



PSI Cleanup Sites – Port Gardner

Sound Living Conference
October 25, 2014

The Puget Sound Initiative (PSI)

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- ❑ 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



The Puget Sound Initiative (PSI)

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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)

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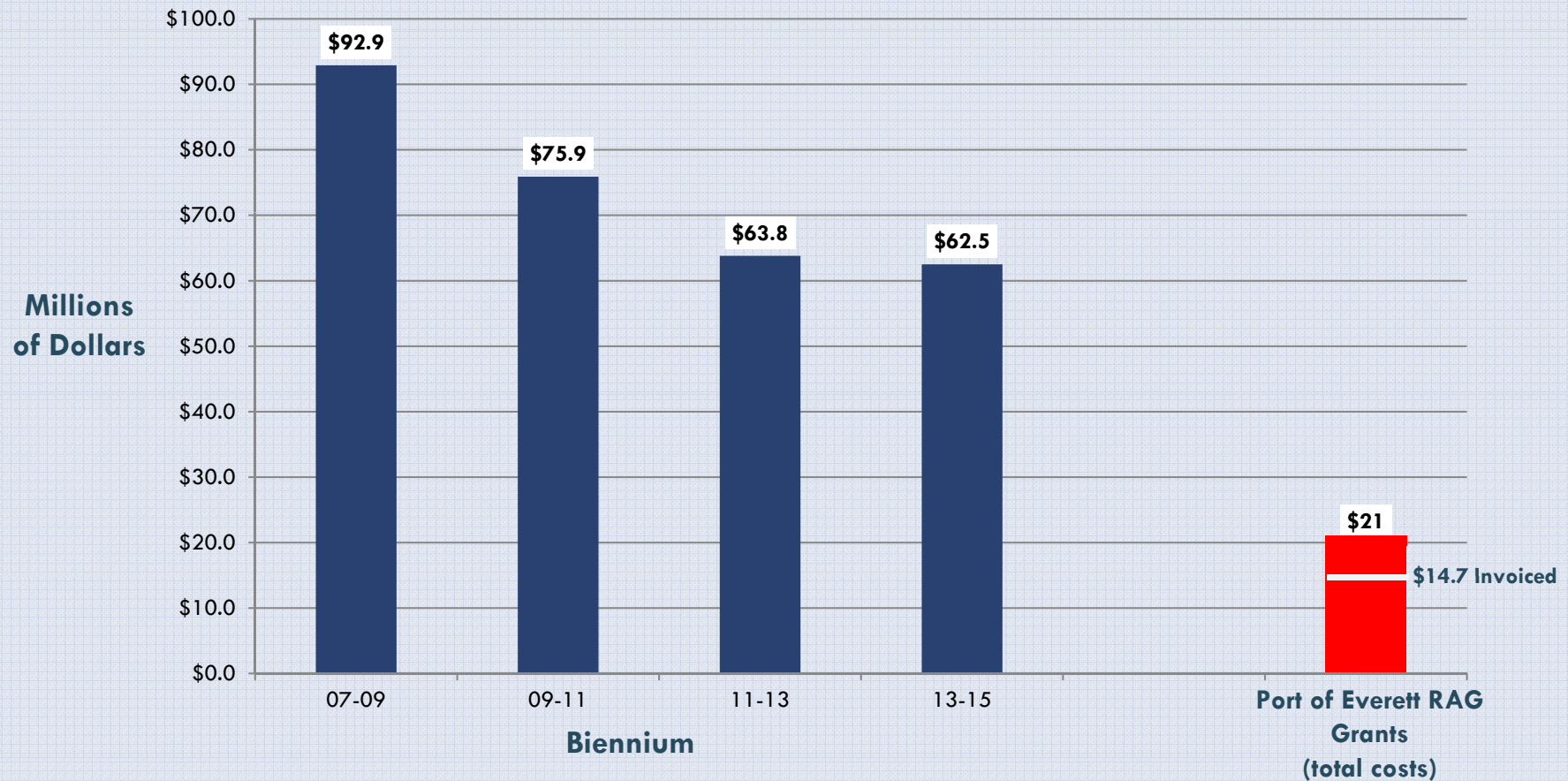


PSI Operating Principles

Funding for Cleanups

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TCP Remedial Action Grant Funding



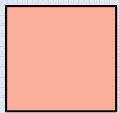
Port Gardner Baywide

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Port Gardner PSI Cleanup Areas

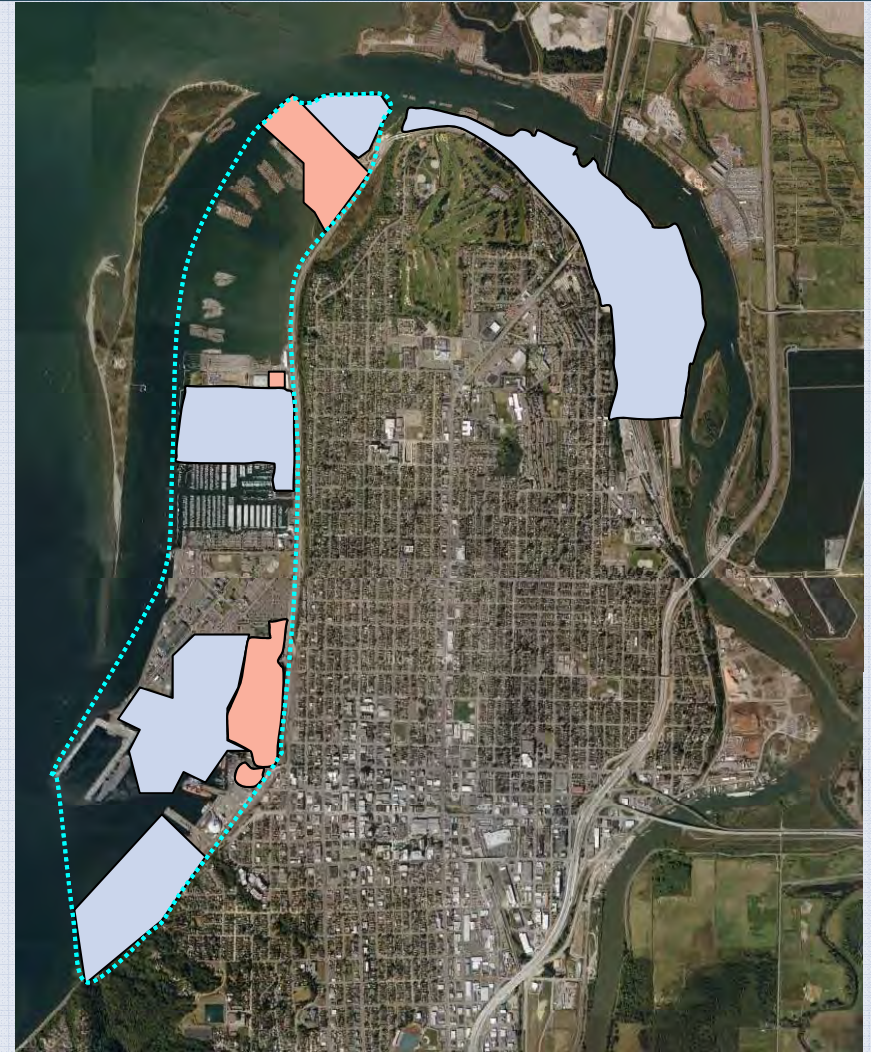


Port is involved



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

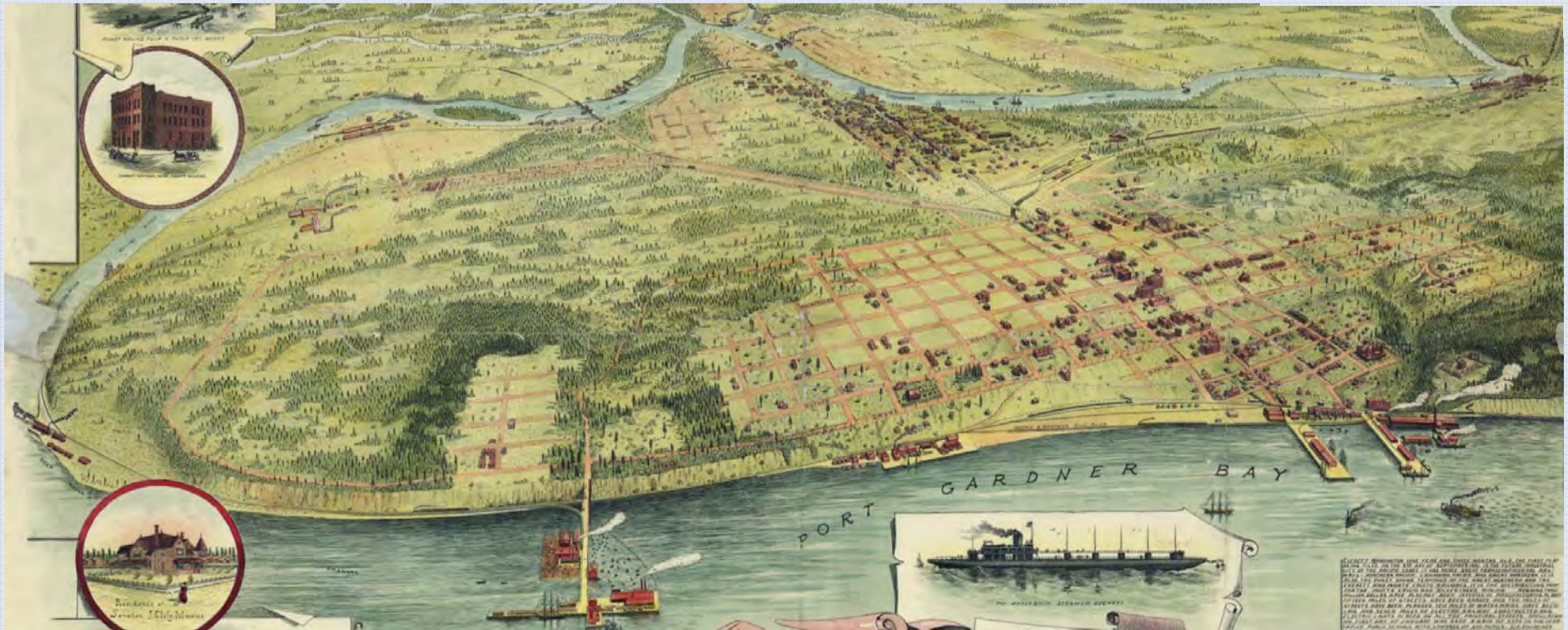
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Port Gardner PSI Sites



Historical Everett – 1893

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Historical Everett – 1898-1901

9

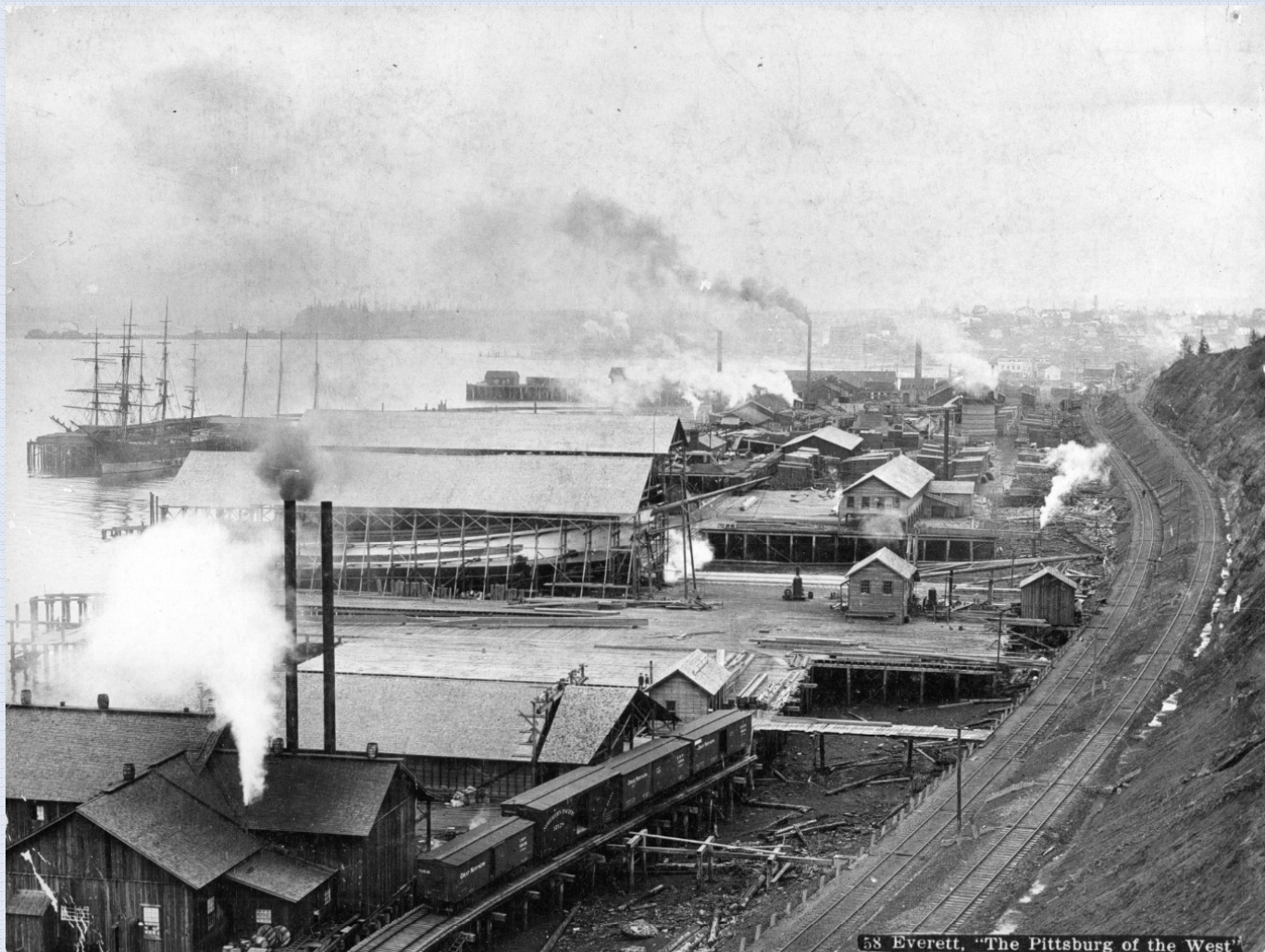


Photo Source:
Everett Public Library

Historical Everett – 1928

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● PSI Site

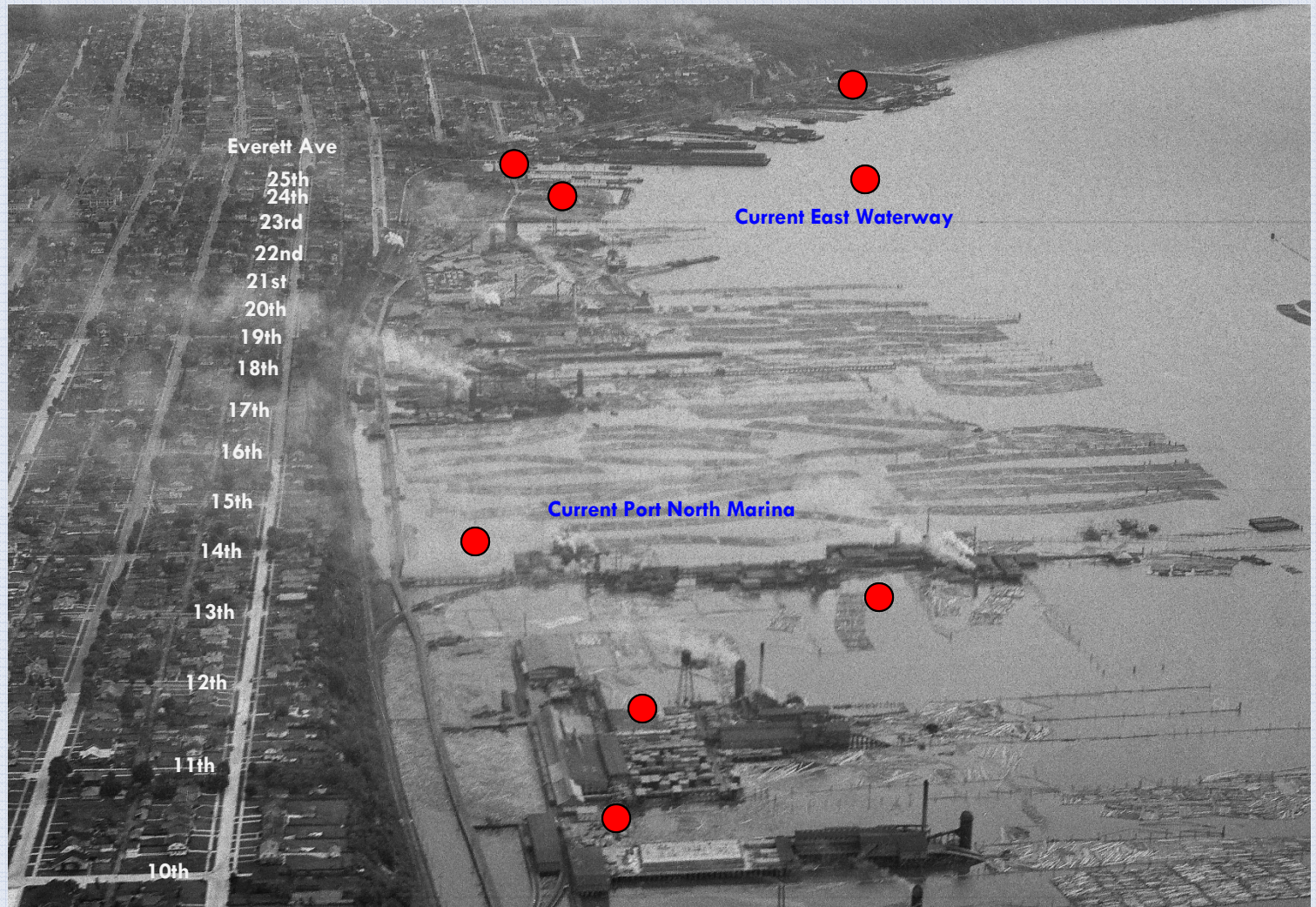


Photo Source:
Everett Public Library

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Historical Everett – 1930s

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Photo Source:
Port of Everett

Historical Everett – 1940s

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*Naval
Shipyard –
World War II*

Photo Source:
Port of Everett



Port Gardner Baywide

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**2006
Aerial
Photo**

● **PSI Site**

Photo Source:
Port of Everett



PSI — Port Gardner



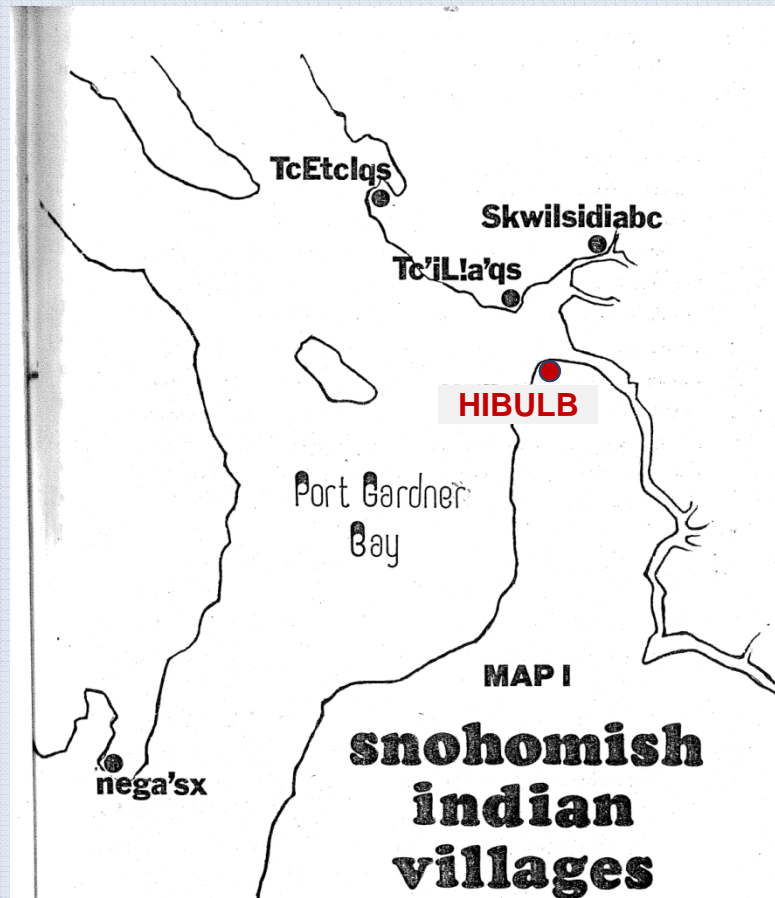
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Tribal History

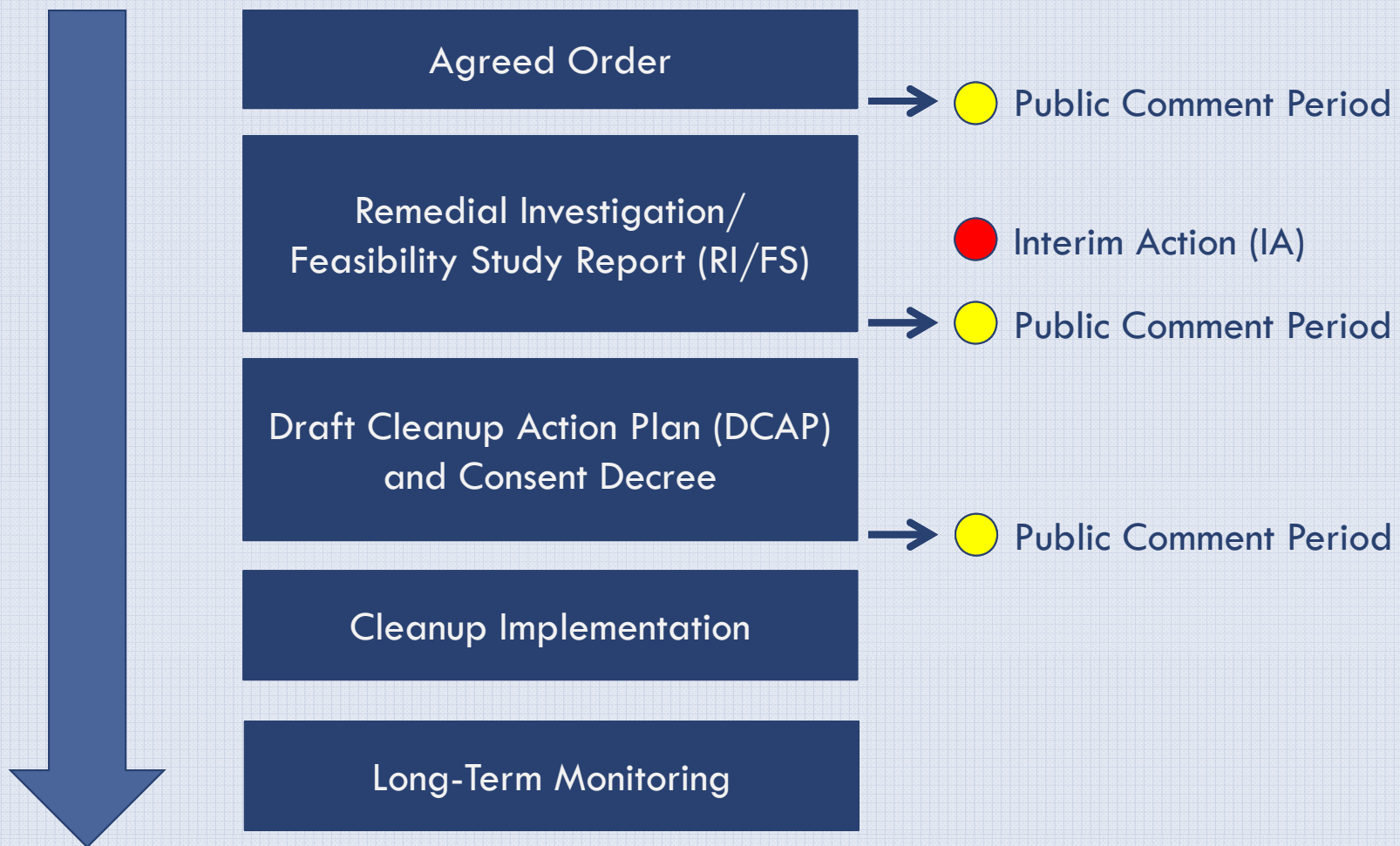


Mother of chief William Shelton, who was born at Hibulb

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

Formal Cleanup Process

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Port Gardner Baywide

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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

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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



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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



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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*



Port Gardner Baywide

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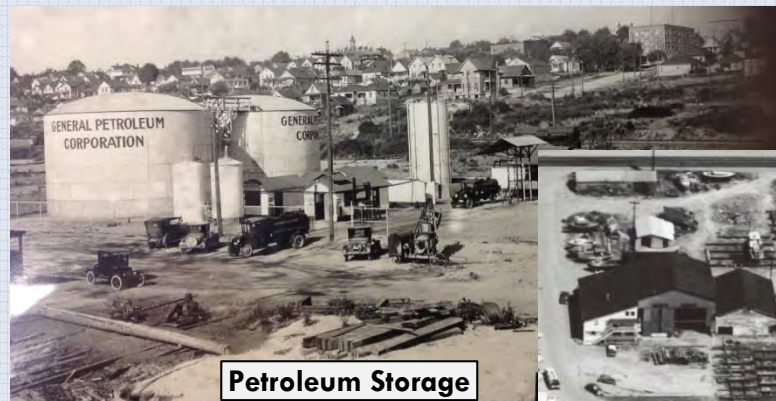
General Site Characteristics

❑ 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

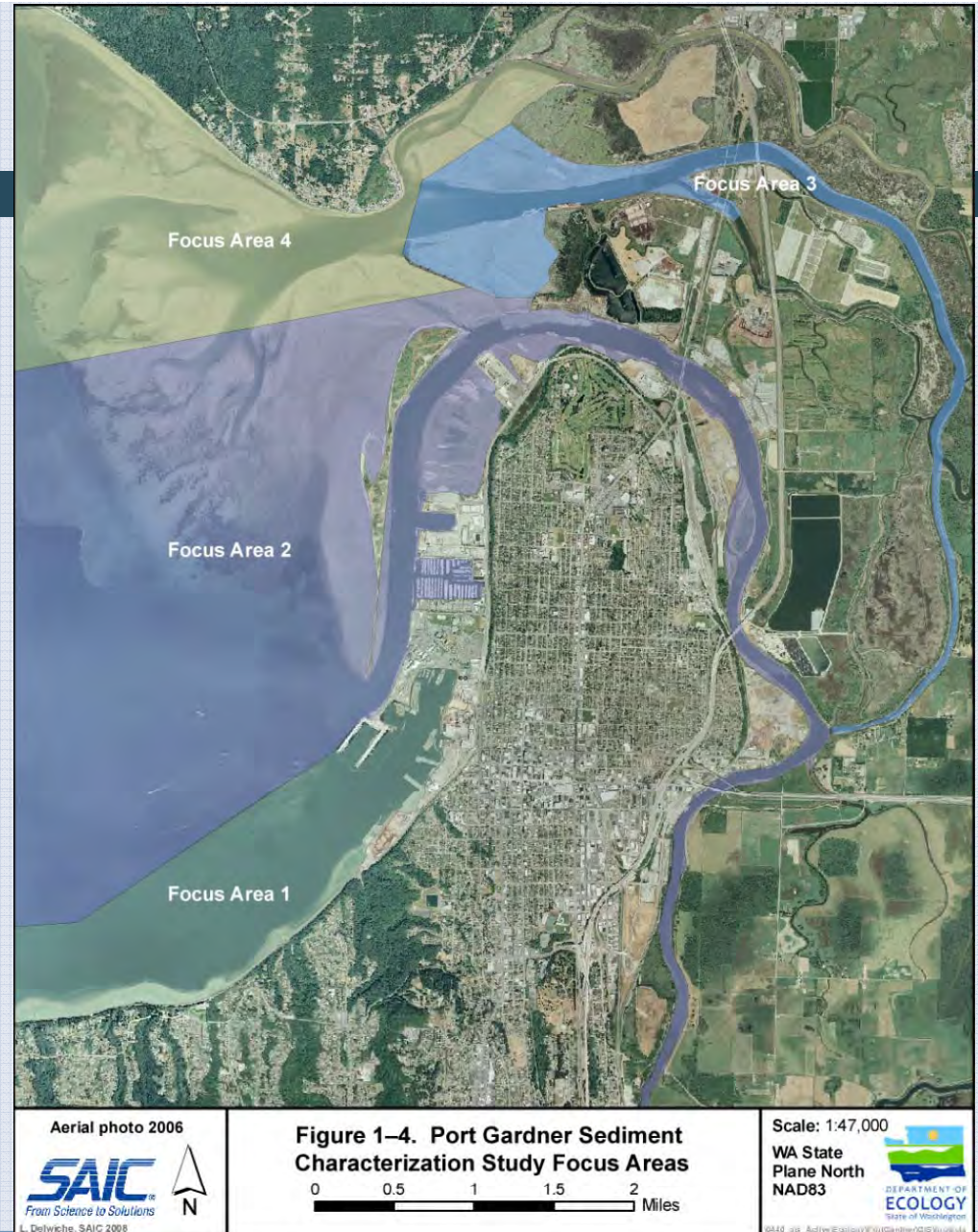


Port Gardner Baywide

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2008 Baywide Study

- ❑ Wide Coverage
- ❑ Four Focus Areas

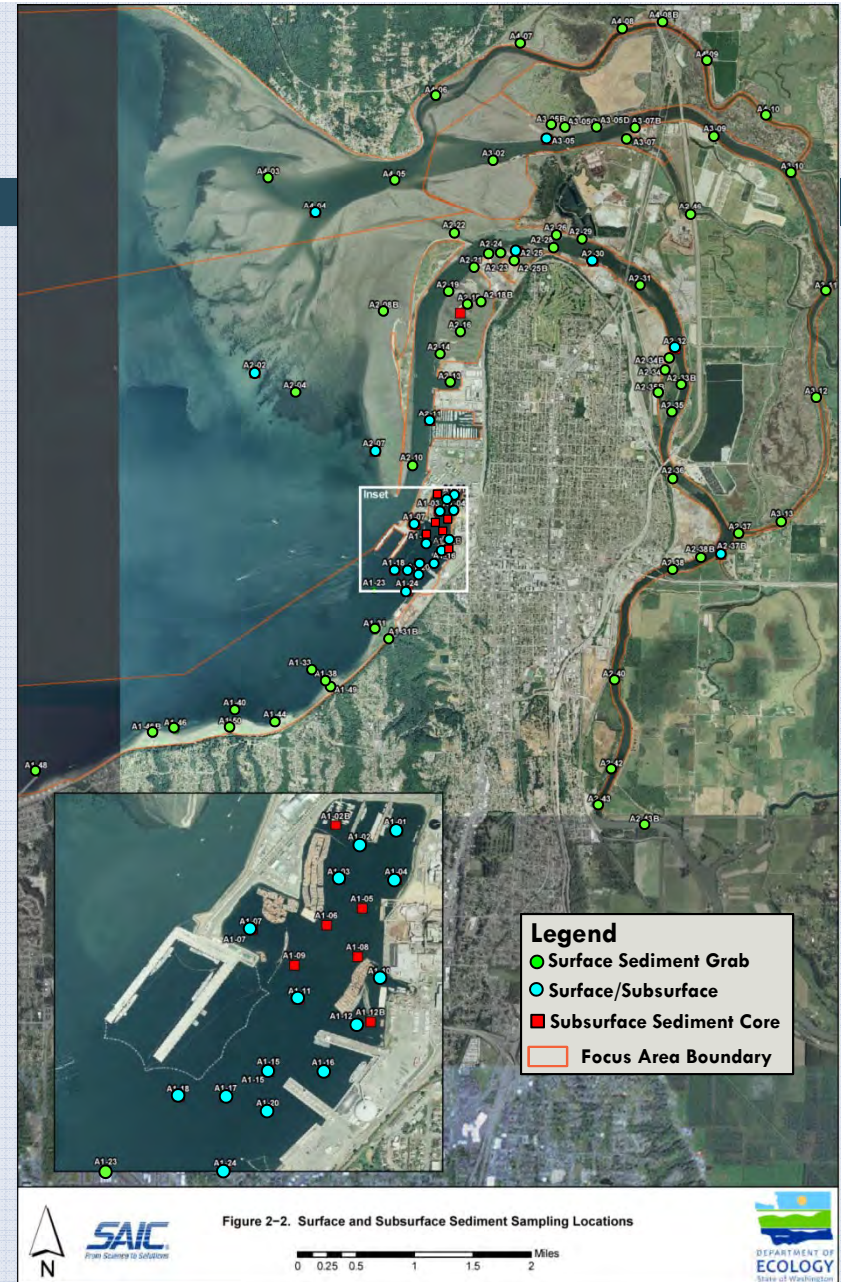


Port Gardner Baywide

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2008 Baywide Study

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

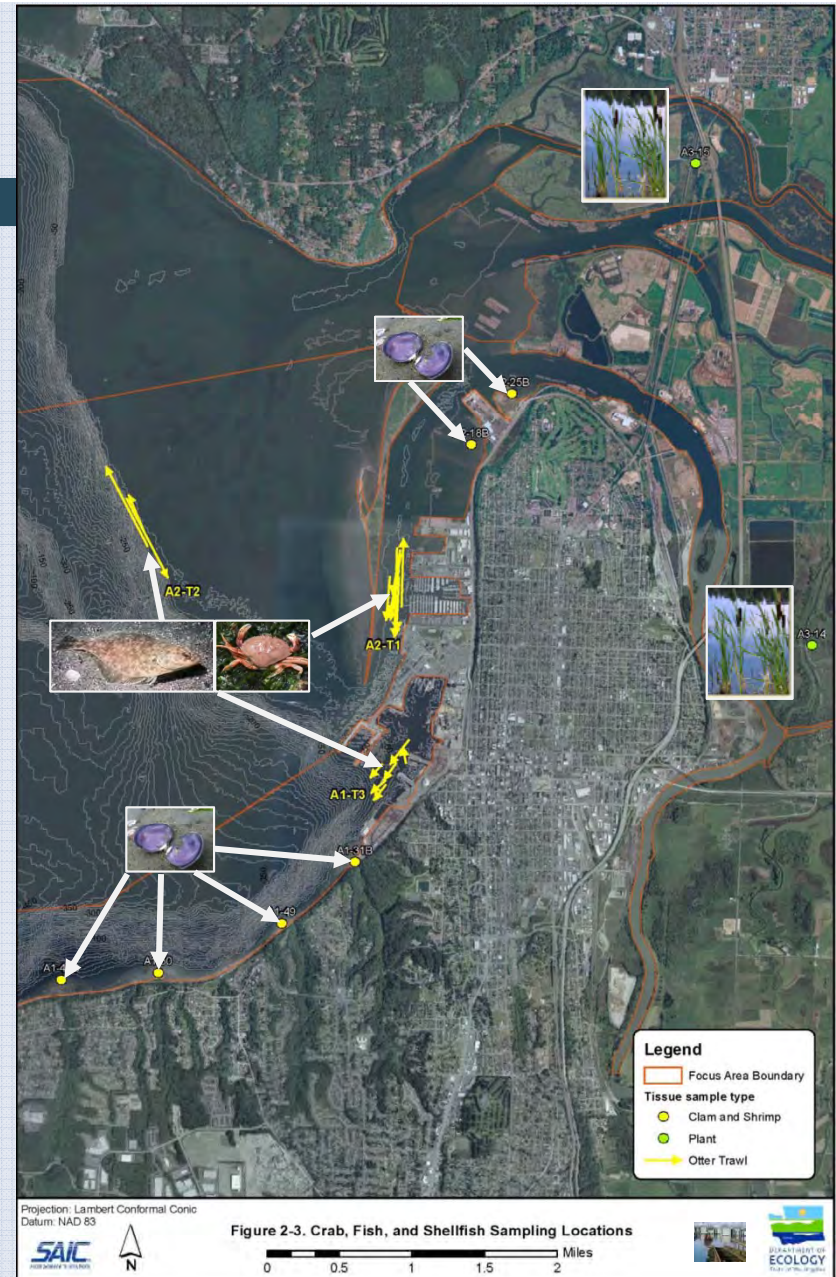


Port Gardner Baywide

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2008 Baywide Study

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



Port Gardner Baywide

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- ❑ **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

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Underwater Camera Images



Healthy Sediment with Eelgrass – west of Jetty Island



Wood Waste – Anoxic Conditions – East Waterway

Jeld-Wen Site

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Jeld-Wen Site

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❑ Site Use

- Pole Treating
- Sawmill
- Casket Factory
- Former Door Manufacturer

❑ Primary Sources

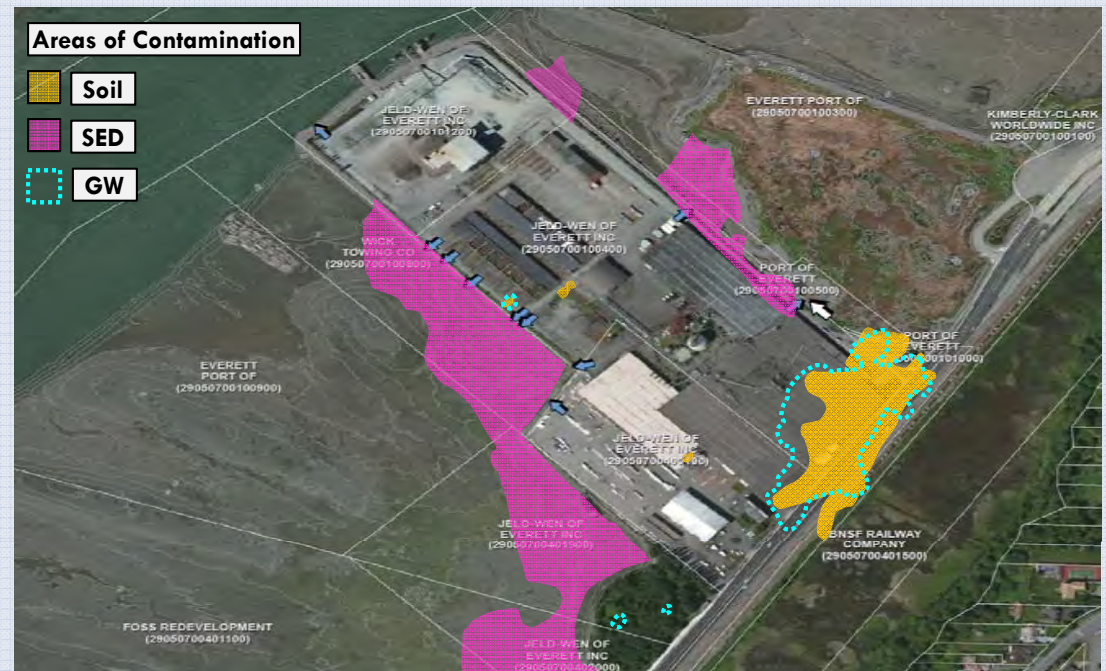
- Creosote Tanks
- Fuel Oil Tanks
- Woodlife Tank
- Hog Fuel Burner Emissions
- Discharges to Puget Sound



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Contaminants

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



Status/Schedule

Agreed Order

2008

RI/FS Report

Summer 2015

DCAP/CD

Winter 2015

Cleanup

Construction

2016/2017

Bay Wood Products Site

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Bay Wood Products Site

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❑ 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

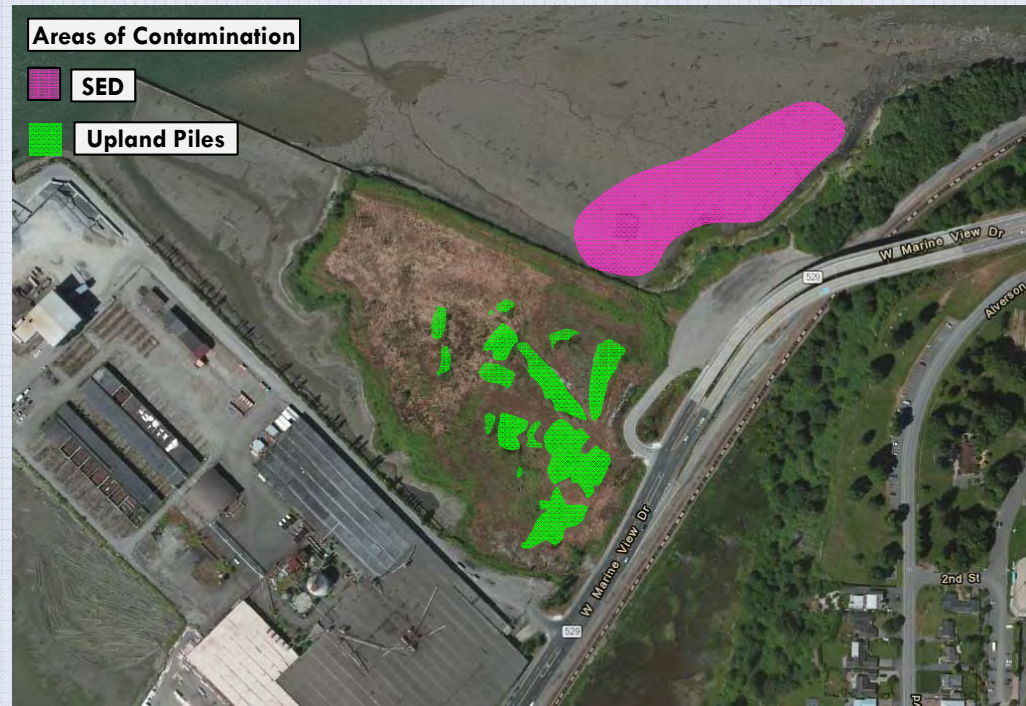
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Contaminants

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



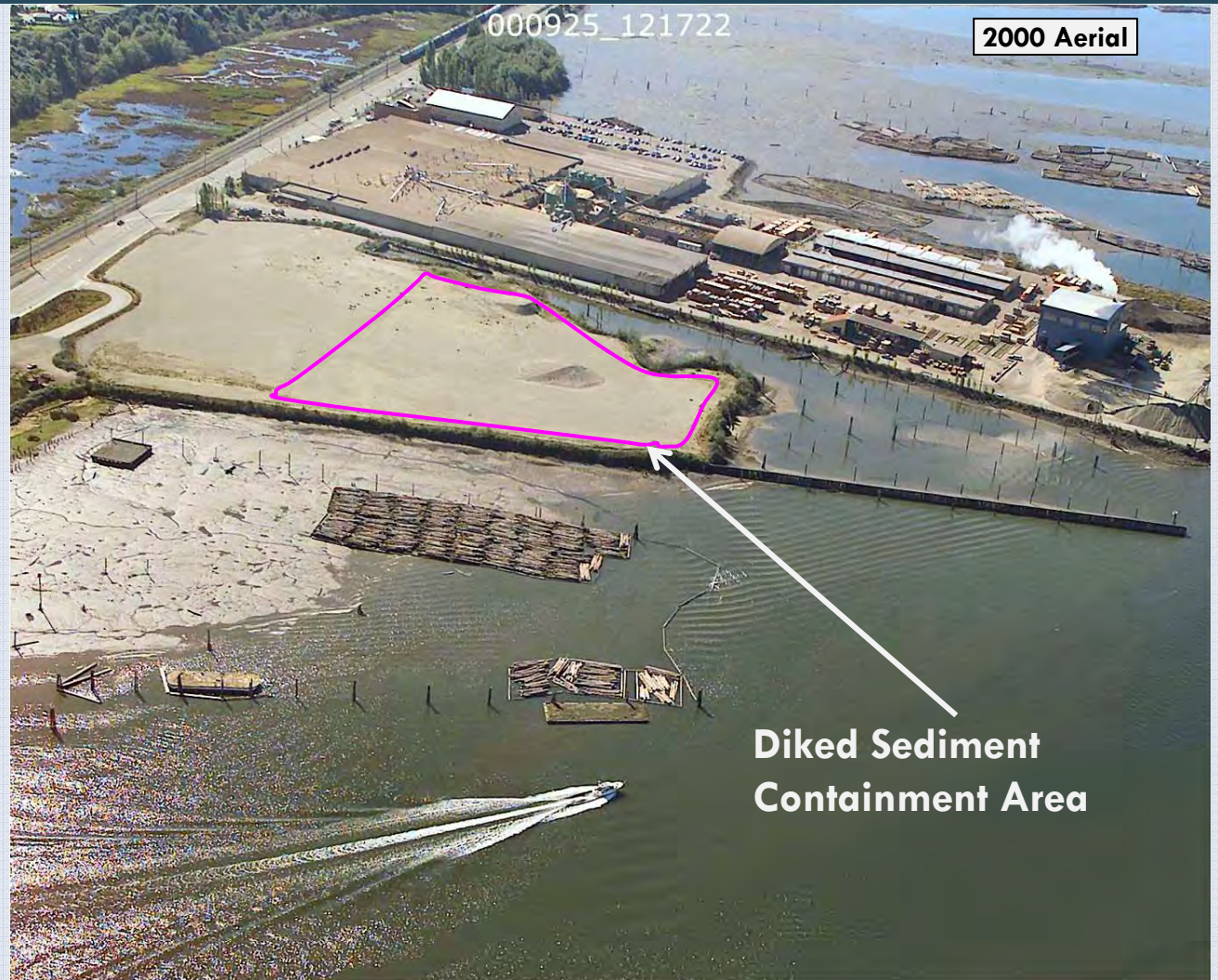
Status/Schedule

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

Bay Wood Products Site

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**Wood Waste
Removal Area**



Bay Wood Products Site

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Upland Soil Stockpiles



Bay Wood Products Site

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Contaminated Pile Removal



North Marina Area Sites

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North Marina Area Sites

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- ❑ 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

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❑ 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

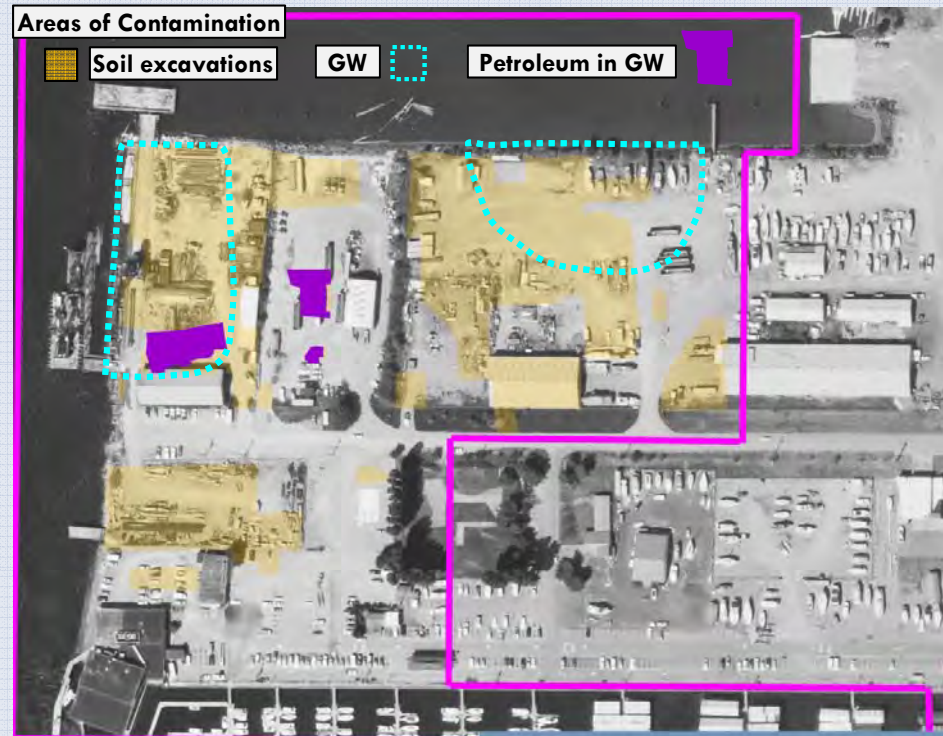
38

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

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Deep Soil Excavation



Soil Excavation Area



Ameron/Hulbert Site

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❑ 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

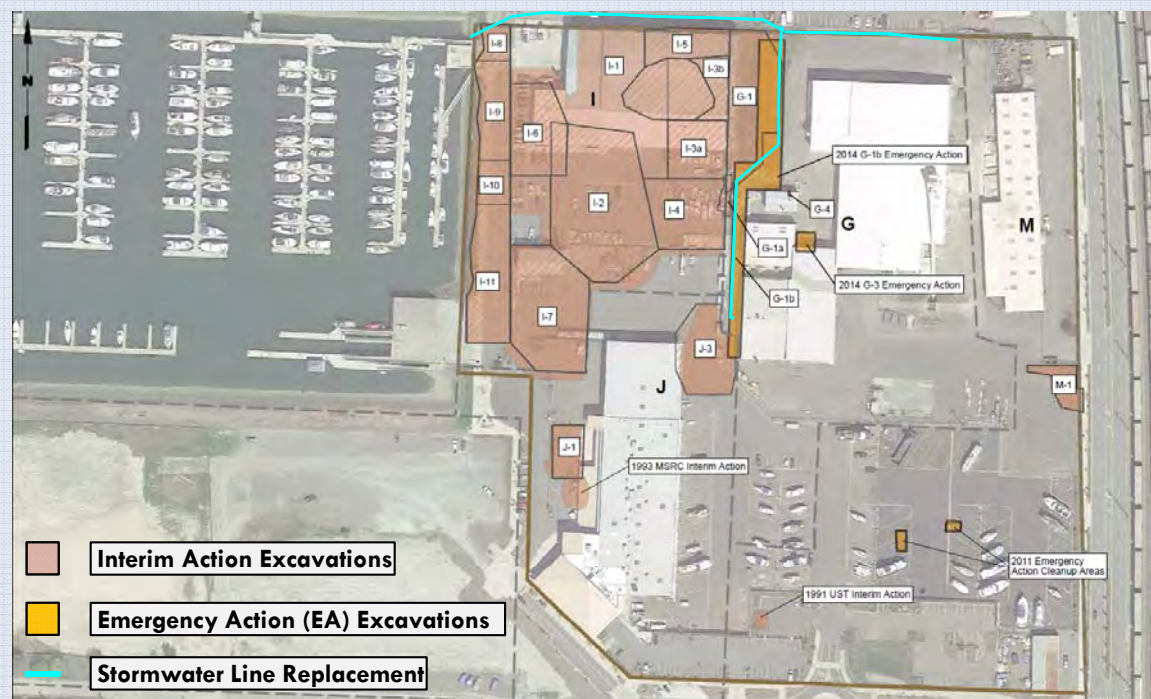
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Contaminants

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

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Cleanup Action Areas



Ameron/Hulbert Site

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Concrete Wastes



Black Sand Blast Grit



Everett Shipyard Site

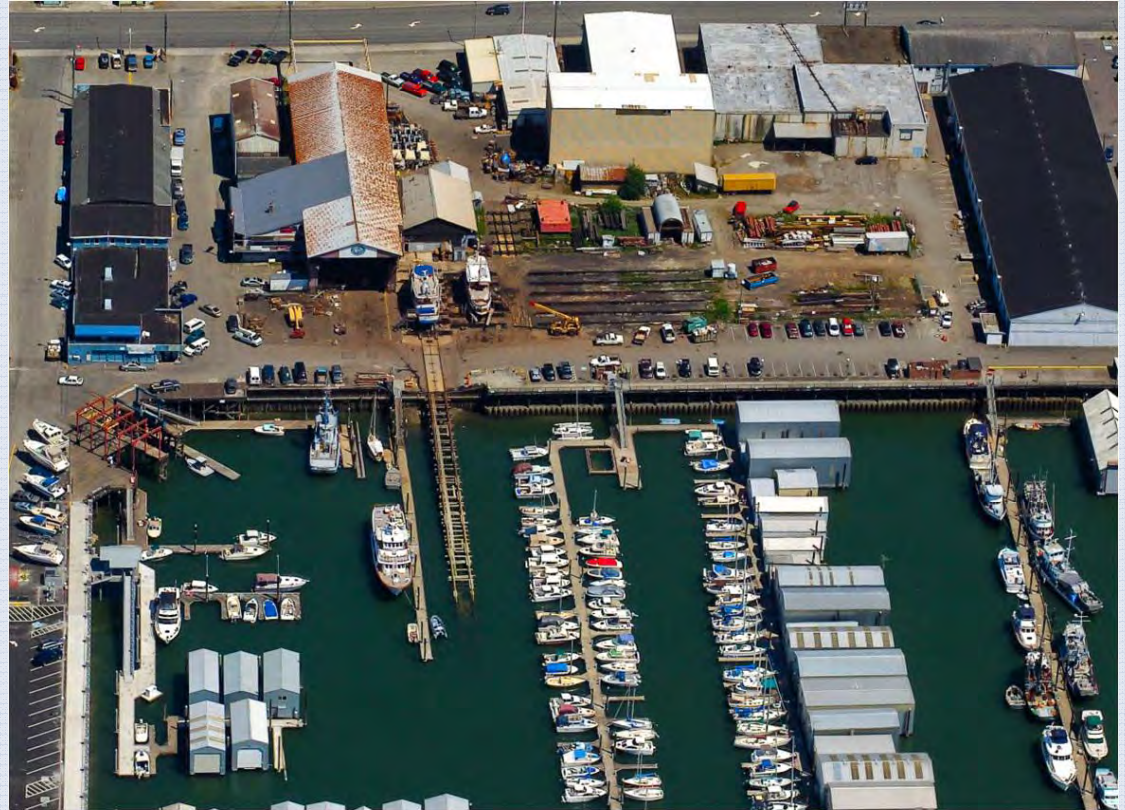
44

❑ 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

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Contaminants

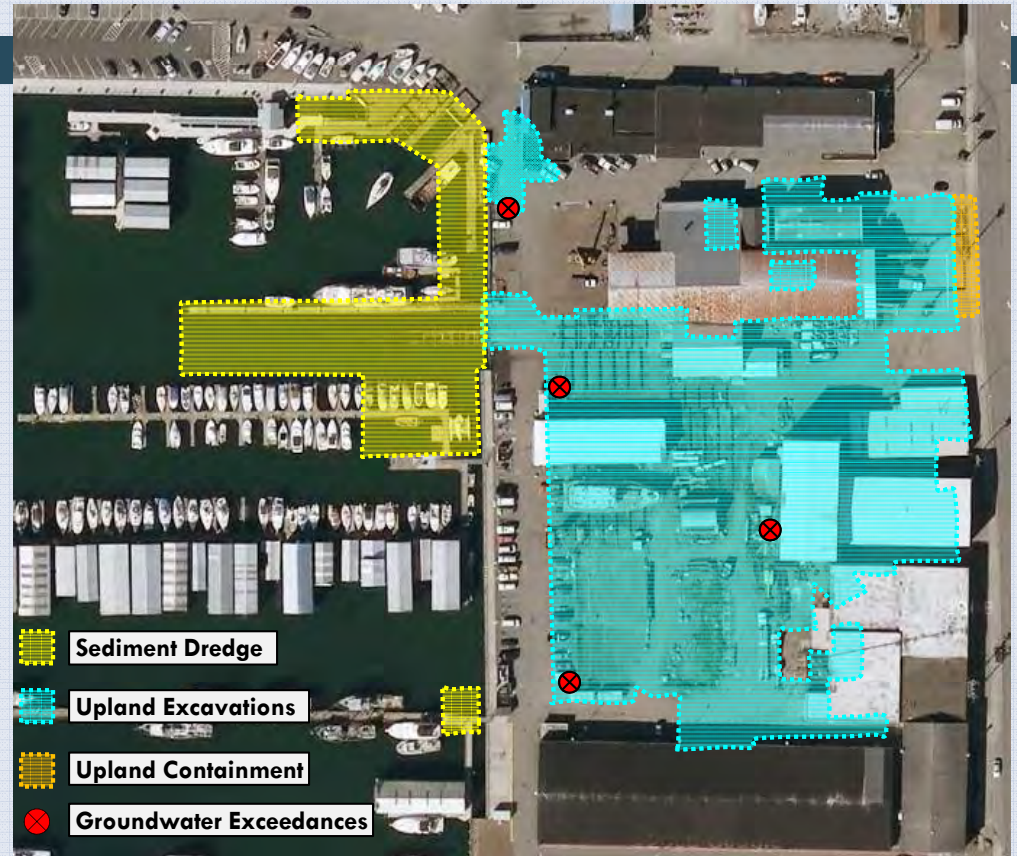
Chemical	Soil	GW	SED
Metals	●	●	●
PAH	●		●
TPH	●	●	
PCB	●		●
Tributyltin			●

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

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Upland Cleanup – November 2013



TC Systems

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TC Systems

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❑ 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

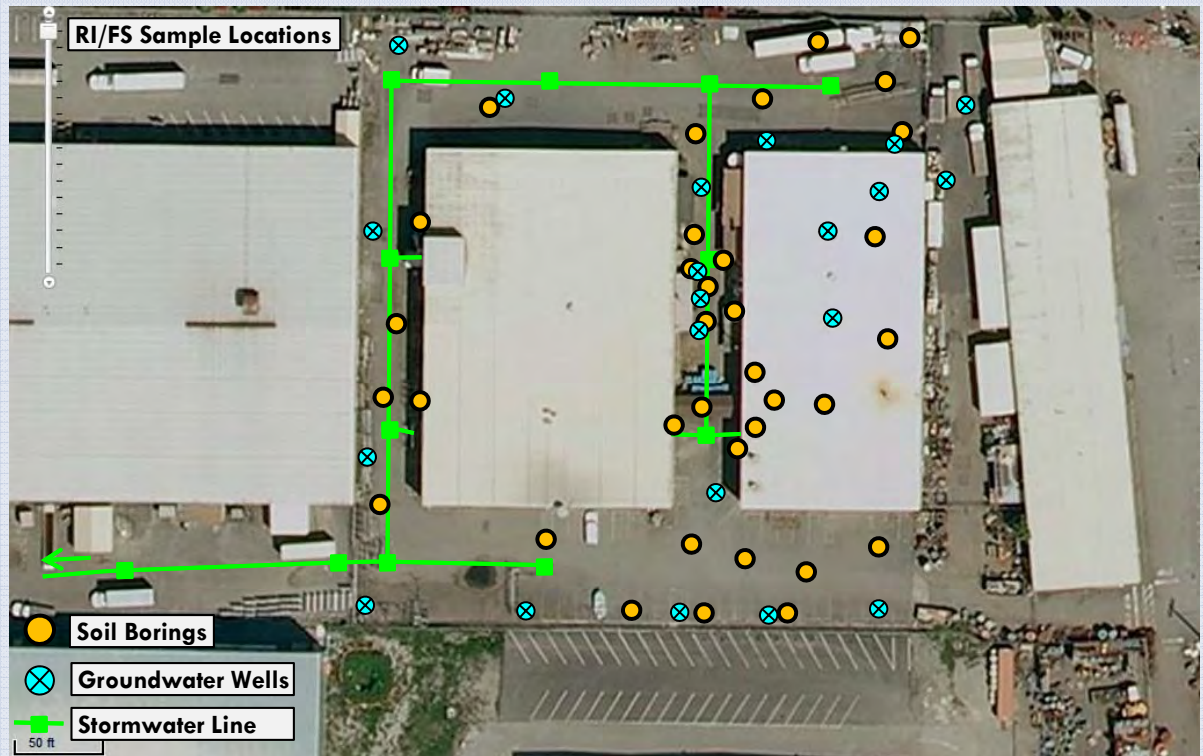
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Contaminants

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

2010

RI/FS Report

Spring 2015

DCAP/CD

Fall 2015

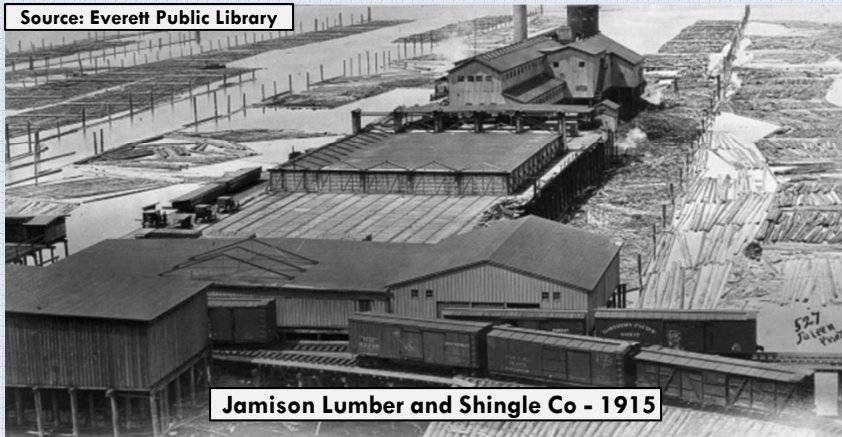
Upland Cleanup

2016

TC Systems

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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

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Heavy Industrial to Light Commercial



Kimberly-Clark Worldwide - Uplands

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Kimberly-Clark Worldwide - Uplands

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❑ 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

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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

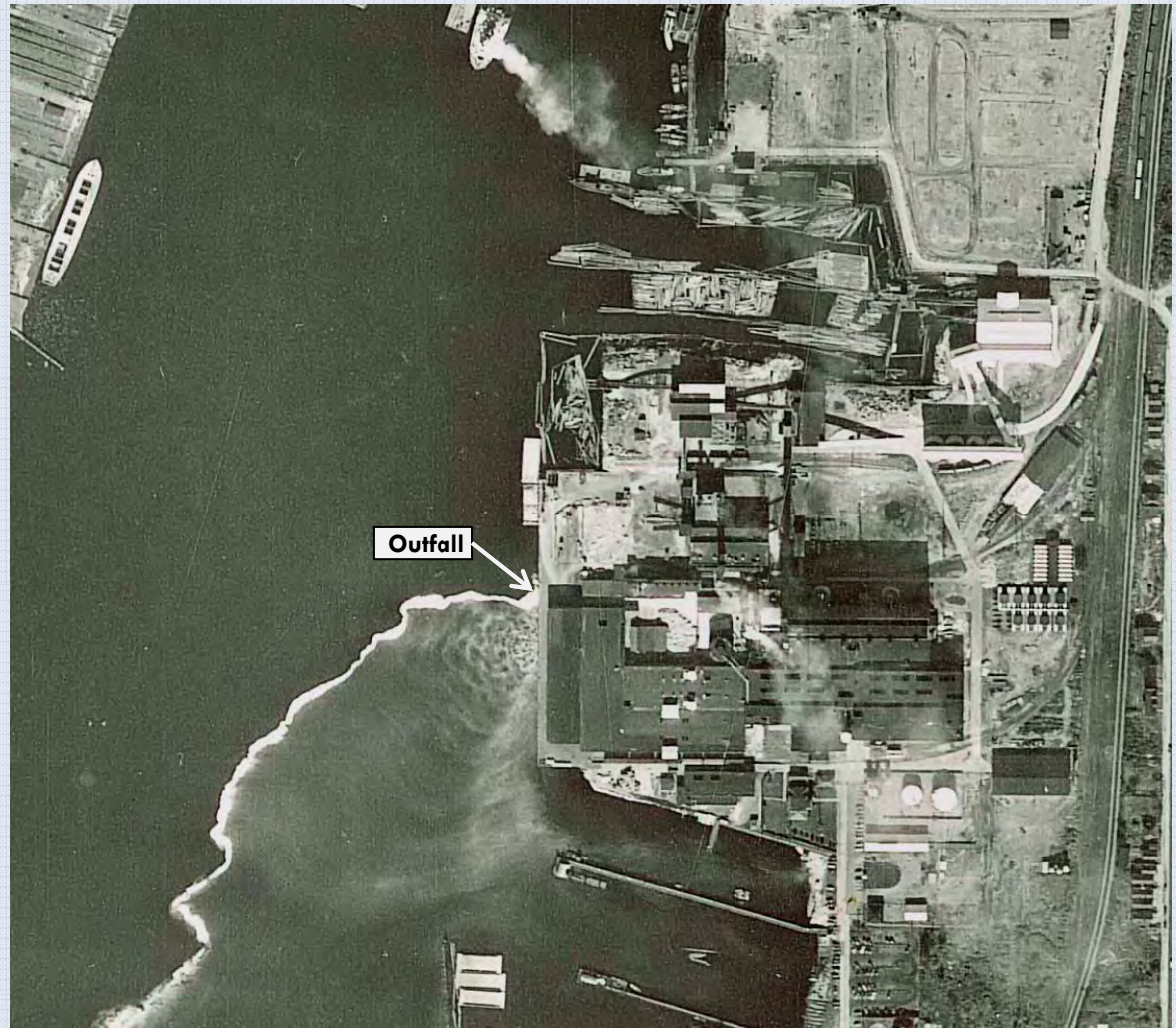
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Kimberly-Clark Worldwide - Uplands

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*Former Kimberly-Clark
Pulp and Paper Mill*



Kimberly-Clark Worldwide - Uplands

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Upland Interim Action Areas



Kimberly-Clark Worldwide - Uplands

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RI/FS Sampling



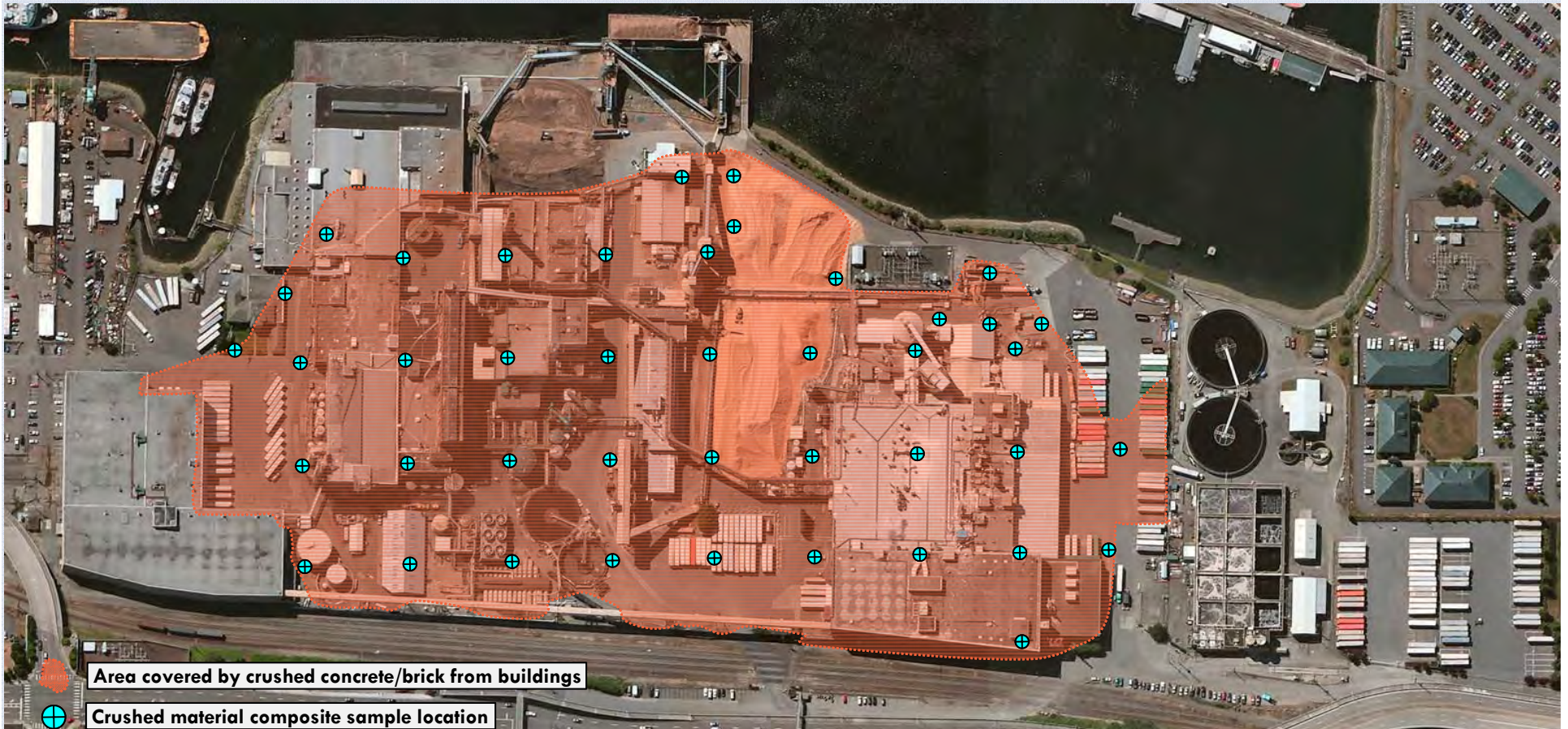
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Kimberly-Clark Worldwide - Uplands

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Crushed Building Debris Sampling



Kimberly-Clark Worldwide - Uplands

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ExxonMobil ADC Site

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ExxonMobil ADC Site

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



ExxonMobil ADC Site

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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



1977 Aerial

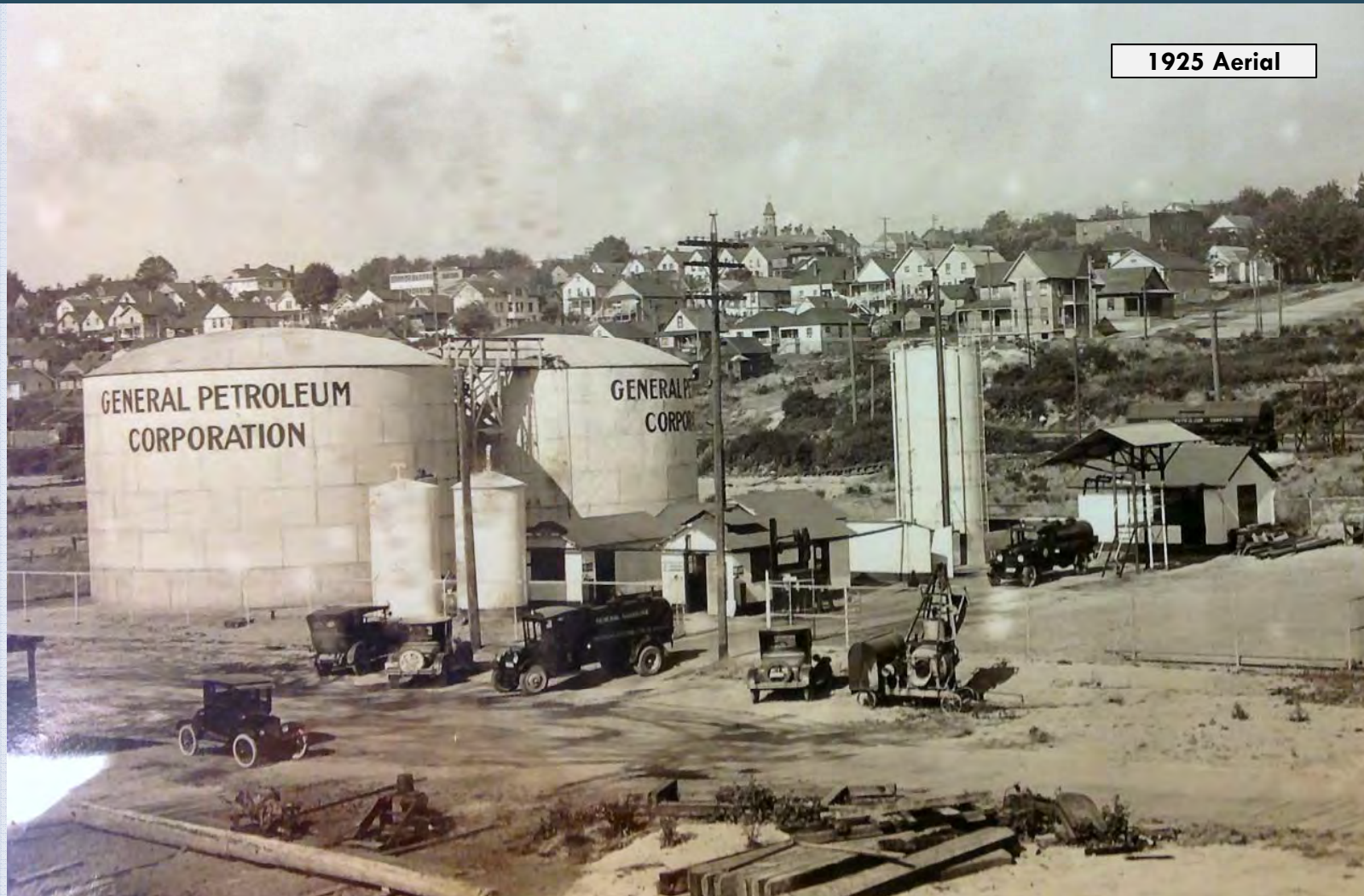
Status/Schedule

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

This aerial map of the Port of Los Angeles illustrates groundwater contamination. The legend identifies various features: GW Wells (blue 'X'), Abandoned GW Wells (green 'X'), Soil Borings (yellow dots), Interim Excavation (pink hatched area), Petroleum Contaminated Soil (orange hatched area), Historic Railroad Loading Racks (green hatched area), Dissolved GW Plume (dashed blue line), Historical ADC Dock (green line), GW Flow Direction (blue arrow), Areas with LNAPL (blue circles), Approaching Residual Saturation (yellow circles), City CSO (dashed yellow line), and Test Pit (pink square). The map shows a large area of petroleum-contaminated soil (orange) and a dissolved GW plume (dashed blue line) extending from the port area towards the city. A large blue arrow indicates the GW flow direction from the port towards the city.

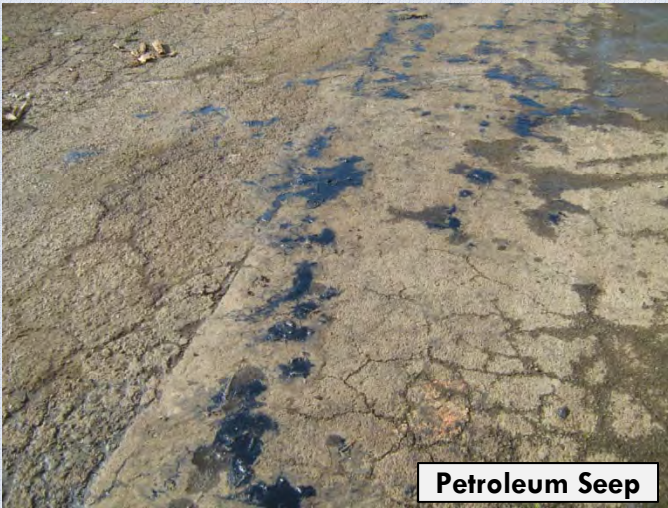
ExxonMobil ADC Site

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ExxonMobil ADC Site

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Petroleum Seep



Former City Dump



LPH Recovery

ExxonMobil ADC Site

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Weyerhaeuser Mill A Former Site

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Weyerhaeuser Mill A Former Site

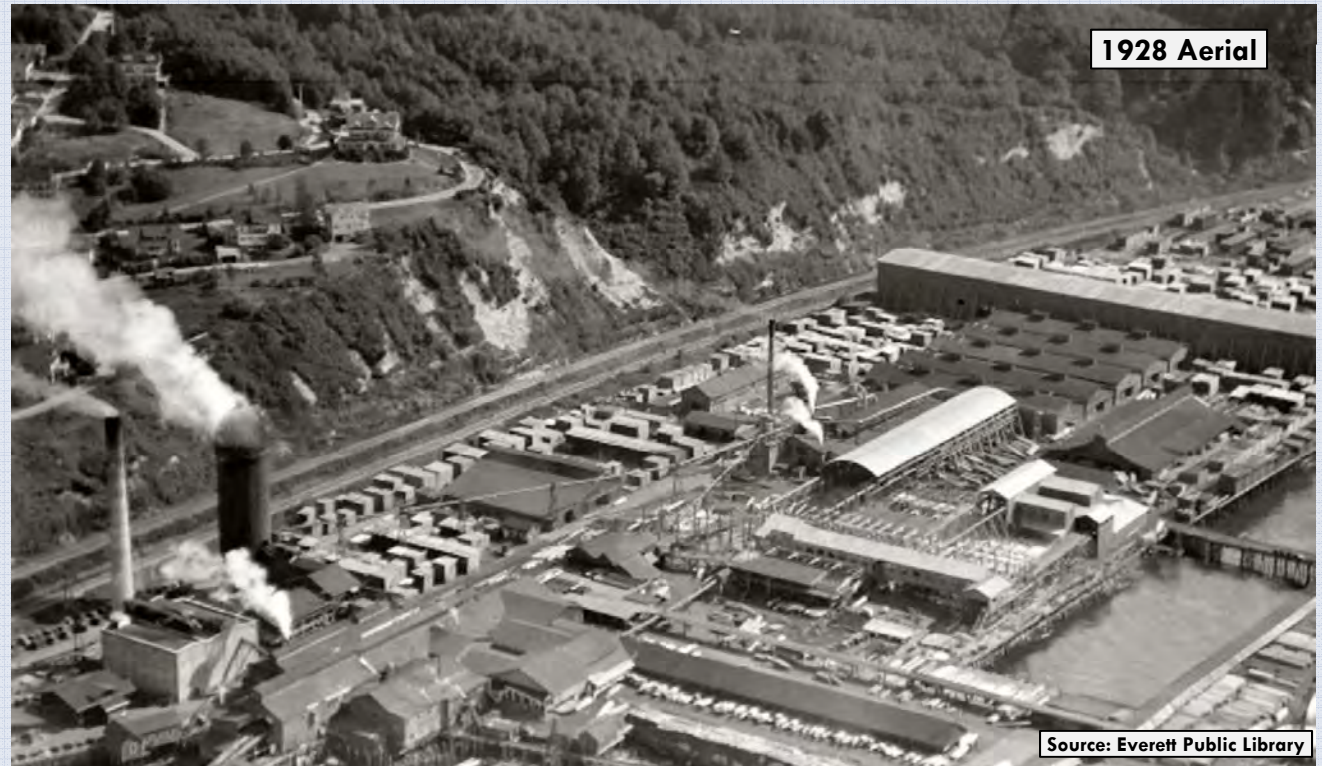
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❑ Site Use

- 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

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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

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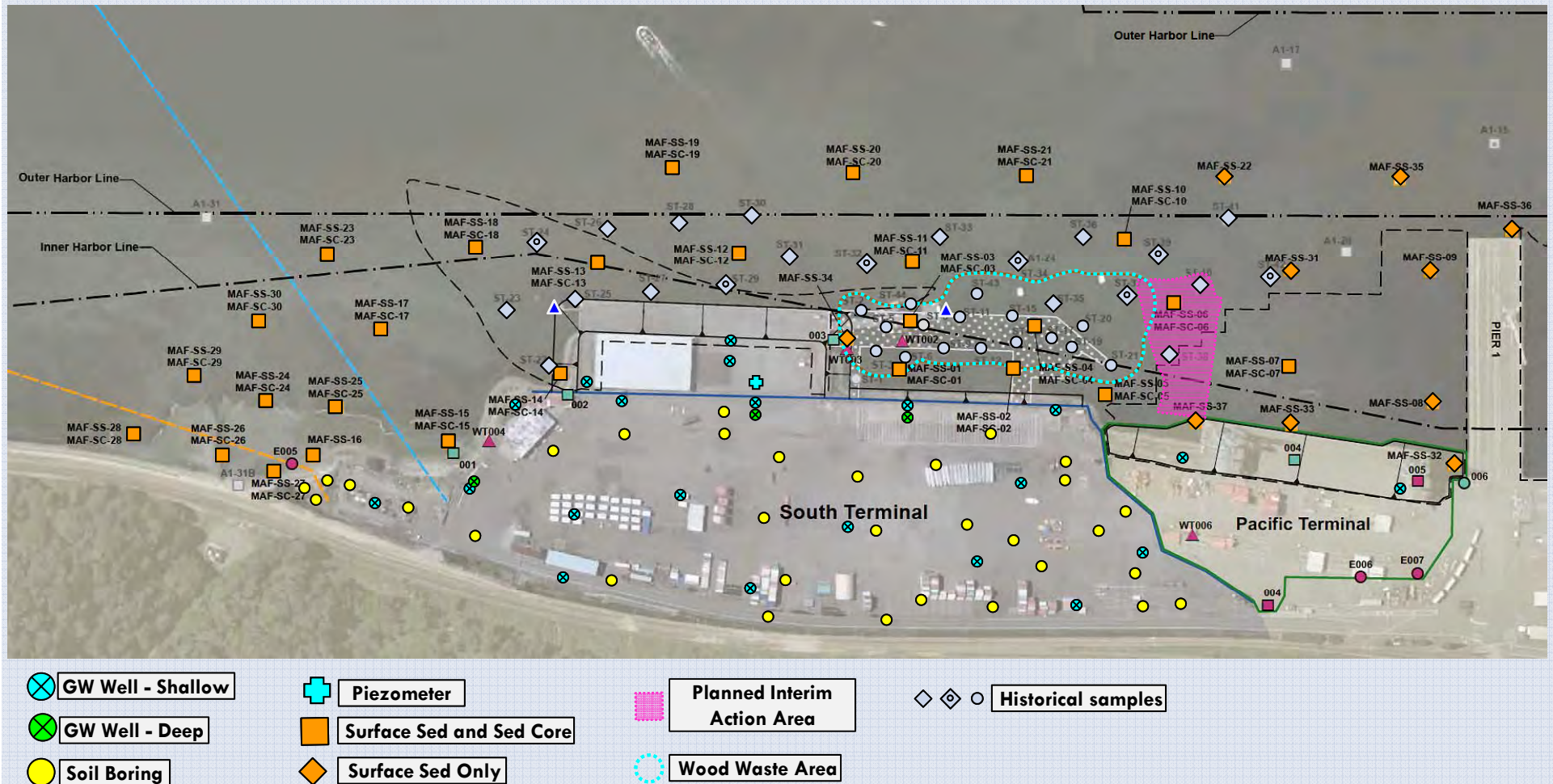
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Weyerhaeuser Mill A Former Site

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RI/FS Planned Sample Locations



Weyerhaeuser Mill A Former Site

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Weyerhaeuser Mill A Former Site

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Public Beach



East Waterway

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East Waterway

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❑ 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



Source: Everett Public Library

East Waterway

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*Naval
Shipyard —
World War II*



East Waterway

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☐ Contaminants

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



1930s

Status/Schedule

Agreed Order

2014

RI Field Work

TBD

RI/FS Report

TBD

DCAP

TBD

Cleanup

TBD

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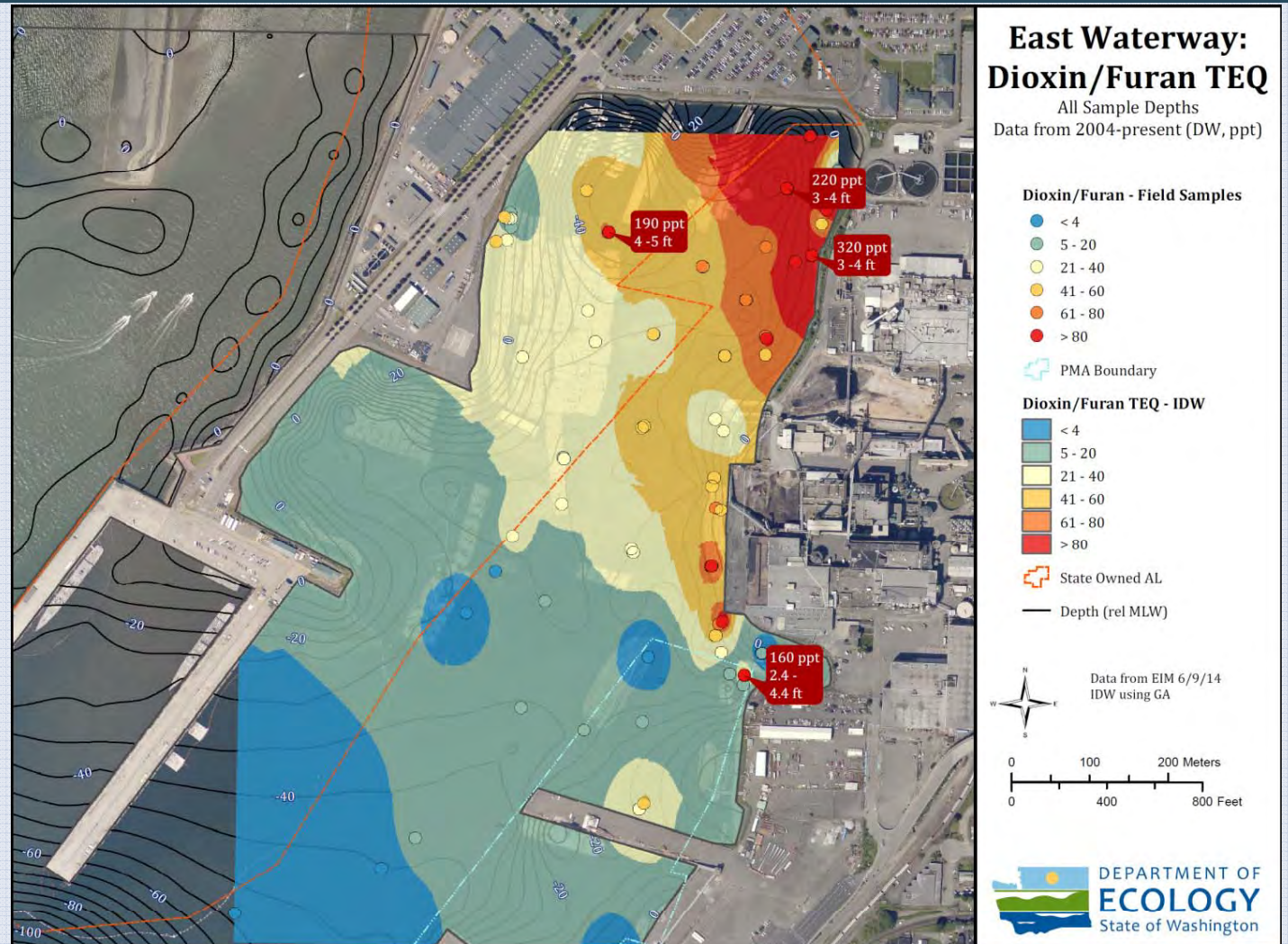
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East Waterway

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Dioxin/Furan Concentrations



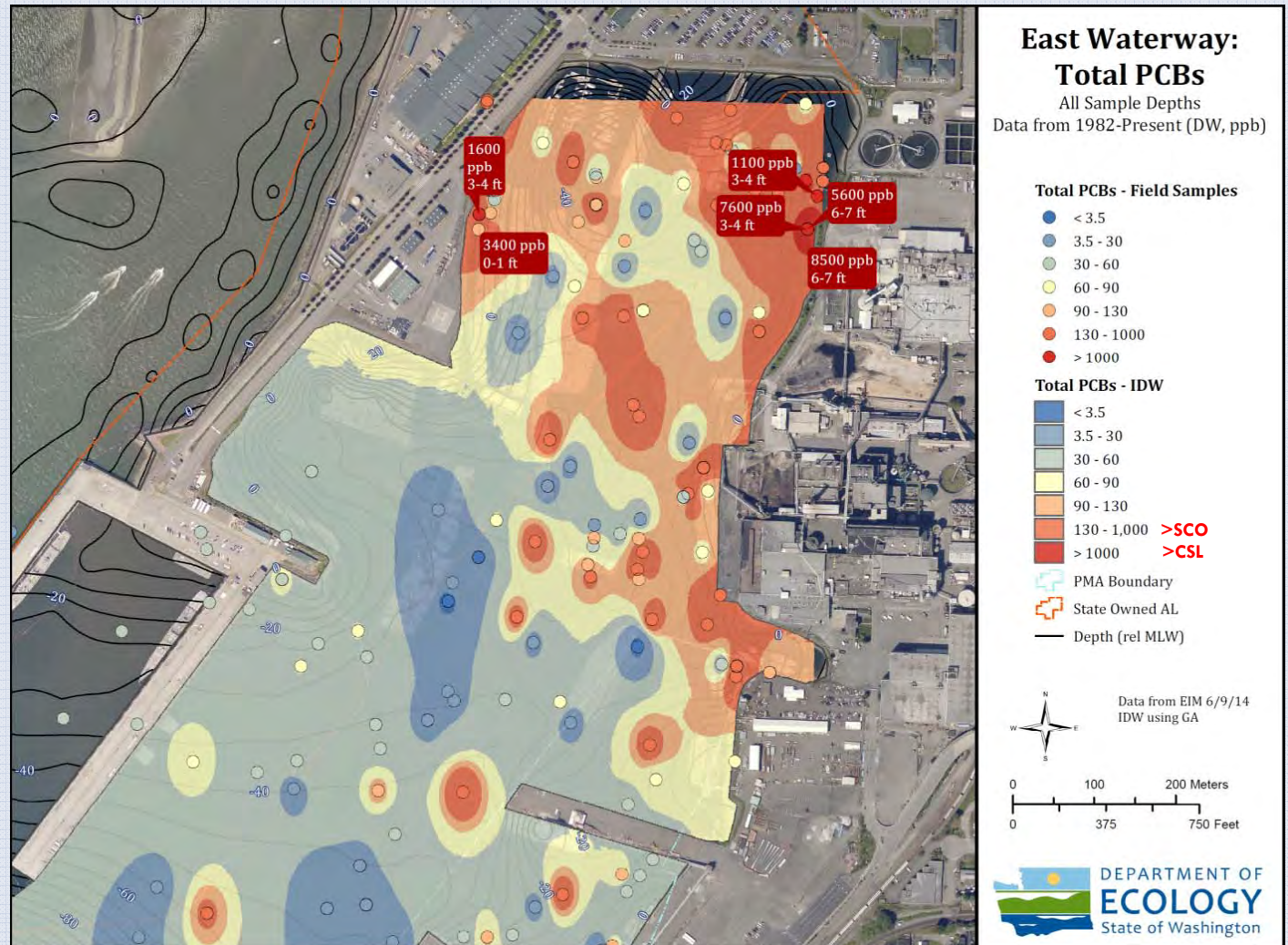
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East Waterway

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PCB Concentrations



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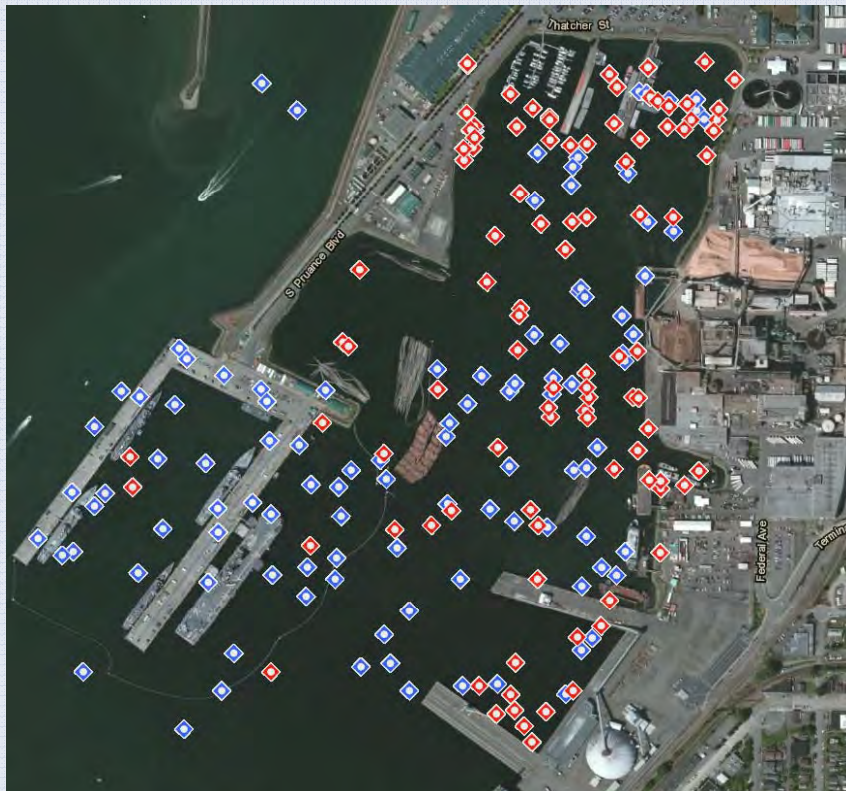
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East Waterway

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PAHs – Reviewed all surface/subsurface data in EIM

cPAH TEQ data > 10 x Natural Background
(Natural Background = 16 ppb)



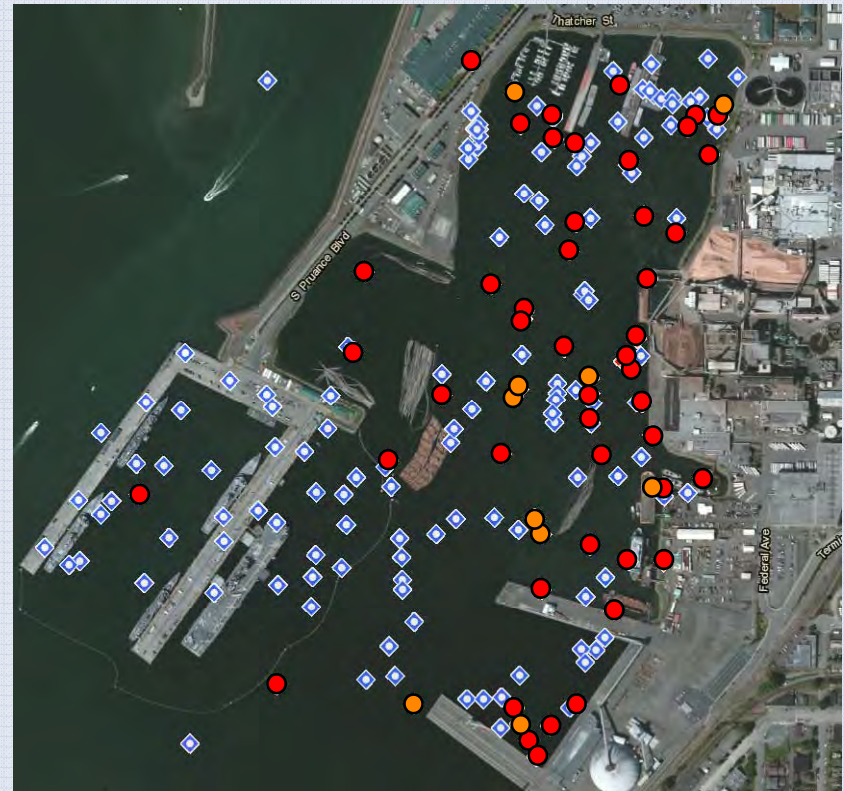
SMS = Sediment Management Standard

SCO = Sediment Cleanup Objective

CSL = Cleanup Screening Level

PAH data > SMS Benthic Criteria

● CSL Exceedance ● SCO Exceedance

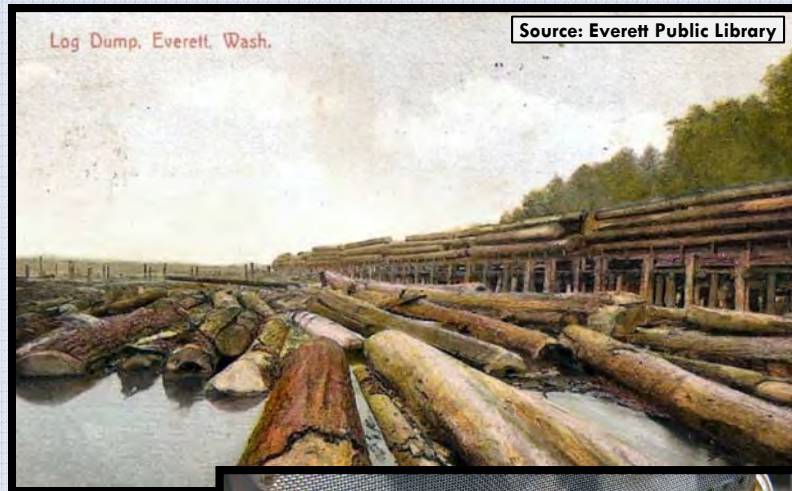


East Waterway

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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

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- ❑ **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

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- ❑ 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?

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