

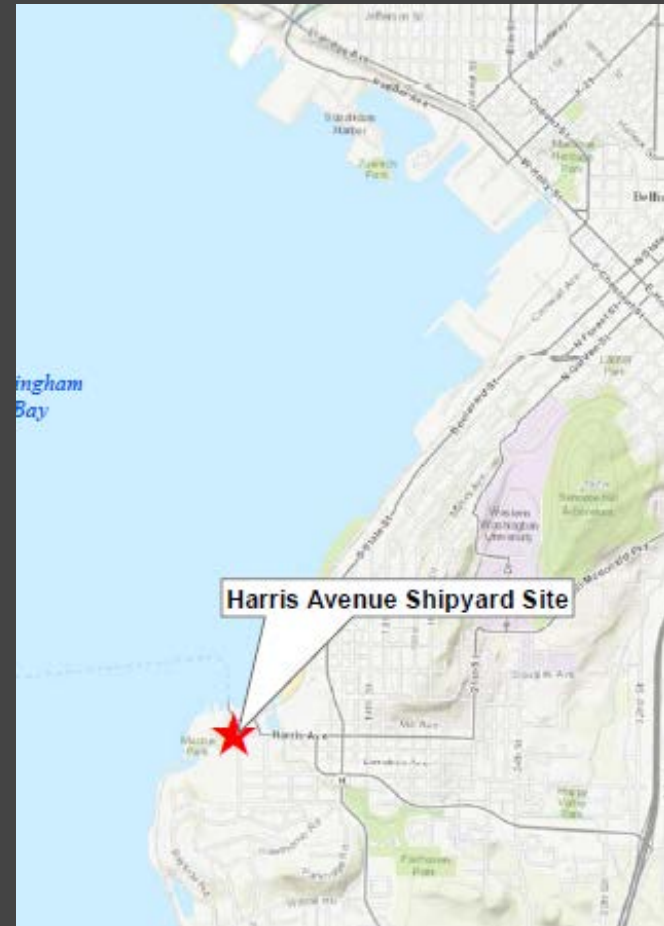
HARRIS AVENUE SHIPYARD PROPOSED INTERIM ACTION

PUBLIC MEETING
MARCH 26, 2015

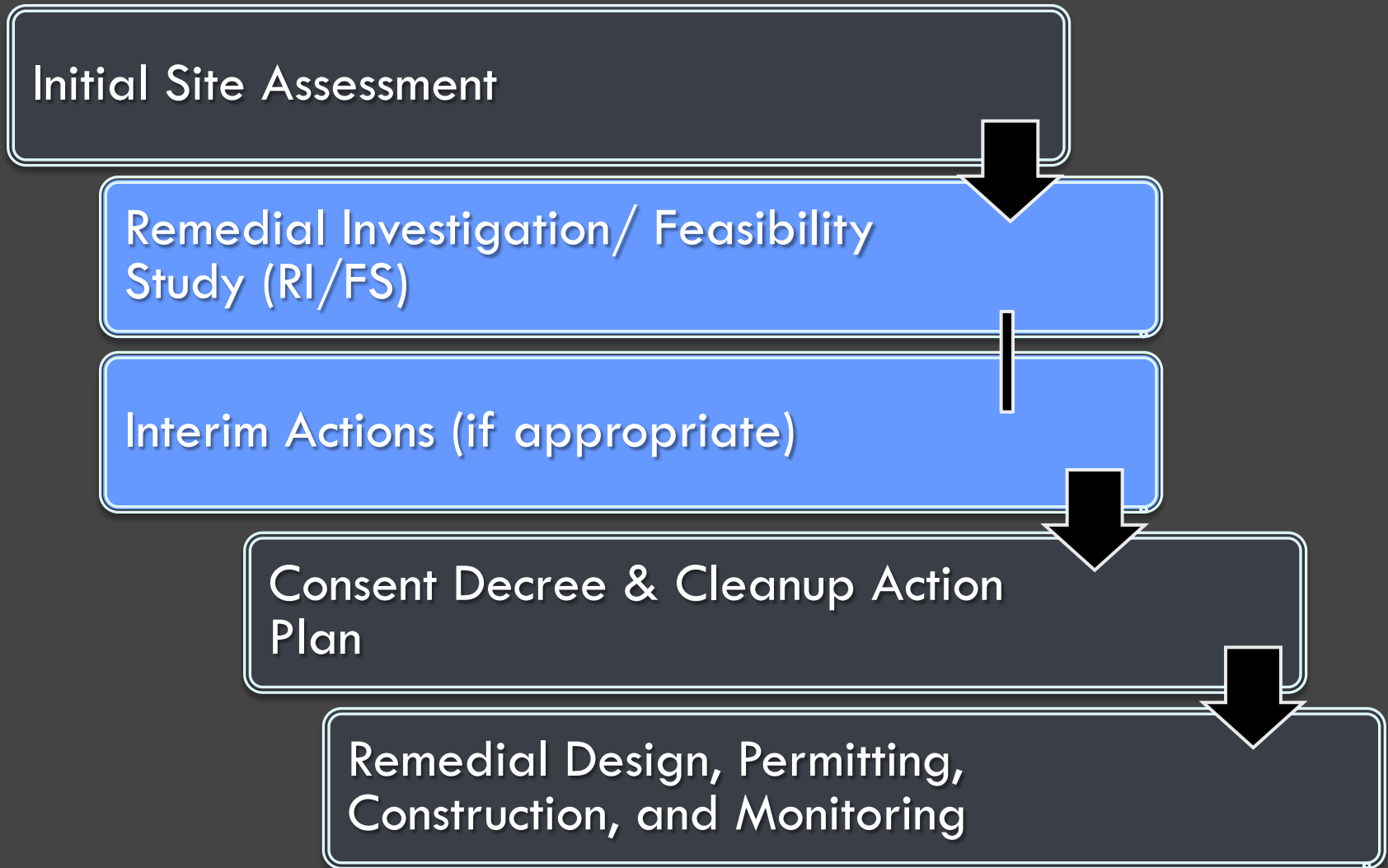
AGENDA

- **6:00 – 6:10** Introduction, Meeting Purpose & Process Overview –
John Guenther, Brad Petrovich, Ecology
- **6:10 – 6:25** Site History & Environmental Conditions –
Mike Stoner, Port of Bellingham
- **6:25 – 6:55** Site Cleanup –
Stephen Bentsen, Floyd|Snider
- **6:55 – 7:00** Closing and next steps –
John Guenther, Brad Petrovich, Ecology
- **7:00 – 8:00** Questions and answers

HARRIS AVENUE SHIPYARD INTERIM ACTION



MTCA CLEANUP PROCESS



BACKGROUND

- Site is about 10 acres in size: 5 acres of uplands, 5 acres of aquatic land
- Property ownership is a combination of State and Port-owned land
- Over 100 years of commercial activities including fish processing facilities, ship building and ship repair
- Current Port tenants: Fairhaven Shipyards (Puglia) and All American Marine



CURRENT OPERATIONS



□ Fairhaven Shipyards/Puglia

- Ship-building and repair services
- Dry Dock, Faithful Servant
- Marine Railway
- Main Pier, Carpenter Building

□ All-American Marine

- Boat manufacturing
- No in-water services

PRELIMINARY RI/FS FINDINGS

- Preliminary RI/FS to Ecology - June 2014
- Upland Contamination:
 - Arsenic, Copper and Zinc in Shallow Soils
 - Petroleum Contamination in Vicinity of Former Above Ground Storage Tanks
- Sediment Contamination:
 - At Depths of 1 to 4-feet Below Mudline
 - Arsenic, Copper and Zinc
 - Fluoranthene, pyrene, cPAHs and PCBs

STRUCTURAL ASSESSMENT - JULY 2014



UNDER PIER

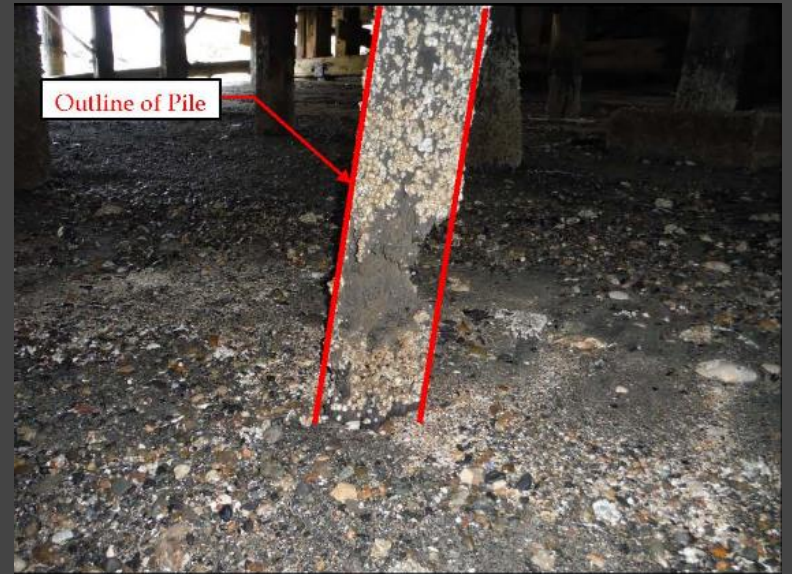


Photo 11. Severely Deteriorated Pile at Bent 11

DECK SURFACE



2005



2011

PROPOSED INTERIM ACTION

- Proposed by Port due to failing infrastructure
- Purpose and Environmental Benefit:
 - Opportunity for a more complete removal
 - Early source control
 - Significant reduction in over-water coverage
- Based on preliminary draft RI/FS and recent sampling

SCOPE OF INTERIM ACTION



- ❑ Limited MTCA footprint
- ❑ Upland and Sediment
- ❑ On-going shipyard operations








INTERIM ACTION CLEANUP GOALS

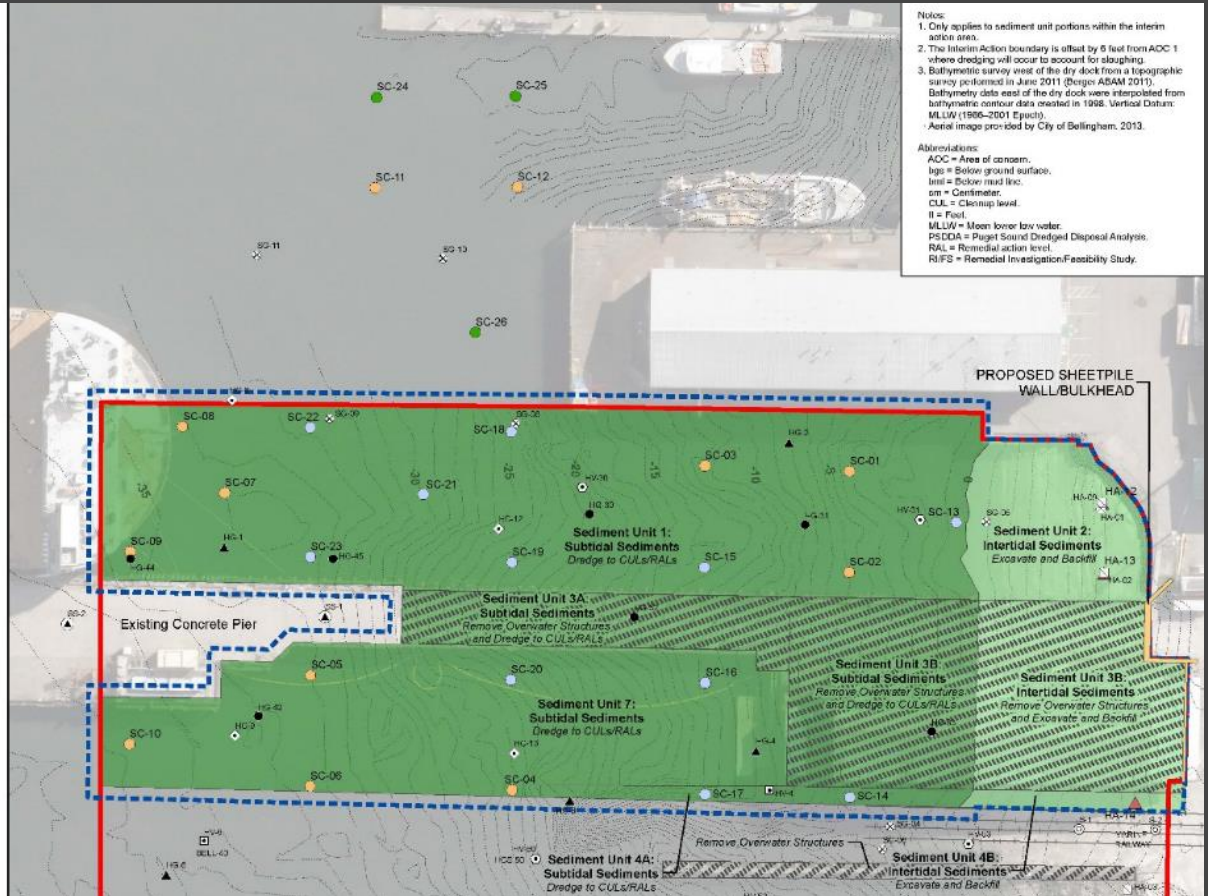
- COCs and CULs are preliminary
- Upland Contaminants:
 - Arsenic, Copper and Zinc
- Sediment Contaminants:
 - Arsenic, Copper and Zinc
 - Fluoranthene, pyrene, cPAHs and PCBs

SEDIMENT SAMPLES

Legend

Sediment Interim Action Components

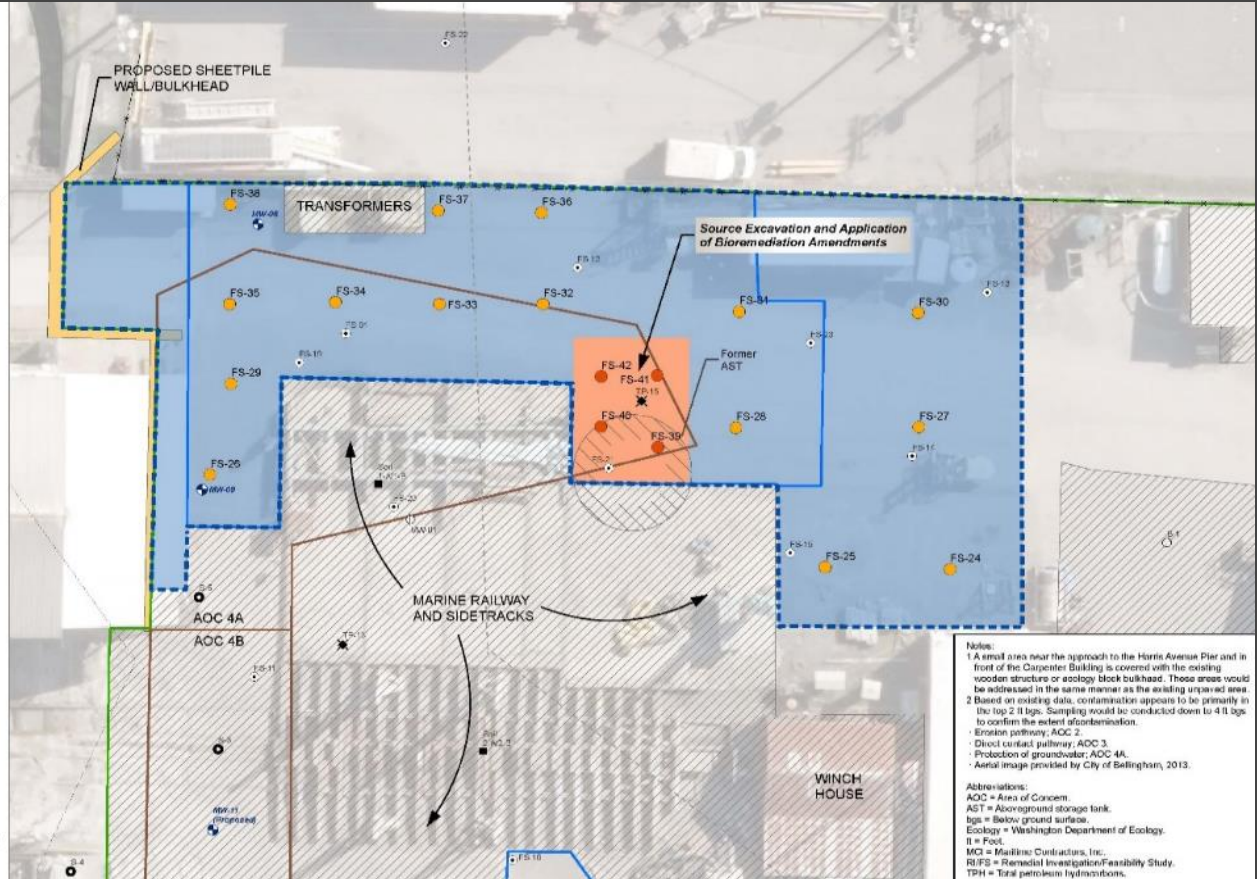
-  **Remove Overwater Structures**
Demolition of existing piers and buildings.
 -  **Subtidal Sediments: Dredge to CULs/RALS**
(Sediment Units: 1, 3A, 3B, 4A, 7)
*Dredge, 3-foot average depth, to CULs/RALS.
Pre-design sampling will confirm dredge depth.
Dredged material to be disposed upland (landfill).*
 -  **Intertidal Sediments: Excavation and Backfill**
(Sediment Units: 2, 3B, 4B)
Excavation, approximately 2-foot thickness, with backfill to maintain existing grades. Material selected for hydrodynamic stability and ancillary habitat benefit.
 -  Proposed Pre-Design Surface Sediment Sample Location (0–12 cm bml)
 -  Proposed Pre-Design Sediment Core Sample Location (0–6 ft bml)
 -  Proposed Pre-Design Surface Sediment (0–12 cm bml) and Sediment Core (0–6 ft bml) Sample Location
 -  Proposed Pre-Design Intertidal Sediment Sample Location (0–4 ft bgs)
 -  Floyd|Snider Grab Sample Location (2011, 2013)
 -  Floyd|Snider Hand Auger Location (2011, 2013)
 -  GeoEngineers Grab Sample Location (1996)
 -  RETEC PSDDA Vibracore Sample Location (2004)
 -  RETEC Phase 2 Grab Sample Location (1998)
 -  RETEC Phase 2 Vibracore Sample Location (1998)
 -  RETEC RI/FS Grab Sample Location (2000, 2003)
 -  RETEC RI/FS Offshore Sample Location (2005)
 -  RETEC RI/FS Vibracore Sample Location (2000)
 -  Sediment Interim Action Area²
 -  AOC 1
 -  1998/2011 Bathymetry Data³
 -  Riprap
 -  Marine Railway
- 0 25 50 100
Scale in Feet



UPLAND SAMPLES

Legend

- Upland Interim Action Components**
- TPH Source Area:** Excavation to approximately 10 feet and application of bioremediation amendments prior to backfilling.
 - Existing Unpaved Area:** Grid sampling with application of one of the following remedies in each grid area:
 - No action.
 - Excavate to cleanup levels.
 - Excavate 1 foot (AOC 3) or 2 feet (AOC 2); place geotextile and gravel cap.
 - Proposed Pre-Design Shallow Soil Grid Sample Location (0-4 ft bgs)**
 - Proposed Pre-Design Deep Soil Grid Sample Location (0-10 ft bgs TPH Source Area)**
 - Compliance Monitoring Well**
 - Floyd/Snider Geoprobe Location (2011, 2013)**
 - MCI and Ecology Upland Grab Sample Location (1993)**
 - RETEC Monitoring Well**
 - RETEC Phase 2 Boring Location (1998)**
 - RETEC Phase 2 Test Pit Location (1998)**
 - RETEC RI/FS Offshore Sample Location (2005)**
 - RETEC RI/FS Upland Sample Location (2005)**
 - Existing Paved Area**
 - Upland Interim Action Area**
 - AOC 2**
 - AOC 3**
 - AOC 4A and AOC 4B**
 - 1998 Bathymetry Data**
 - Fence Line**
 - Harbor Line**
 - Riprap**
- Scale in Feet: 0, 10, 20, 40

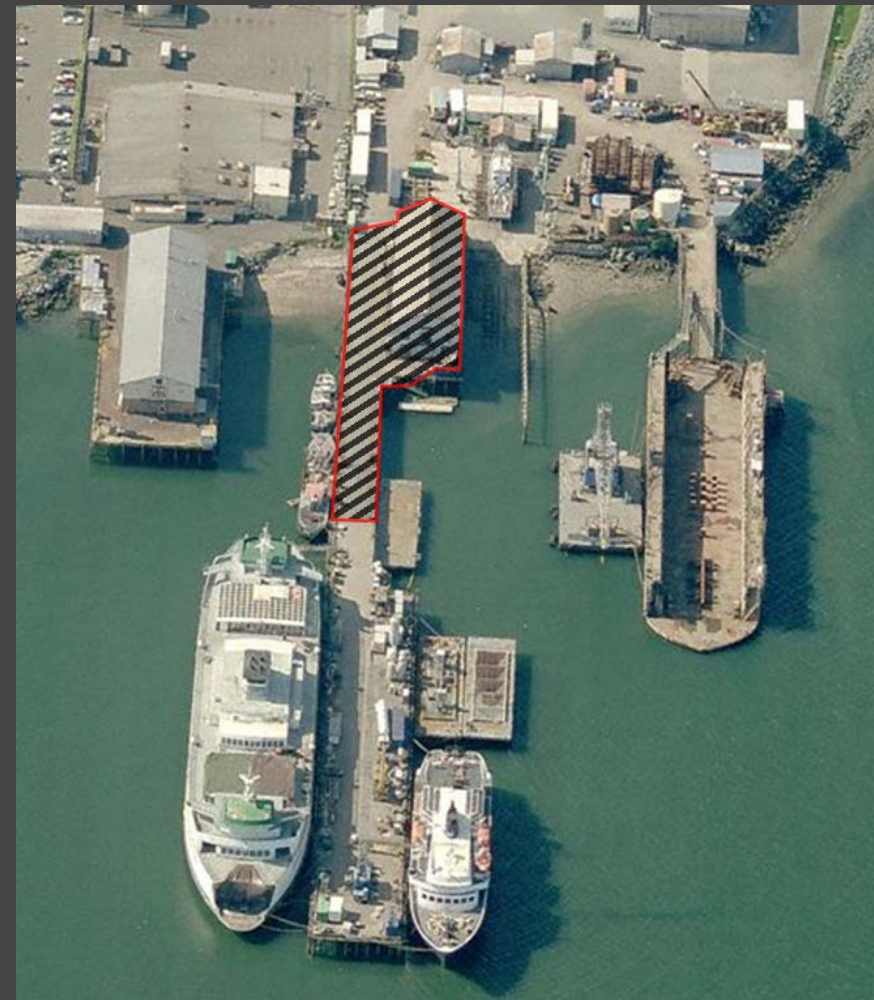


Notes:

- A small area near the approach to the Harris Avenue Pier and in front of the Carpenter Building is covered with the existing wooden structure or ecology block bulkhead. These areas would be addressed in the same manner as the existing unpaved area.
- Based on existing data, contamination appears to be primarily in the top 2 ft bgs. Sampling would be conducted down to 4 ft bgs to confirm the extent of contamination.
- Erosion pathway, AOC 2.
- Direct contact pathway, AOC 3.
- Protection of groundwater, AOC 4A.
- Aerial image provided by City of Bellingham, 2013.

Abbreviations:
 AOC = Area of Concern
 AST = Aboveground storage tank
 bgs = Below ground surface
 Ecology = Washington Department of Ecology
 B = Foot
 MC = Machine Contractors, Inc.
 RI/FS = Remedial Investigation/Feasibility Study
 TPH = Total petroleum hydrocarbons.

REMOVAL OF WOODEN/CREOSOTE STRUCTURES MAIN PIER AND CARPENTER SHOP



DREDGE CONTAMINATED MARINE SEDIMENTS



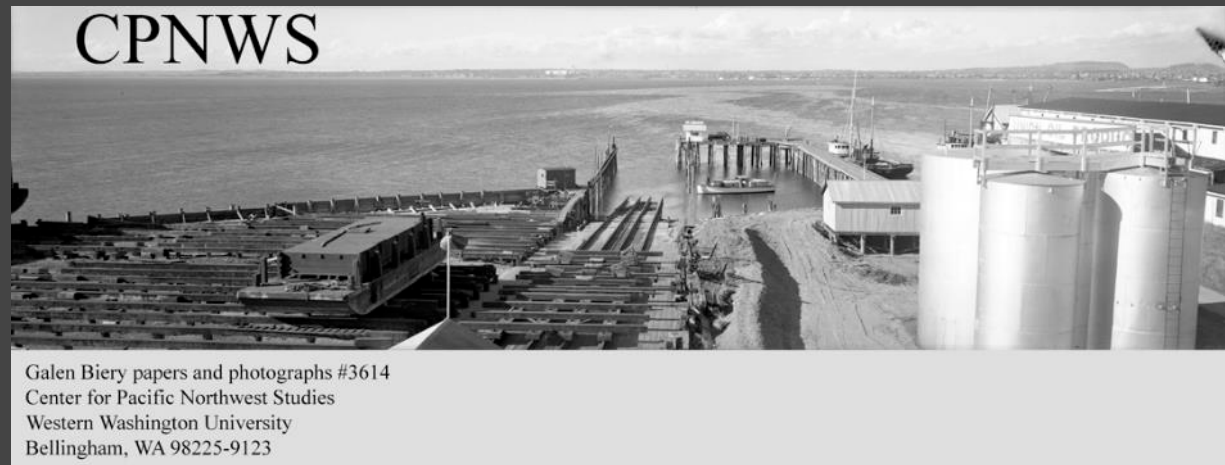
Photo from Vigor Shipyards

EXCAVATE AND BACKFILL INTERTIDAL AREAS

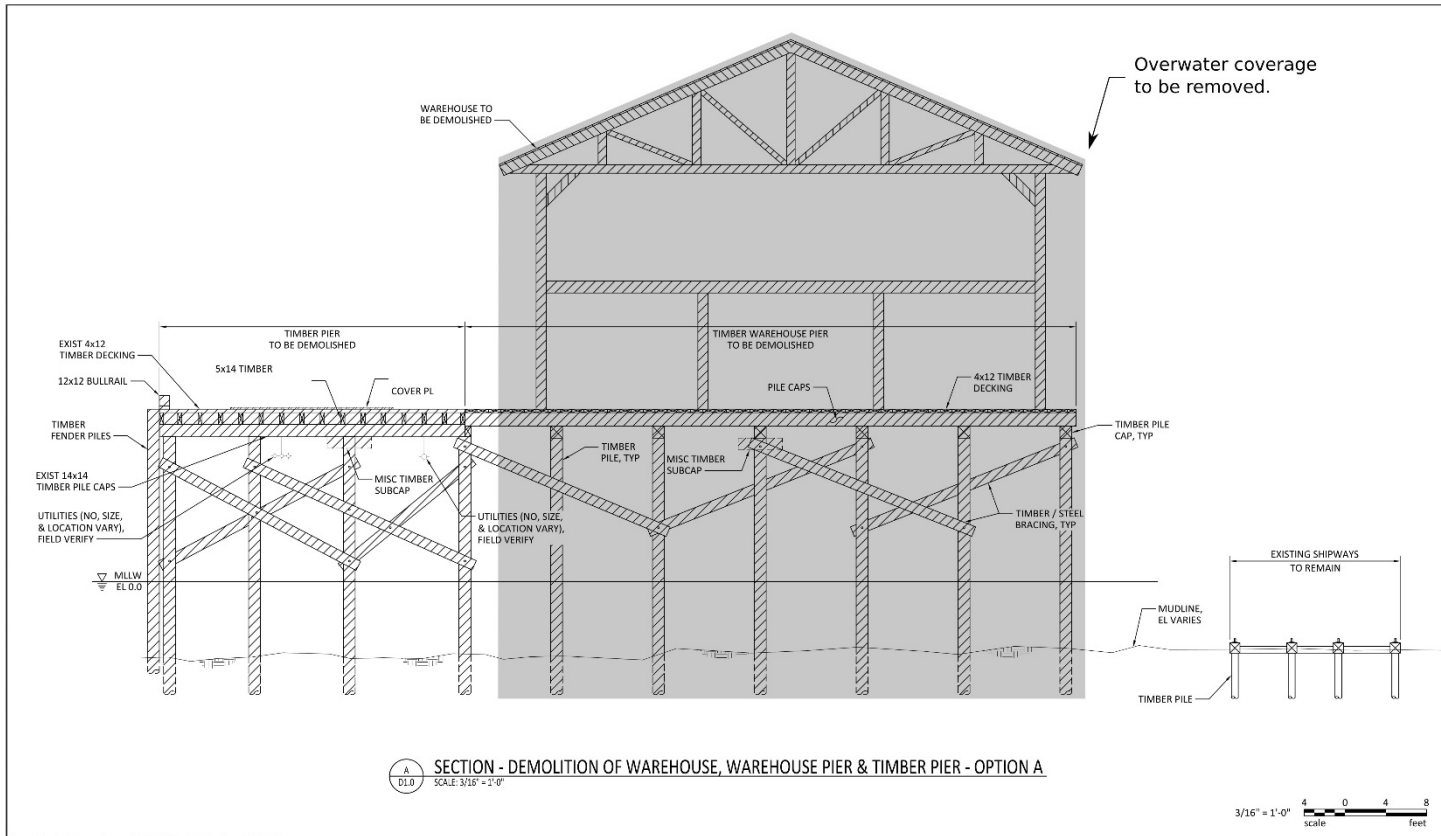


UPLAND EXCAVATION:

- Surface soils throughout Interim Action Area
- Deeper soils in former AST area



REDUCTION OF OVER WATER COVERAGE



SECTION - DEMOLITION OF WAREHOUSE, WAREHOUSE PIER & TIMBER PIER - OPTION A
 DTD SCALE: 3/16" = 1'-0"

Cross Section Source: Berger ABAM; Port of Bellingham; 9/2/2014

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Harris Avenue Shipyard
 Bellingham, Washington

Figure B
 Pier and Carpenter Shop

NEXT STEPS AND SCHEDULE

- Complete Public Review Process
- Public Comment – March 9 to April 7
 - Draft AO Amendment
 - Interim Action Work Plan
 - SEPA Threshold Determination
- Finalize AO Amendment – April/May
- Finalize Basis of Design – April/May
- Permit approvals – June/July
- Interim Action Start – July 2015
- Interim Action Complete - Sept 2016
- Draft Site-Wide RI/FS to public comment

QUESTIONS?



ECOLOGY WANTS YOUR COMMENTS

- Document Availability
 - ▣ Ecology's Web Site
 - www.ecy.wa.gov/programs/tcp/sites
 - Search site name: Harris Avenue Shipyard
 - ▣ Document Repository
 - Bellingham Library – Main Branch
 - Ecology's Bellingham Field Office – Fairhaven
 - Ecology's Northwest Regional Office – Bellevue
- Submit Comments by April 7, 2015
 - ▣ Ecology will prepare response to comments after public comment period
 - ▣ Submit to John Guenther at jgue461@ecy.wa.gov