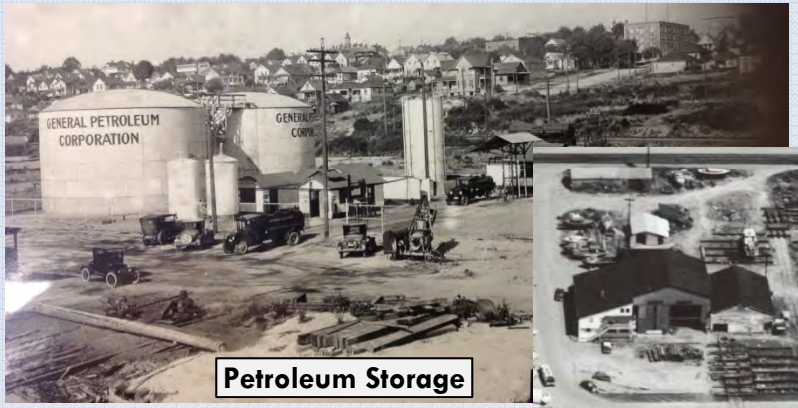
Site Status

- **Weyerhaeuser Mill A** – RI in progress
- **East Waterway** – Agreed order negotiations are underway
- **Everett Smelter (Lowland)** – Currently conducting an RI/FS to address historical contamination from the former Everett Smelter operation – *managed by Ecology's Northwest Regional Office*

General Site Characteristics

- **Sources**
  - Discharges to the bay
  - Fuel Storage Tanks
  - Maritime activities
  - Contaminated Fill
  - Milling
  - Manufacturing
  - Pulp and paper
  - Metal finishing
  - Smelting
  - Log rafting and storage
  - Pole treating
  - Refuse Burners

- **Site Media** – Soil, groundwater, marine sediment
- **Primary Contaminants** – Metals, petroleum, PAHs, PCBs, dioxins/furans



Petroleum Storage

Maritime

Port Gardner Baywide

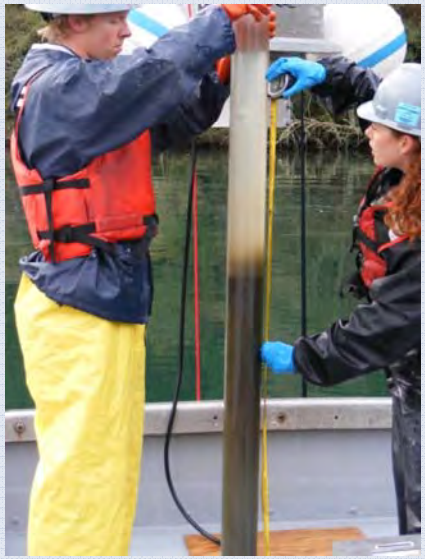
2008 Baywide Study

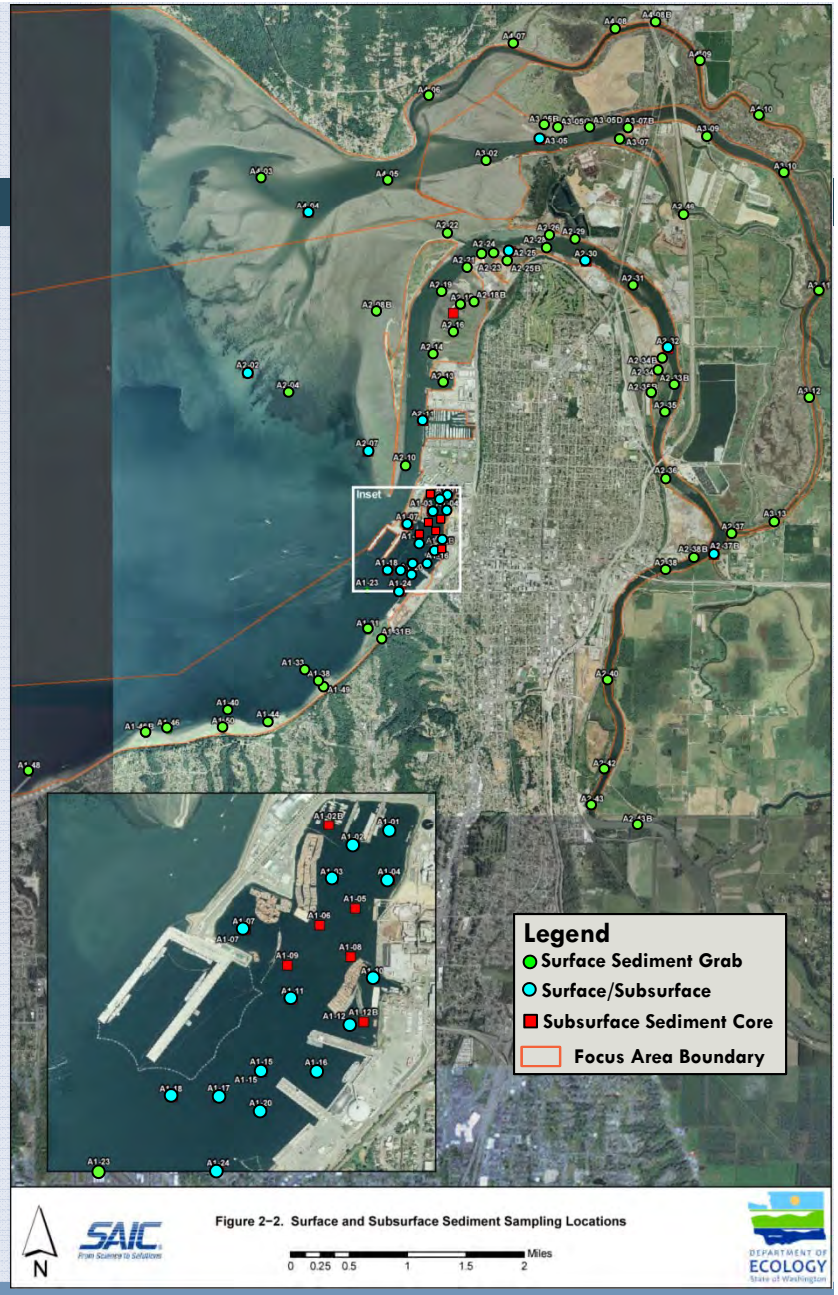
- Wide Coverage
- Four Focus Areas

Port Gardner Baywide

2008 Baywide Study

- 82 sampling locations
- General condition of the sediments
- Distribution of wood waste

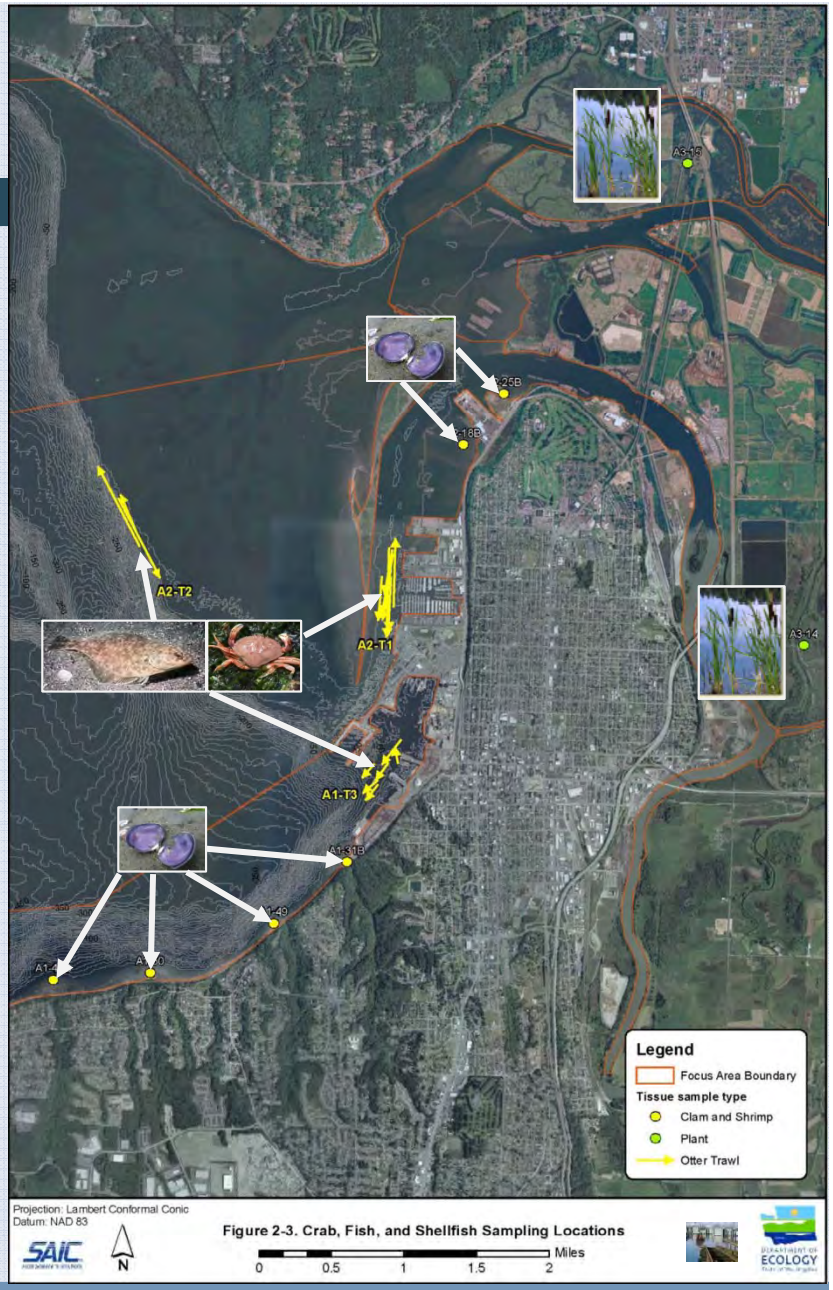




Port Gardner Baywide

2008 Baywide Study

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



Port Gardner Baywide

- **East Waterway/Mill A sediments are the most impacted**
  - Biological toxicity and chemical exceedances
  - Higher levels of Dioxins/Furans
  - Highest wood debris accumulations
- **Maulsby Mudflats and Sloughs**
  - Biological toxicity
  - Lower levels of Dioxin/Furans
- **Tissue**
  - **Metals** – Arsenic, copper, and zinc had the highest concentrations
  - **PCBs** – Non-detect in the tissue meat; detected in the fatty material (i.e., hepatopancreas)
  - **Dioxins/Furans** – Detected in the tissue meat; high concentrations in the fatty material
- **Department of Health** completed a health consult

2008 Baywide Study Results

Port Gardner Baywide

Underwater Camera Images

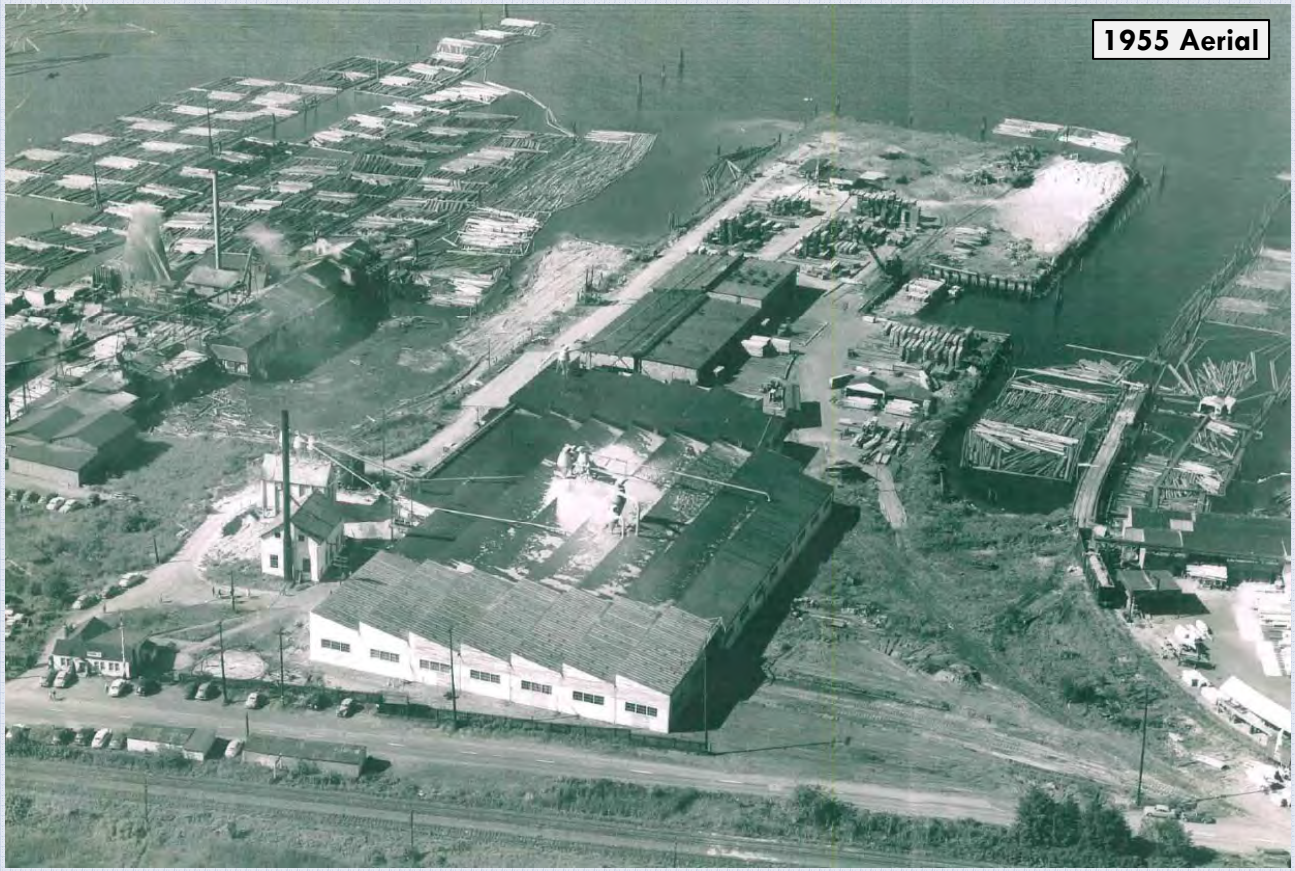
Healthy Sediment with Eelgrass – west of Jetty Island

Wood Waste – Anoxic Conditions – East Waterway

Jeld-Wen Site

Jeld-Wen Site

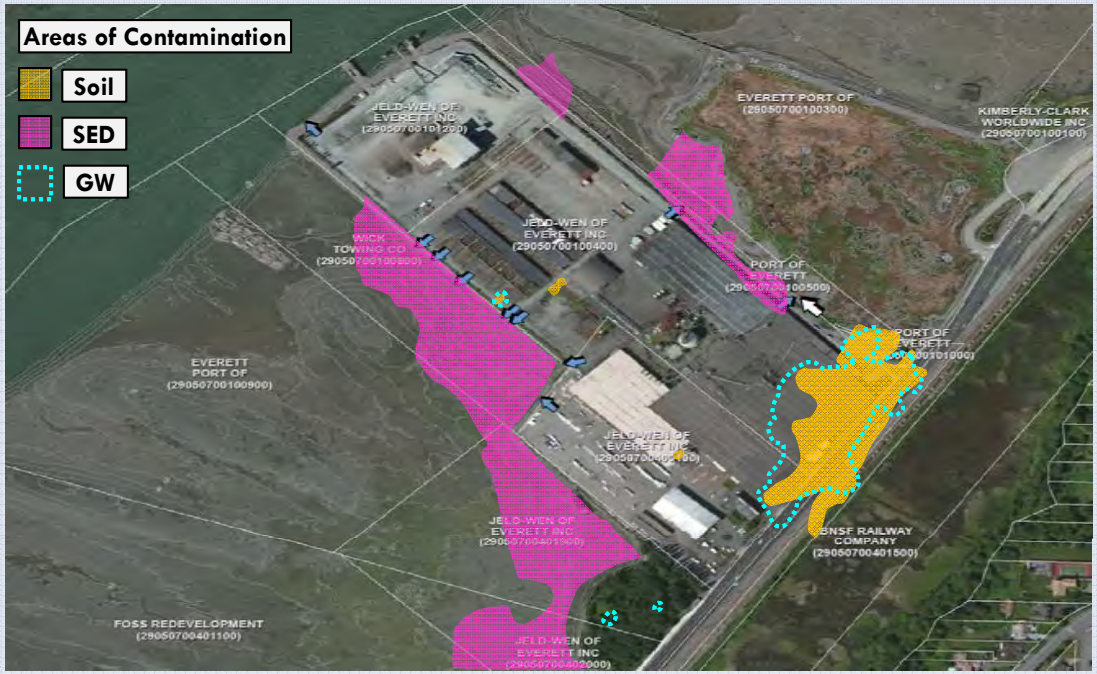
- **Site Use**
  - Pole Treating
  - Sawmill
  - Casket Factory
  - Former Door Manufacturer
- **Primary Sources**
  - Creosote Tanks
  - Fuel Oil Tanks
  - Woodlife Tank
  - Hog Fuel Burner Emmissions
  - Discharges to Puget Sound



Jeld-Wen Site

Contaminants

Chemical	Soil	GW	SED
PAH	●	●	●
TPH	●	●	
Napthalene	●	●	
Pentachlorphenol	●		
Dioxins/Furans	●	●	●
PCBs			●



Status/Schedule

Agreed Order	RI/FS Report	DCAP/CD	Cleanup Construction
2008	Summer 2015	Winter 2015	2016/2017

Bay Wood Products Site

Bay Wood Products Site

- **Site Use**
  - Sawmill
  - Log Handling and Storage
- **Primary Sources**
  - Fuel Oil Tanks
  - Drum storage area
  - Electrical Transformers (PCBs)
  - Oil Shed
  - Dip Tank
  - Wood Debris
  - Upland Sediment Disposal
  - Discharges to Puget Sound

Bay Wood Products Site

Contaminants

Chemical	Soil	GW	SED
PAH	●		
TPH	●		
Dioxins/Furans			●
PCBs	●		
Wood Waste			●

Interim Cleanups

- PCB Removal – 10 cu yds
- Wood Waste Removal – 140,000 cu yds
- Pile Removal – 8,000 cu yds

Status/Schedule

Agreed Order	Upland IA	Supplemental RI/FS Report	DCAP/CD	Cleanup Construction
2008	2012	Spring 2015	Spring 2015	2016/2017

Bay Wood Products Site

Wood Waste Removal Area

Bay Wood Products Site

Upland Soil Stockpiles

Bay Wood Products Site

Contaminated Pile Removal

North Marina Area Sites

North Marina Area Sites

- 65 Acre Port Property
- Initial Investigations – 2001 to 2007
- VCP – 2004 to 2007
- 3 Formal Cleanup Sites
- Current Port of Everett Waterfront Place Central Development

West End Site

- **Site Use**
  - Mills
  - Marine Repair and support
  - Industrial Manufacturing
- **Primary Sources**
  - Maritime Activities
    - Painting/Sandblasting
    - Storage of creosote-treated timbers
    - Boat maintenance
    - Operation and maintenance of heavy equipment
  - Fuel Oil Tanks
  - Fill Material
  - Discharges to Puget Sound

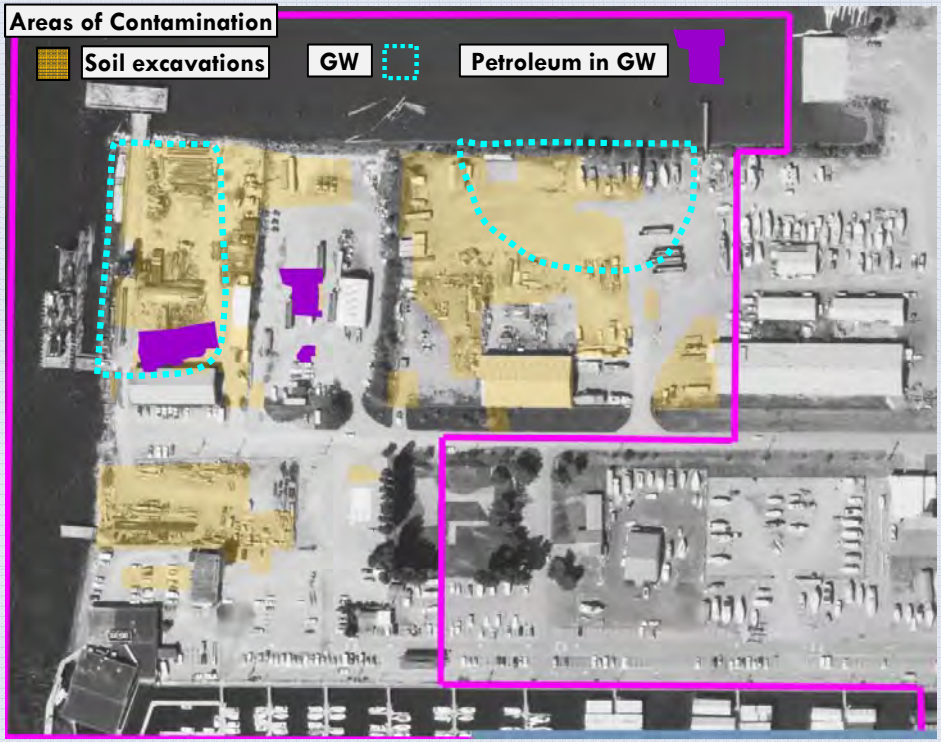
West End Site

Contaminants

Chemical	Soil	GW	SED
Metals	●	●	
PAH	●		●
TPH	●	●	
Vinyl Chloride		●	

Interim Cleanups

- Upland Soil – 27,000 cu yds
- TPH Groundwater Cleanup



Status/Schedule

Interim Action	Agreed Order	RI/FS Report	DCAP/CD	Long Term Monitoring	5 year Review
2006 - 2008	2008	July 2011	July 2011	2012/2013	2018

West End Site

Deep Soil Excavation

Soil Excavation Area

Ameron/Hulbert Site

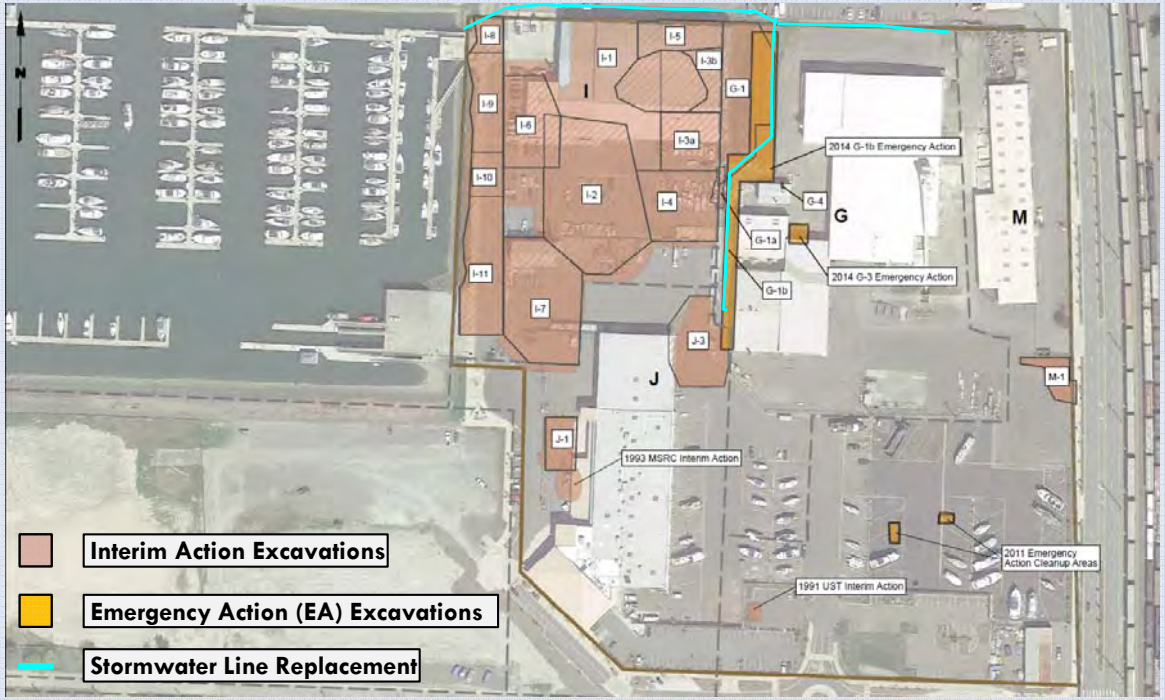
- **Site Use**
  - Shingle/Saw Milling
  - Marine Services
  - Concrete Pole Manufacturing
- **Primary Sources**
  - Concrete Waste
  - Sand Blast Grit
  - Fuel Oil Tanks
  - Contaminated Fill
  - Discharges to Puget Sound

Ameron/Hulbert Site

- **Contaminants**

Chemical	Soil	GW	SED
Metals	●	●	
PAH	●		
TPH	●	●	

- **Interim Cleanups**
  - Upland Soil – 27,000 cu yds
  - Stormwater Solids – 20 cu yds

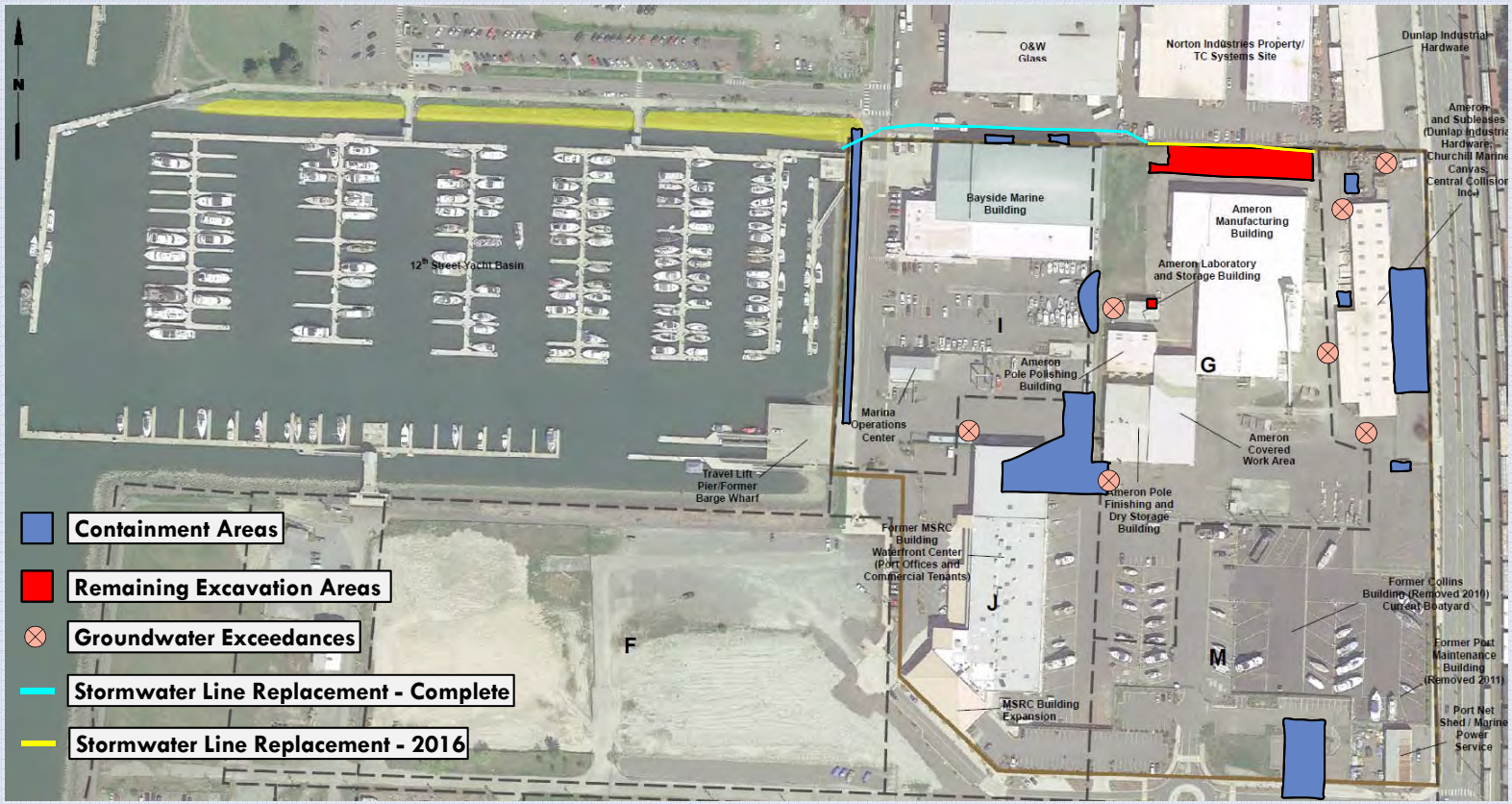


Status/Schedule

Interim Action	Agreed Order	Emergency Action	RI/FS Report	DCAP/CD	Cleanup Construction
1991 - 2007	2009	2011 - 2014	March 2014	October 2014	2016

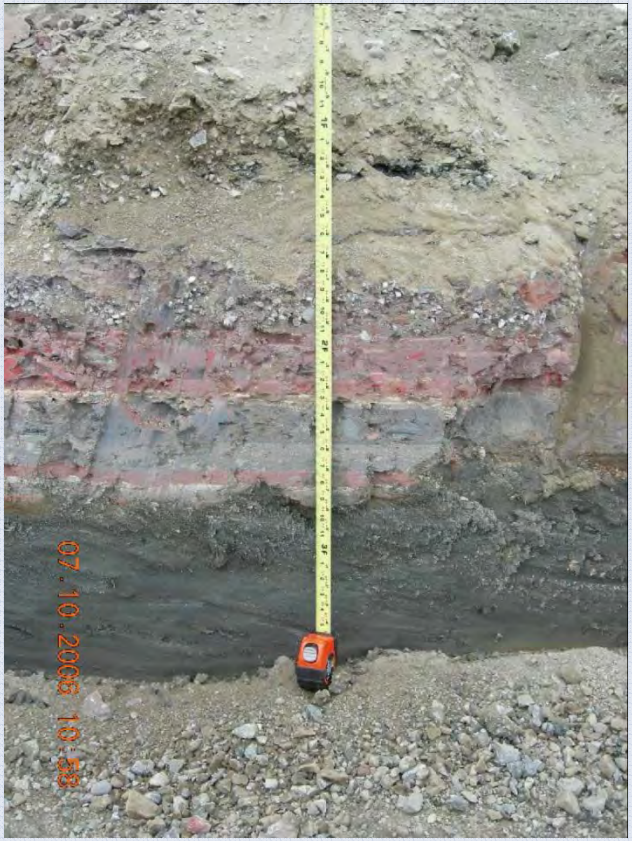
Ameron/Hulbert Site

Cleanup Action Areas



Ameron/Hulbert Site

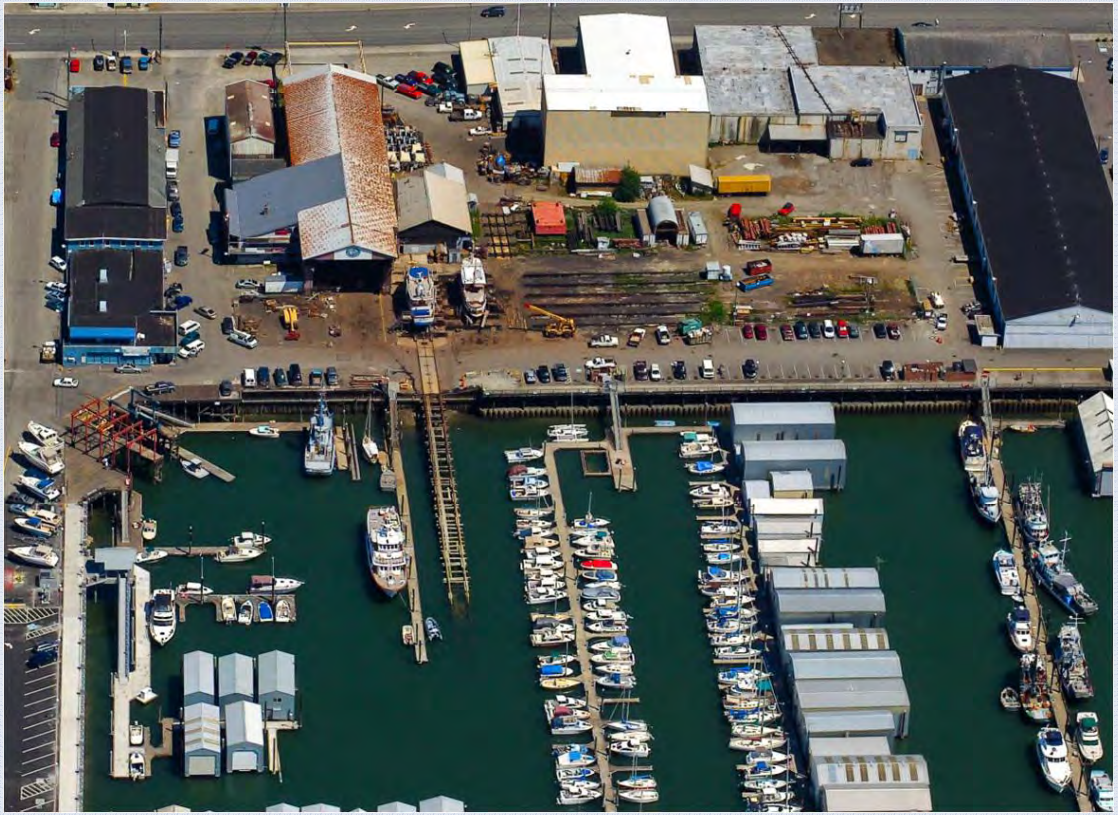
Concrete Wastes



Black Sand Blast Grit

Everett Shipyard Site

- **Site Use**
  - Boat building, maintenance, repair
  - Machine Shop
- **Primary Sources**
  - Sand Blast Grit/Paint Chips
  - Fuel Oil Tanks
  - Boat Washing & Maintenance
  - General Chemical Use
    - Paints/Solvents
    - Oils
    - Creosote
  - Discharges to Puget Sound



Everett Shipyard Site

Contaminants

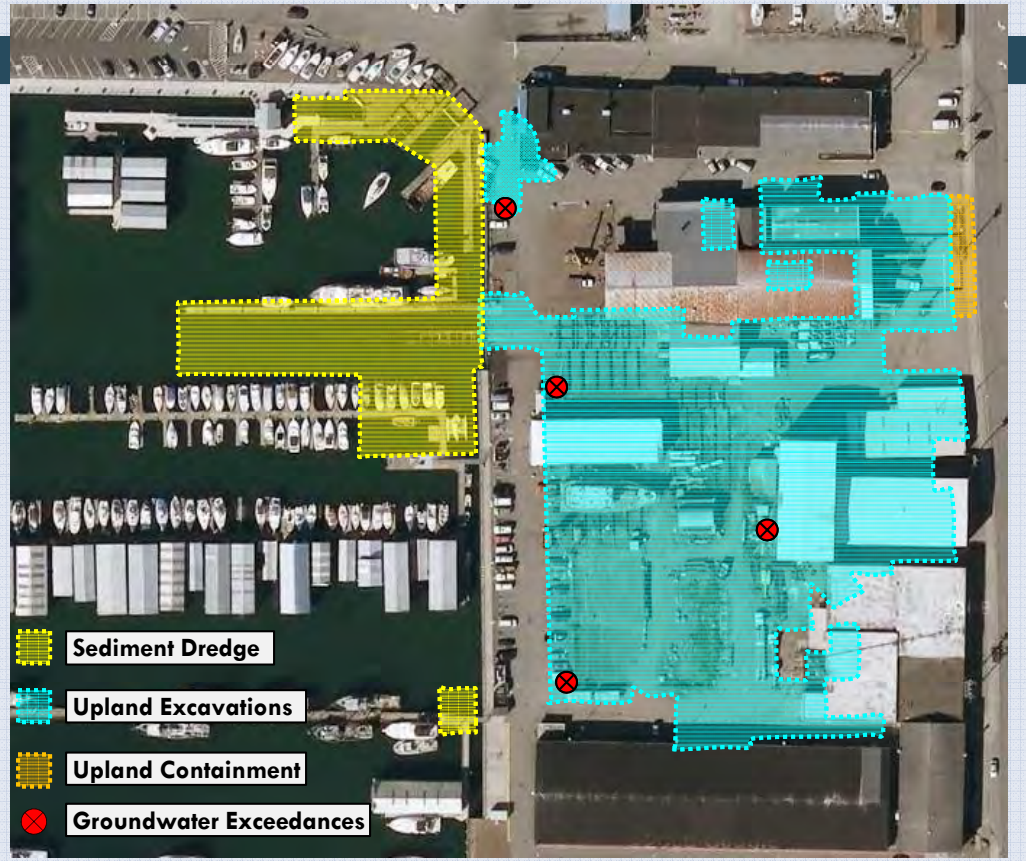
Chemical	Soil	GW	SED
Metals	●	●	●
PAH	●		●
TPH	●	●	
PCB	●		●
Tributyltin			●

Upland Cleanup

- Excavation – 15,000 cu yds
- Cleanout Stormwater System
- Monitor Groundwater

In-Water Cleanup

- Sediment Dredge – 9,000 cu yds
- Remove marine railway and travel life
- Replace portions of the bulkhead



Status/Schedule

Agreed Order	RI/FS Report	DCAP/CD	Upland Cleanup	In-Water Cleanup
2008	Feb. 2011	Nov. 2011	2013	2014

Everett Shipyard Site

Upland Cleanup – November 2013

TC Systems

Bay Wood Products
Jeld-Wen
Everett Smelter
(Lowland Area)
TC Systems
Ameron/Hulbert
West End
Everett Shipyard
East Waterway
Kimberly-Clark Worldwide
ExxonMobil ADC
Weyerhaeuser Mill A

TC Systems

- **Site Use**
  - Shingle Mill
  - Fiberglass Boat Manufacturer
  - Painting and Metal Finishing
- **Primary Sources**
  - Leaks and spills from industrial use
  - Large Quantity Generator of Hazardous Wastes
  - Chemical Storage Tanks
  - Contaminated Fill
  - Discharges to Puget Sound

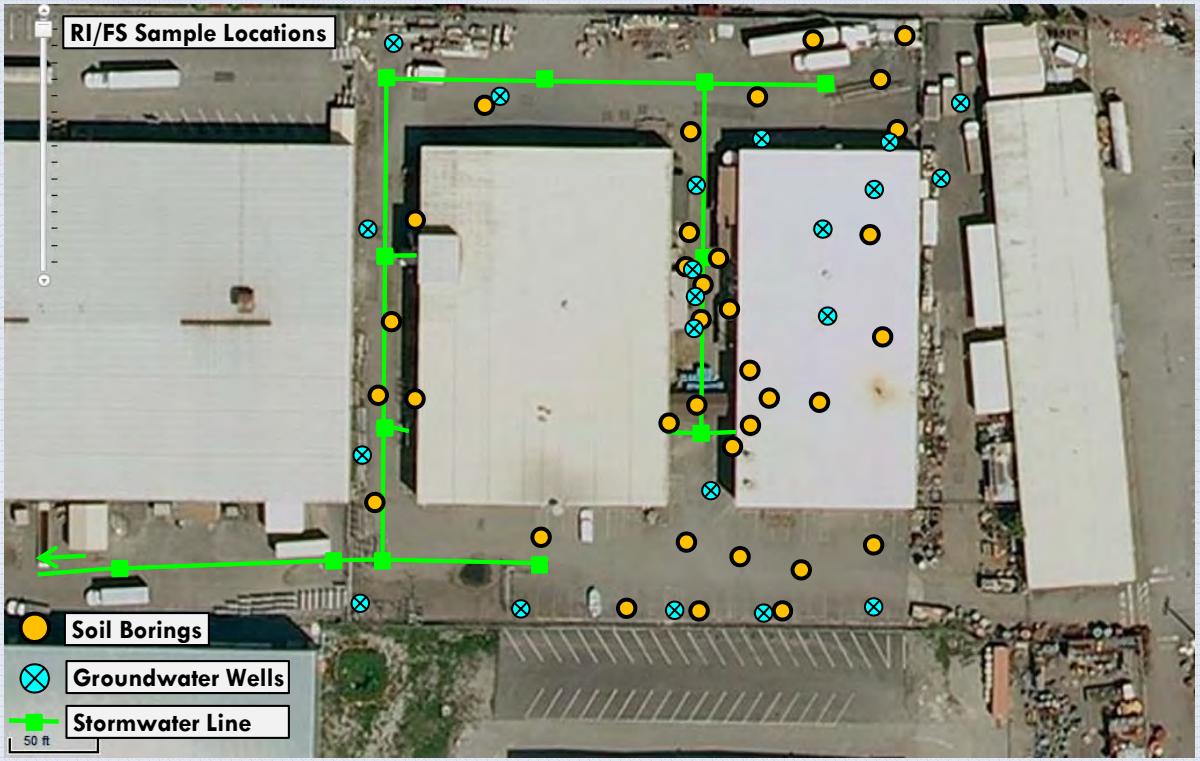
TC Systems

Contaminants

Chemical	Soil	GW
Metals	●	●
PAH	●	●
TPH	●	●
PCB	●	

Upland Work

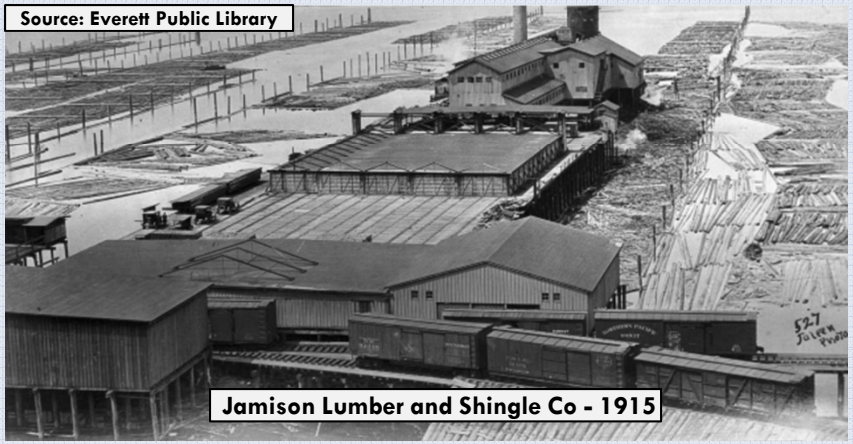
- Facility Closed (May 2010) – Removed all dangerous waste
- Upgraded and cleaned out stormwater system
- Completed RI/FS field investigation



Status/Schedule

Agreed Order	RI/FS Report	DCAP/CD	Upland Cleanup
2010	Spring 2015	Fall 2015	2016

TC Systems


Source: Everett Public Library

Jamison Lumber and Shingle Co - 1915

Dye Penetrant Oil

Compressor Leaking Oil

Leak from compressor shed

White Fill Material

TC Systems

Heavy Industrial to Light Commercial

Kimberly-Clark Worldwide - Uplands

Kimberly-Clark Worldwide - Uplands

- **Site Use**
  - Lumber and Flour Mills
  - Bulk Petroleum Storage
  - Pulp and Paper Mill
- **Primary Sources**
  - Leaks and spills from industrial use
  - Large Quantity Generator of Hazardous Wastes
  - Chemical use and storage
  - Fuel Storage Tanks
  - Contaminated Fill
  - Machine Shops
  - Historic refuse burner
  - Discharges to Puget Sound

Kimberly-Clark Worldwide - Uplands

Contaminants

Chemical	Soil	GW
Metals	●	●
PAH	●	●
TPH	●	●
PCB	●	
VOC	●	●

Upland Work

- Facility Closed (2012) – Removed all dangerous waste
- Interim Cleanups
  - 38,000 cu yds of contaminated soil removed
  - 5.6 million gallons – Groundwater removed for treatment

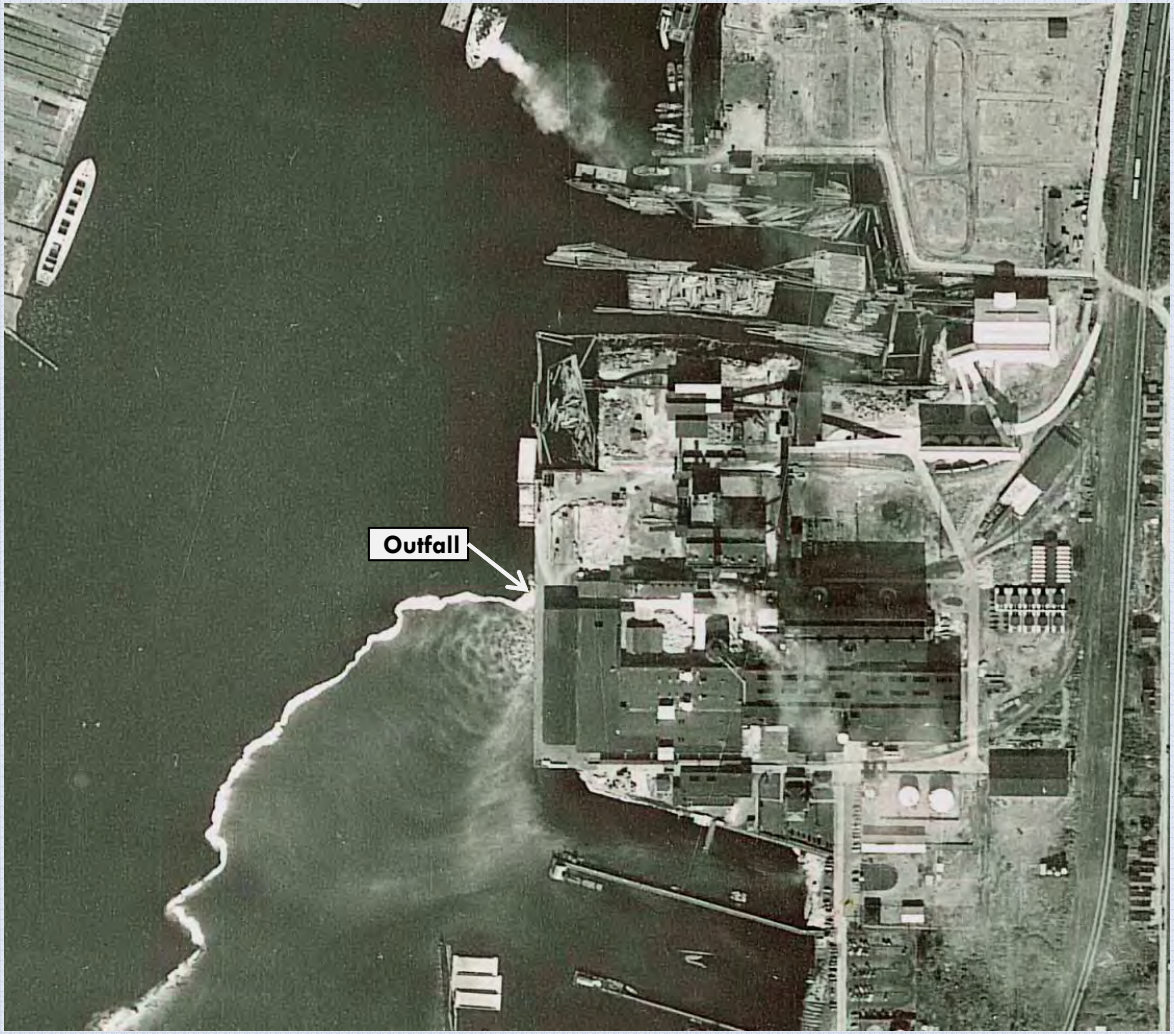
Status/Schedule

Agreed Order	Interim Action	RI/FS Report	DCAP	Upland Cleanup
2012	2013	Summer 2015	Winter 2015	2016

Kimberly-Clark Worldwide - Uplands

Kimberly-Clark Worldwide - Uplands

Former Kimberly-Clark Pulp and Paper Mill

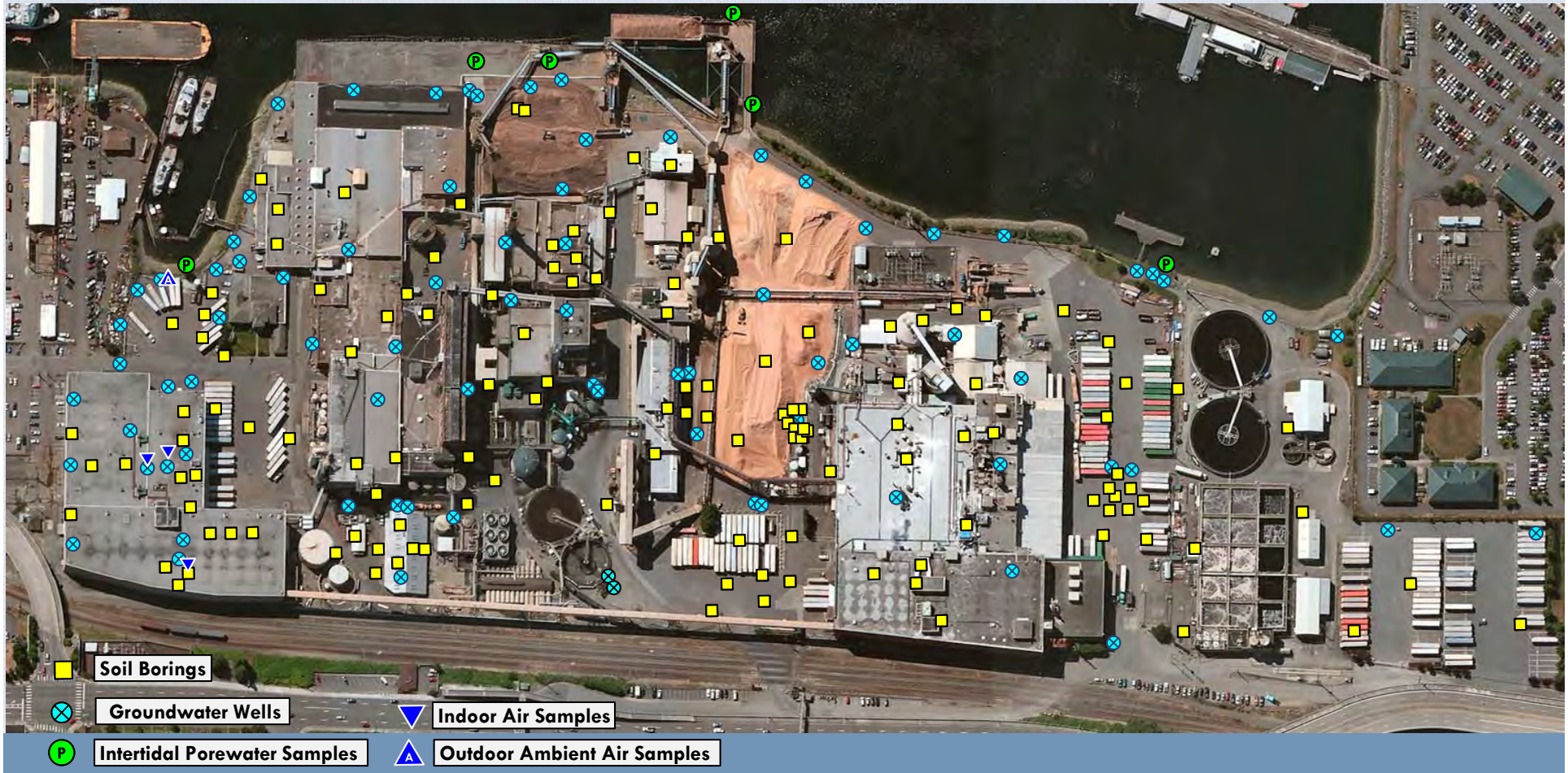


Kimberly-Clark Worldwide - Uplands

Upland Interim Action Areas

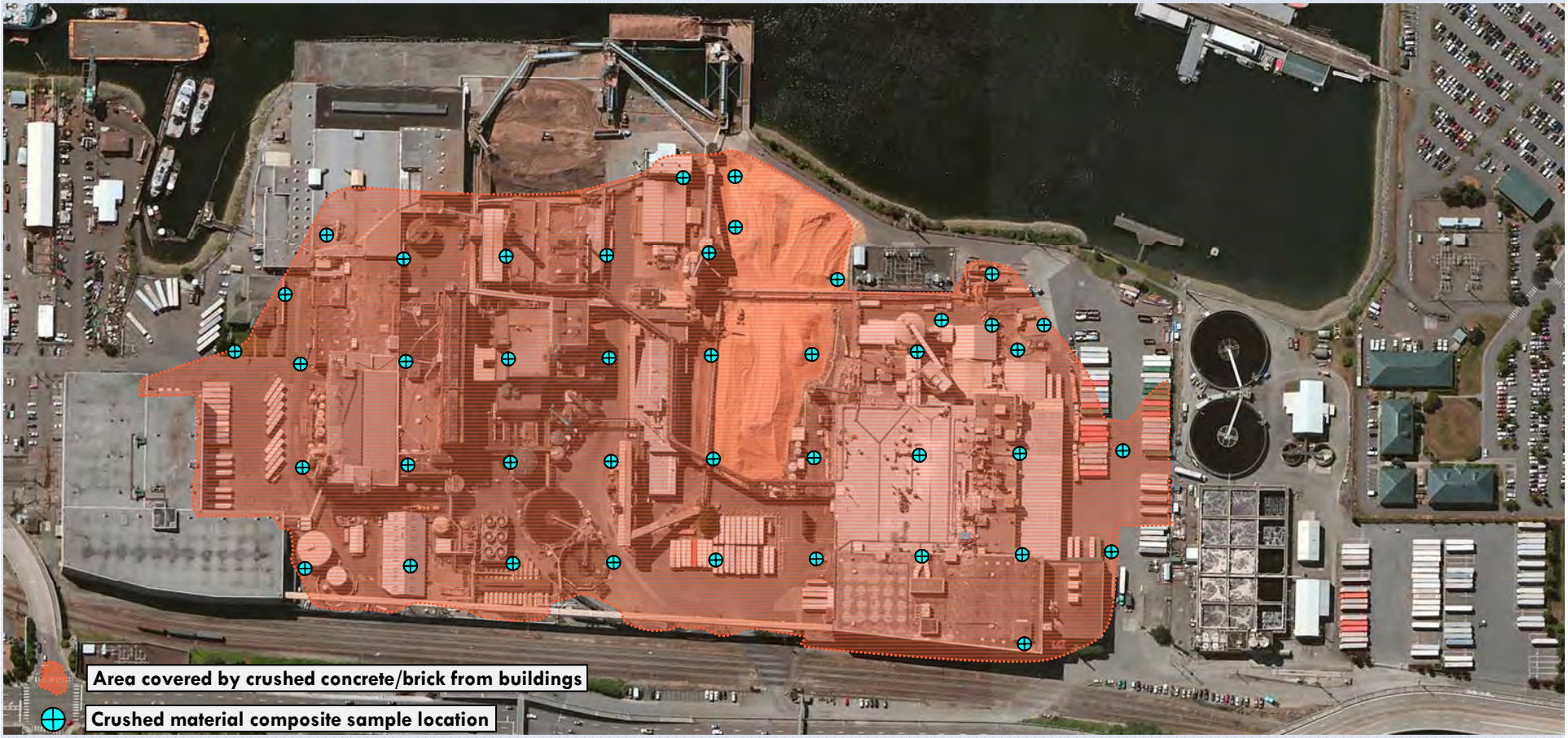
Kimberly-Clark Worldwide - Uplands

RI/FS Sampling



Kimberly-Clark Worldwide - Uplands

Crushed Building Debris Sampling



Kimberly-Clark Worldwide - Uplands

ExxonMobil ADC Site

ExxonMobil ADC Site

- **Site Use**
  - Bulk Petroleum Storage and Distributing Facility
- **Primary Sources**
  - Leaks and spills
  - Fuel Storage Tanks

ExxonMobil ADC Site

Contaminants

Chemical	Soil	GW
Lead	●	
PAH	●	●
TPH	●	●
VOC	●	●

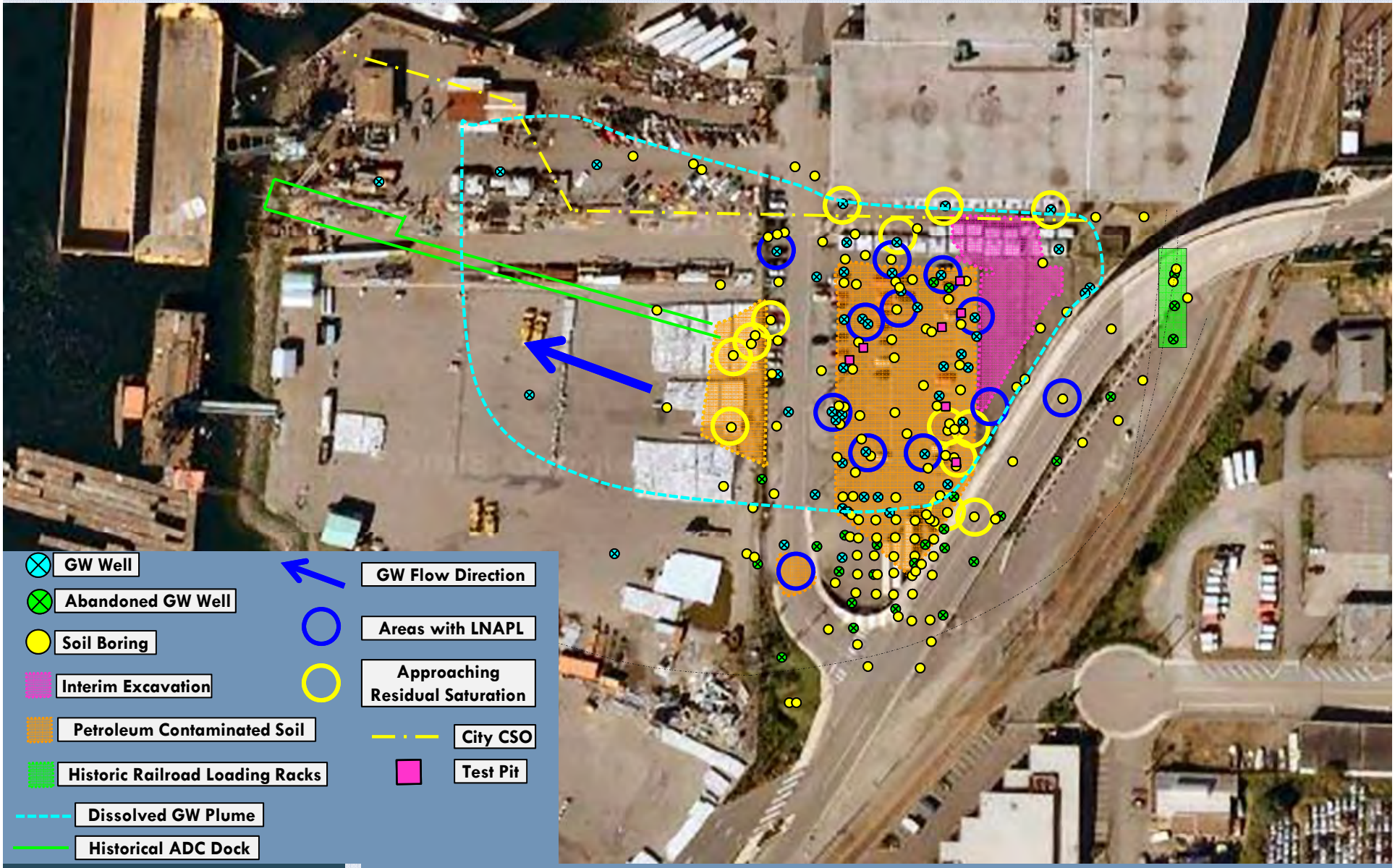
Interim Cleanups

- **1995 CSO Repair** – 23,000 gallons of LPH removed
- **2011 Excavation**
  - 3,800 tons contaminated soil and wood debris removed
  - 2,500 gallons of LPH removed
  - 1.5 million gallons of contaminated groundwater removed and treated

Status/Schedule

Agreed Order	Interim Action	RI/FS Report	DCAP	Upland Cleanup
2010	2011	Summer 2015	Spring 2015	2017

ExxonMobil ADC Site

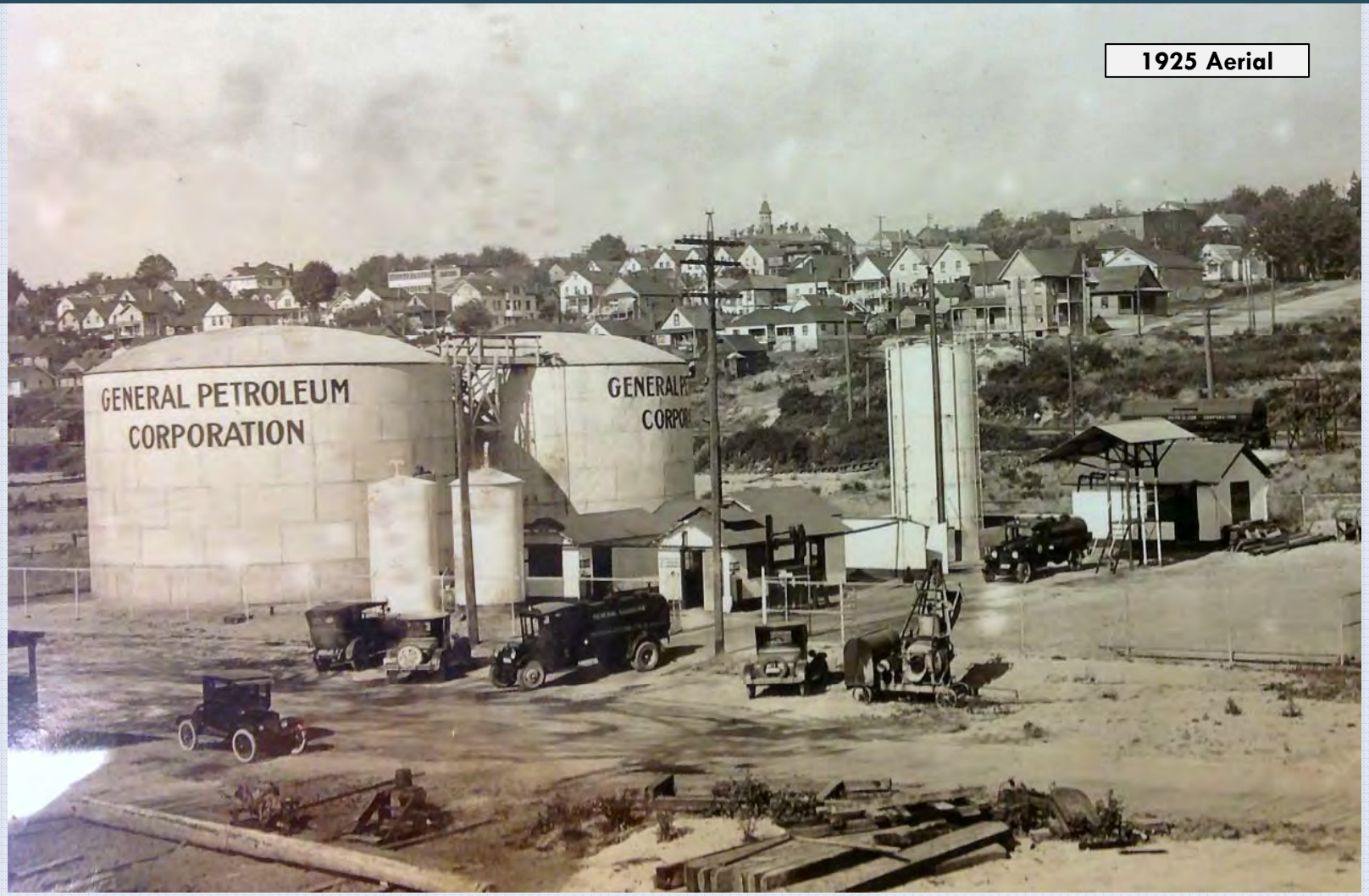


PSI – Port Gardner

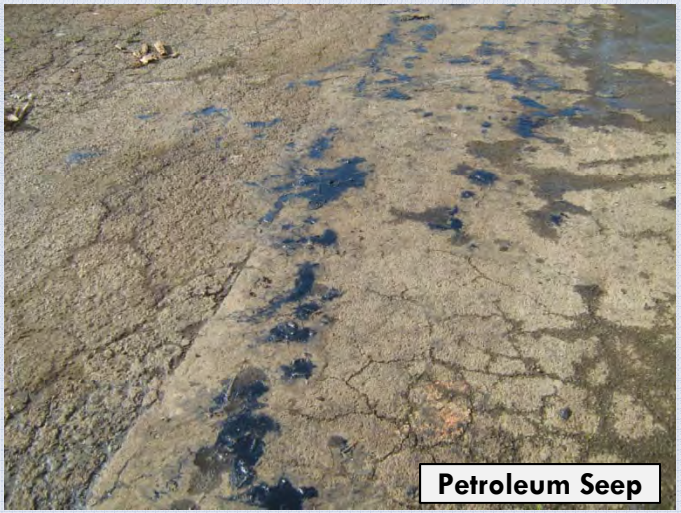
WASHINGTON STATE
Department of Ecology

October 25, 2014

ExxonMobil ADC Site



ExxonMobil ADC Site


Petroleum Seep

Former City Dump

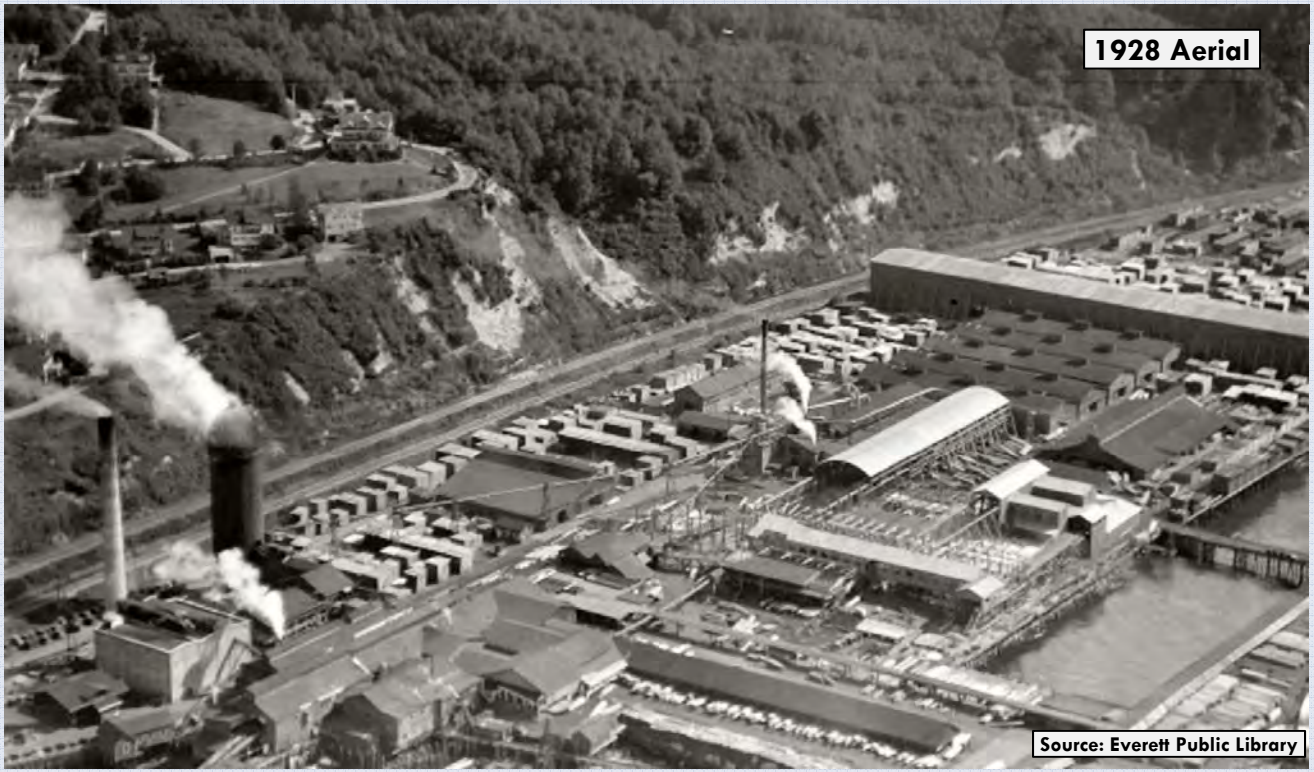
LPH Recovery

ExxonMobil ADC Site

Weyerhaeuser Mill A Former Site

Weyerhaeuser Mill A Former Site

- **Site Use**
  - Port Terminal
  - Log Storage
  - Pulp and Paper
  - Saw Mill
  - Shingle Mill
  - Shipyard
- **Primary Sources**
  - Leaks and spills from industrial use
  - Chemical use and storage
  - Fuel Storage Tanks
  - Machine Shops
  - Contaminated Fill
  - Historic refuse burner
  - Discharges to Puget Sound



Weyerhaeuser Mill A Former Site

Contaminants

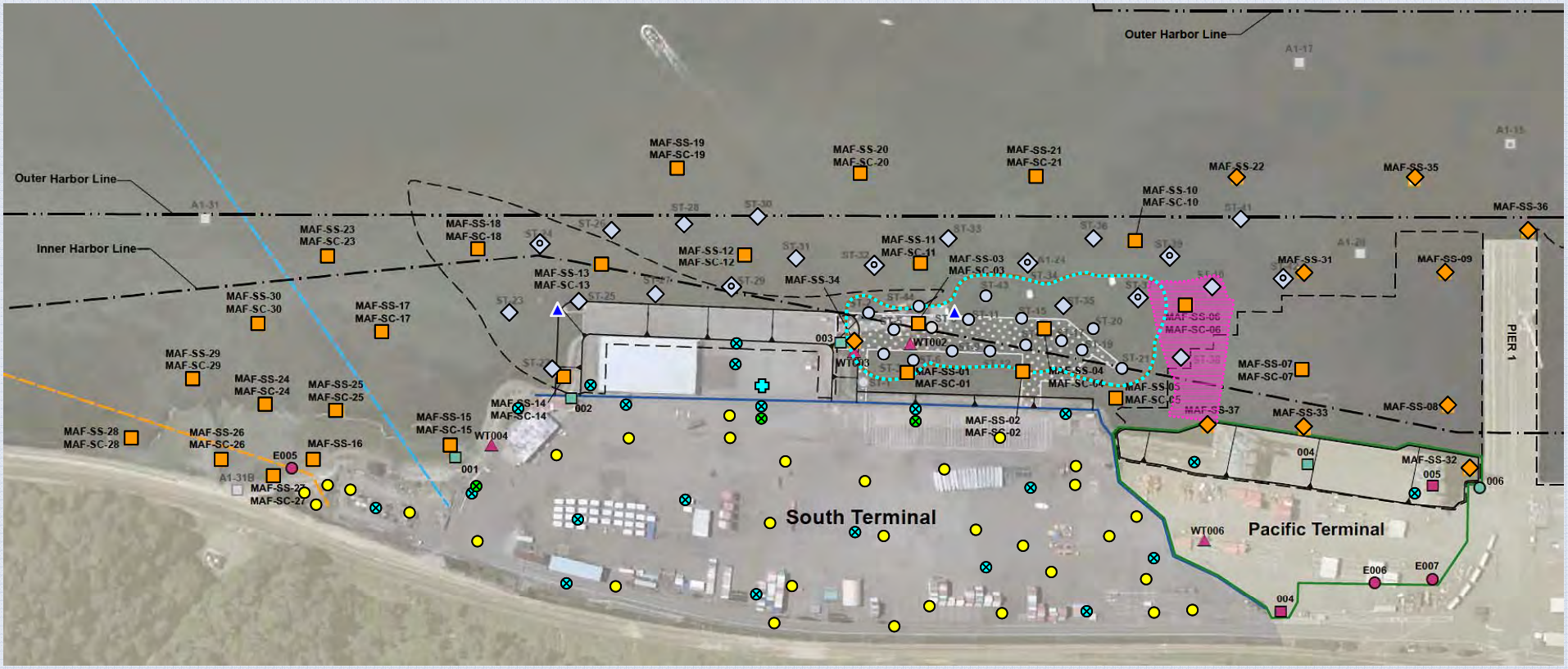
Chemical	Soil	GW	SED
Metals	●	●	●
PAH/SVOCs	●	●	●
TPH	●	●	
VOCs	●		
PCB	●		●
Dioxins/Furans			●

Status/Schedule

Agreed Order	RI Field Work	Interim Action	RI/FS Report	DCAP	Cleanup
2012	Spring 2015	2016	Winter 2016	Summer 2017	2018/2019

Weyerhaeuser Mill A Former Site

RI/FS Planned Sample Locations



GW Well - Shallow
GW Well - Deep
Soil Boring
Piezometer
Surface Sed and Sed Core
Surface Sed Only
Planned Interim Action Area
Wood Waste Area
Historical samples

Weyerhaeuser Mill A Former Site

Weyerhaeuser Mill A Former Site

Public Beach

East Waterway

East Waterway

- **Site Use**
  - Port Terminals
  - Log Rafting and Handling
  - Pulp and Paper
  - Wood Products Mills
  - Navy Shipyard and Homeport
  - Industrial Manufacturing
  - Bulk Petroleum Storage
  - Tug Boat Operations
- **Primary Sources**
  - Heavy Industrial Use and Discharges to the Waterway
  - Log Rafting and Chip Barging
  - Historic refuse burners
  - Creosote treated wood pilings

East Waterway

Naval Shipyard – World War II

East Waterway

- **Contaminants**

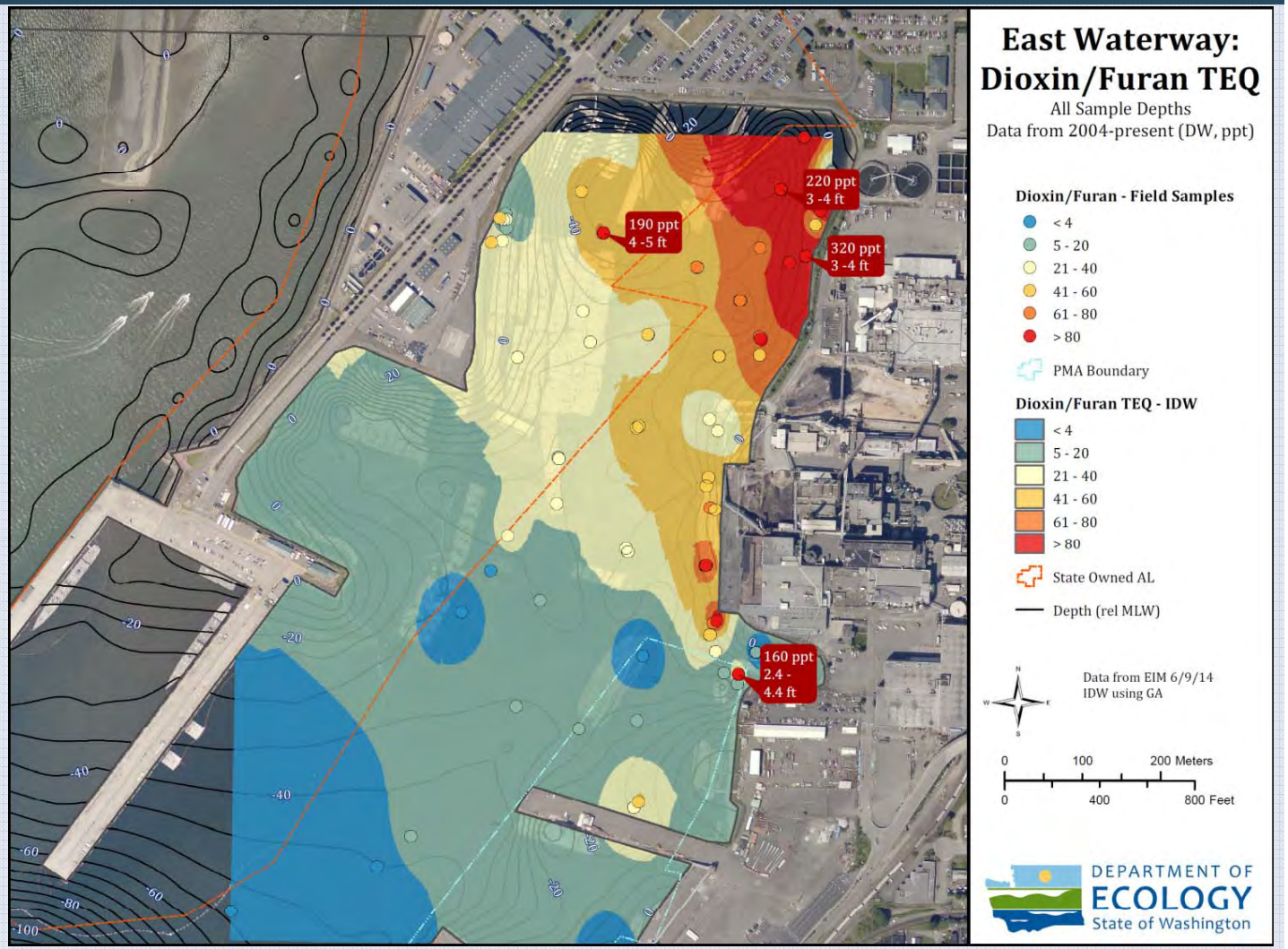
Chemical	SED
Metals	●
PAH/SVOCs	●
PCB	●
Dioxins/Furans	●

Status/Schedule

Agreed Order	RI Field Work	RI/FS Report	DCAP	Cleanup
2014	TBD	TBD	TBD	TBD

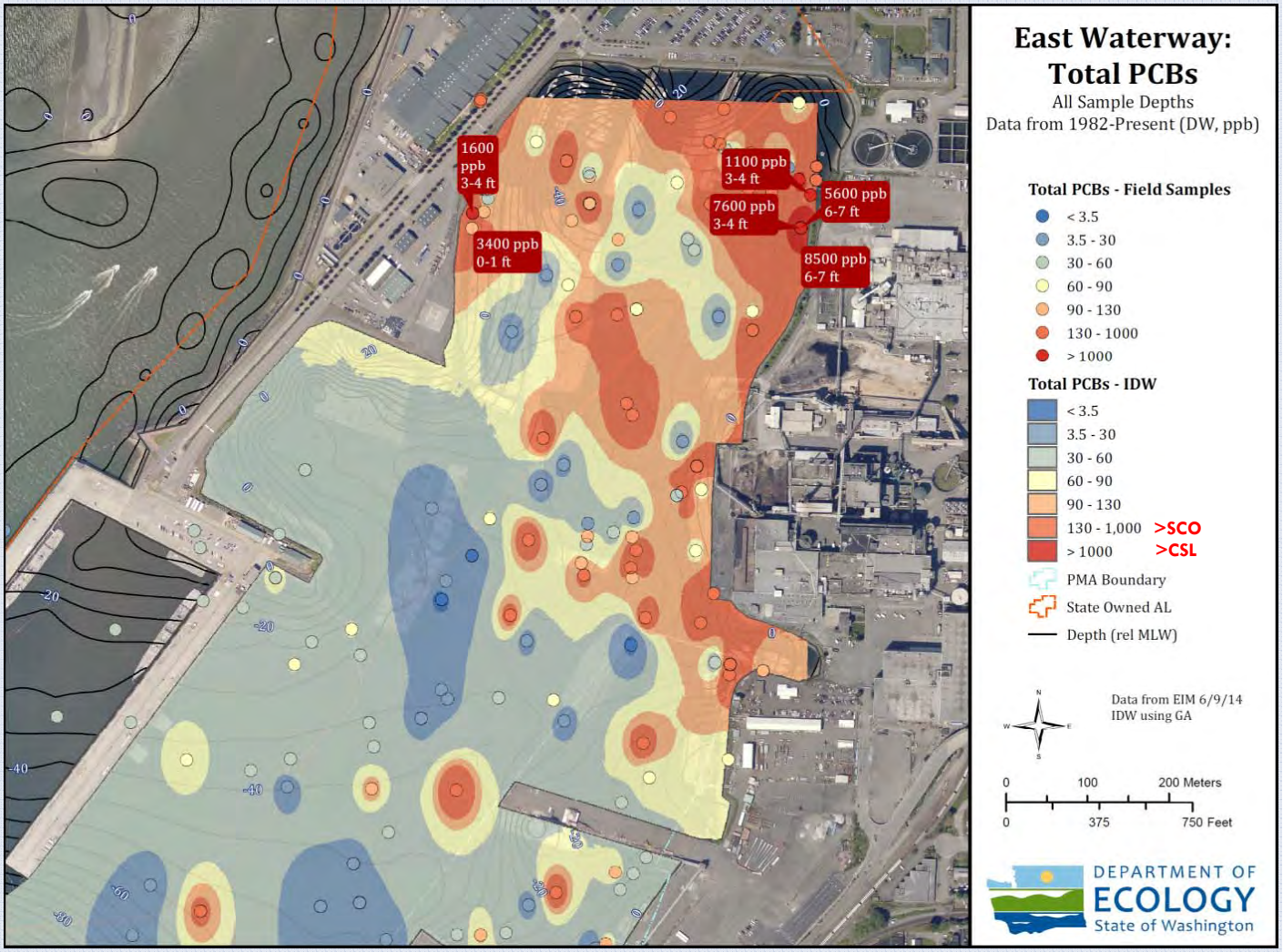
East Waterway

Dioxin/Furan Concentrations



East Waterway

PCB Concentrations

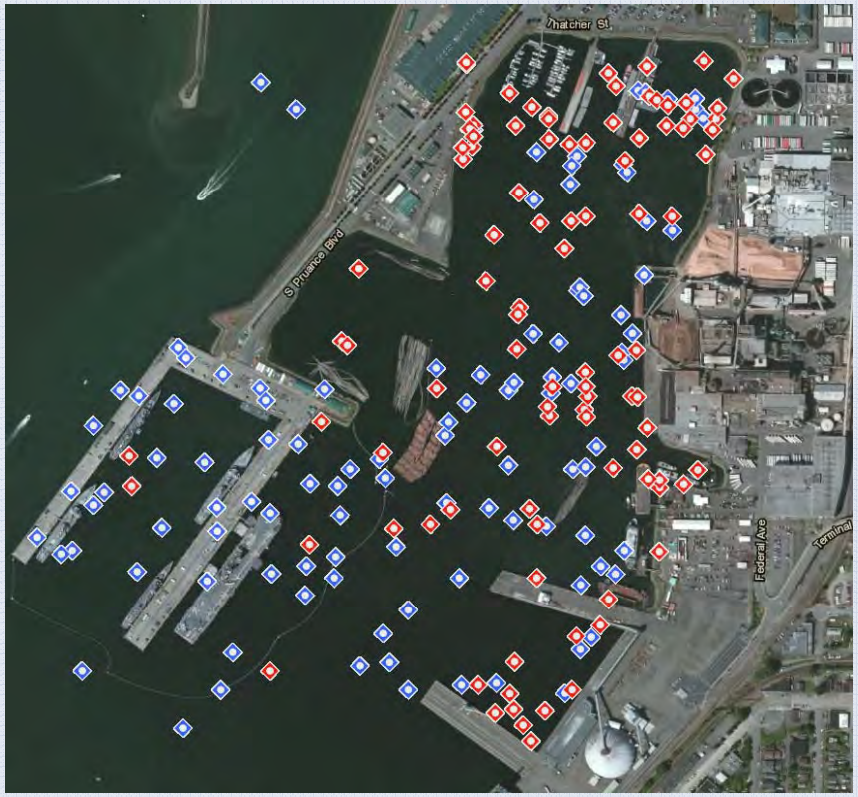


East Waterway

PAHs – Reviewed all surface/subsurface data in EIM

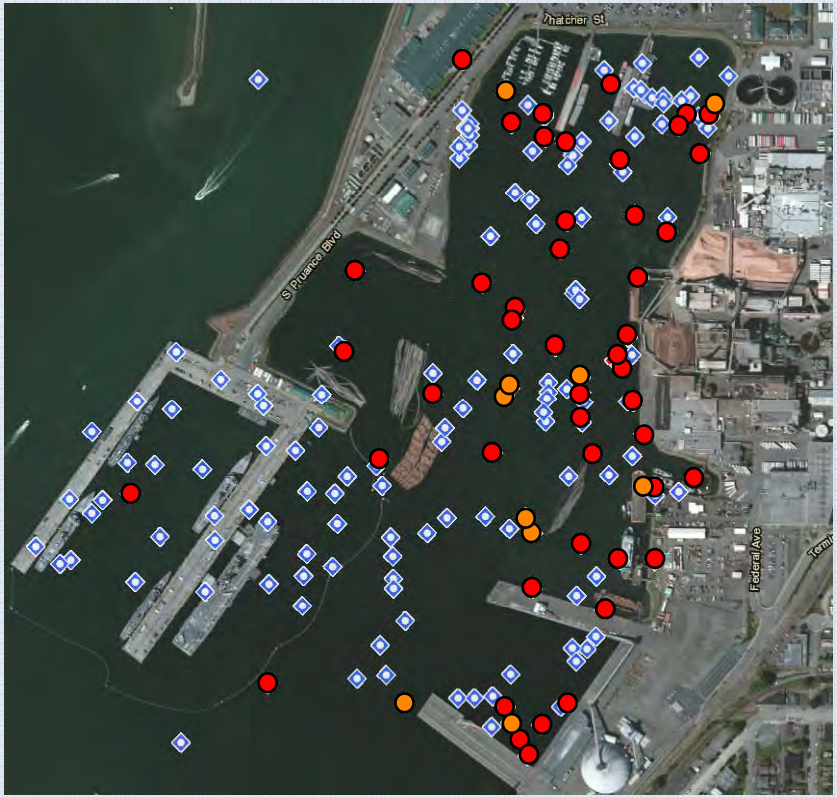
cPAH TEQ data > 10 x Natural Background

(Natural Background = 16 ppb)



PAH data > SMS Benthic Criteria

CSL Exceedance SCO Exceedance

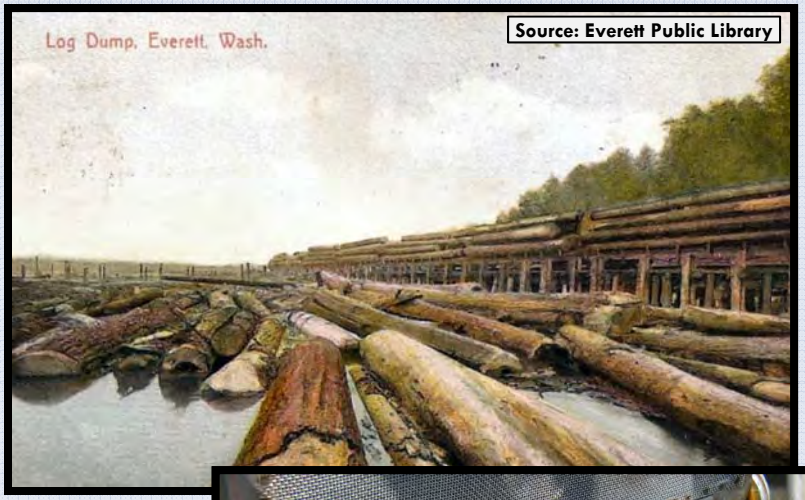


SMS = Sediment Management Standard SCO = Sediment Cleanup Objective CSL = Cleanup Screening Level

East Waterway

Wood Waste Sources

- 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



Public Involvement Opportunities

- **Public Comment Period open until Nov. 8 on:**
  - **Ameron/Hulbert Site**
    - Draft Cleanup Action Plan
    - Consent Decree
    - SEPA Checklist and Determination of Non-Significance

How to get involved

- 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

QUESTIONS?