GP West-Chlor/Alkali Feasibility Study

Public Meeting

March 15, 2018

The Cleanup Process

The Model Toxics Control Act (MTCA)
is Washington's environmental cleanup law.

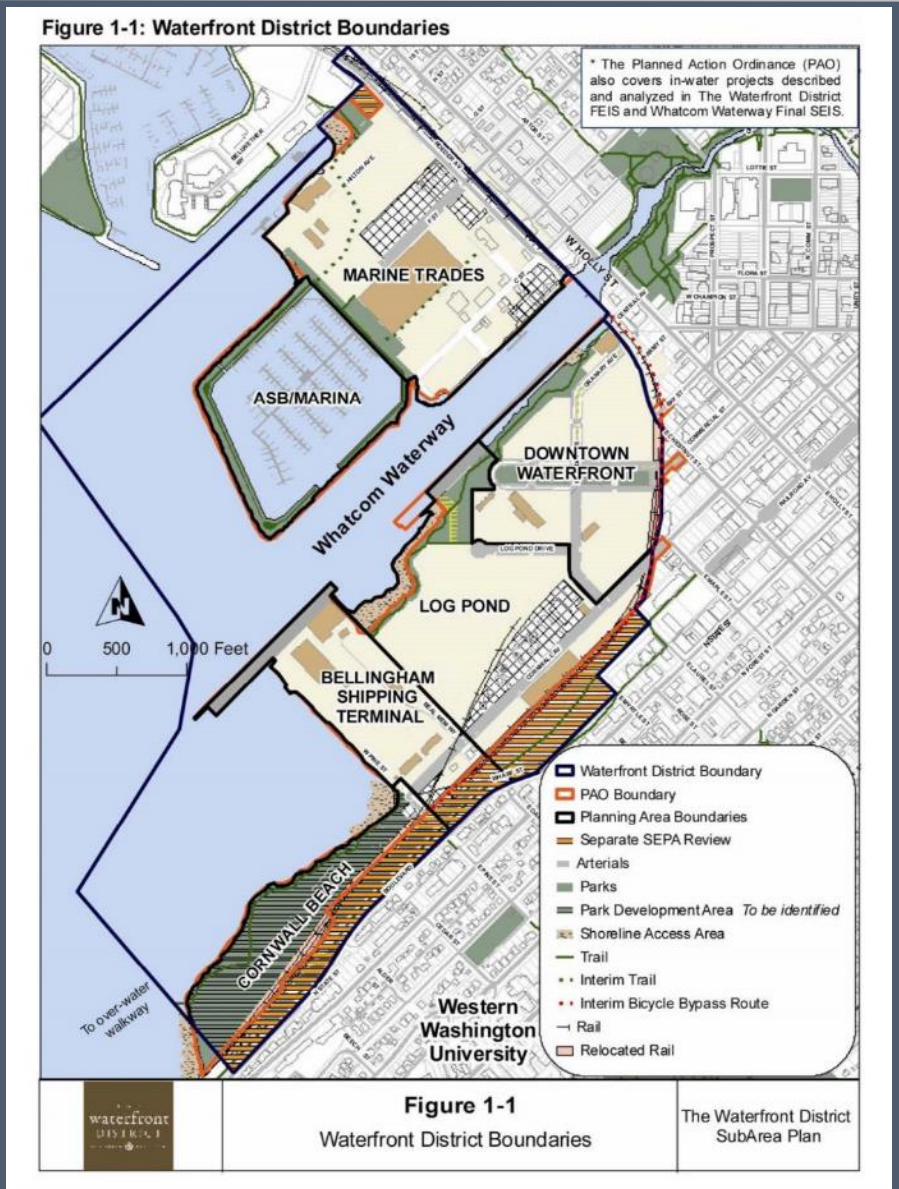
- MTCA directs the investigation and cleanup of sites that are contaminated by hazardous substances.
- It works to protect people's health and the environment, to preserve natural resources for the future, and to prevent the creation of future hazards due to improper disposal of toxic wastes into the state's lands and waters.
- Matching grant funding may be available for eligible parties.

GP West

Chlor-Alkali Area

Feasibility Study

Waterfront & GP West MTCA Site



Site Background

- GP West Site (74 acres):
  - 1926-2007: Pulp and Tissue Mill Area (38 acres)
  - 1965-1999: Chlor-Alkali Area/Chlorine plant (36 acres)
    - Made chlorine gas and sodium hydroxide (caustic) for use in pulp mill
    - Used mercury-cell electrolysis process
    - Electrolytic cell include large quantity of liquid mercury
- 2005: Port purchased GP West properties

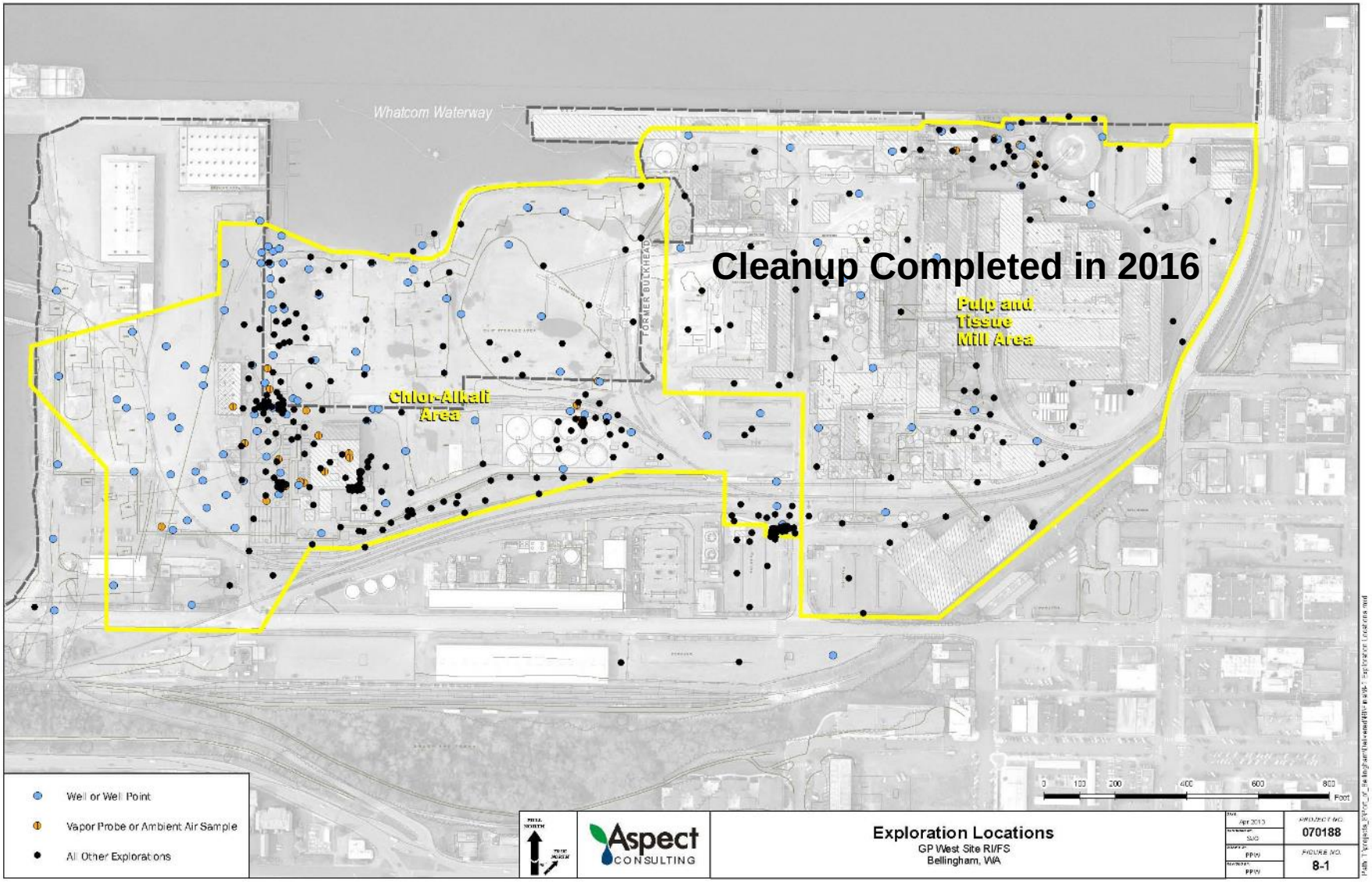
GP West Site, Chlor-Alkali Area facing northwest, 1969.

GP West Site, Chlor-Alkali Area facing southeast, June 2006.

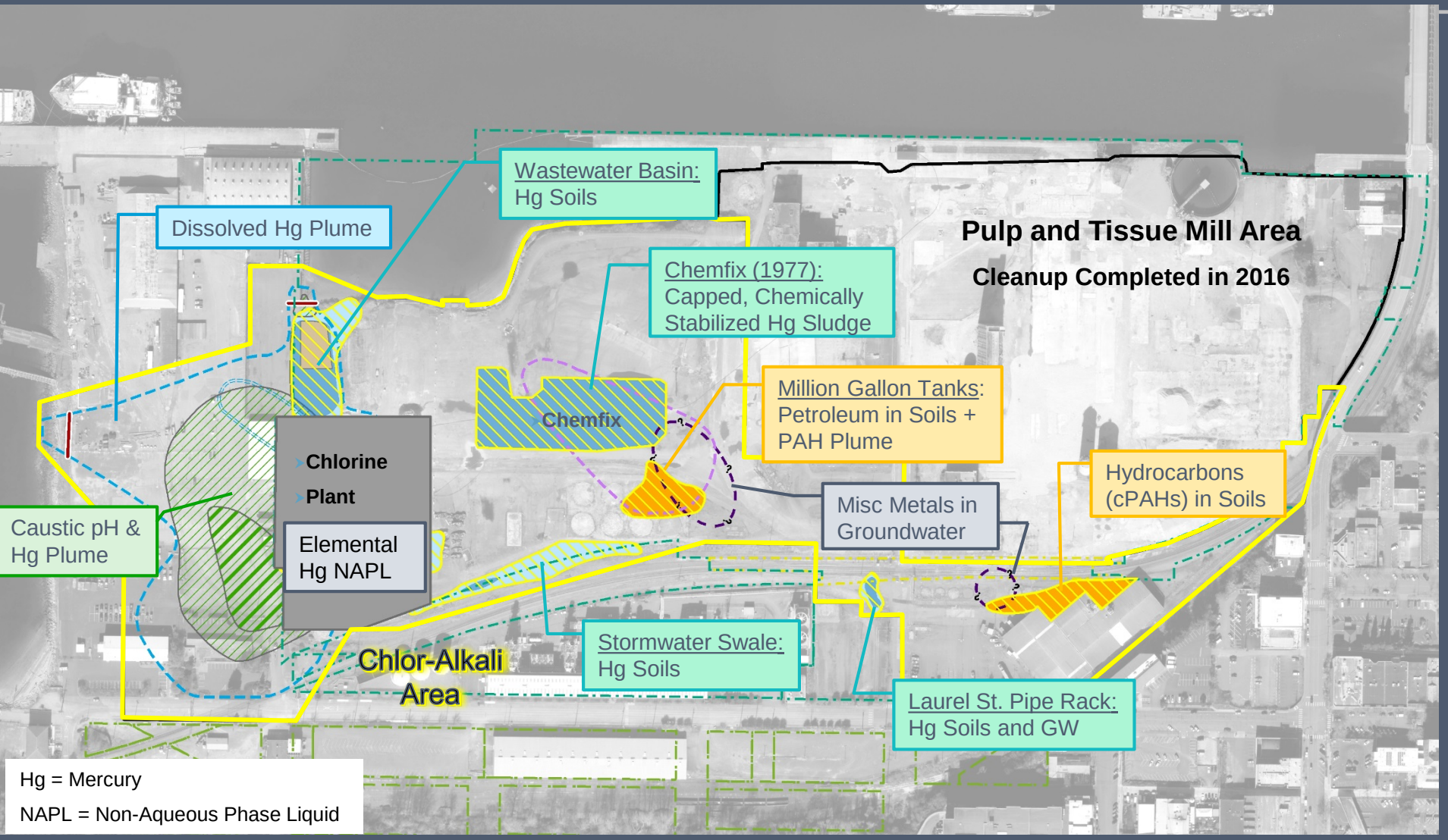
GP West Cleanup Status

- **August 2009:** Port-Ecology Agreed Order (AO) for Remedial Investigation/Feasibility Study
- **August 2011:** First Amendment to AO for Interim Actions
- **February 2012:** Bunker C Interim Action Completed
- **August 2013:**
  - Second Amendment to AO establishing two site areas: Pulp and Tissue Mill Area and Chlor-Alkali Area
  - Site-wide Remedial Investigation issued for public review and finalized
- **2014 (and 2017):** Chlor-Alkali Area Interim Actions Completed
- **December 2014:** Pulp and Tissue Mill Area Consent Decree for cleanup action
- **November 2016:** Cleanup complete for Pulp and Tissue Mill Area

GP West Remedial Investigation



FS Areas Of Concern



Hg = Mercury

NAPL = Non-Aqueous Phase Liquid

Eight Cleanup Alternatives

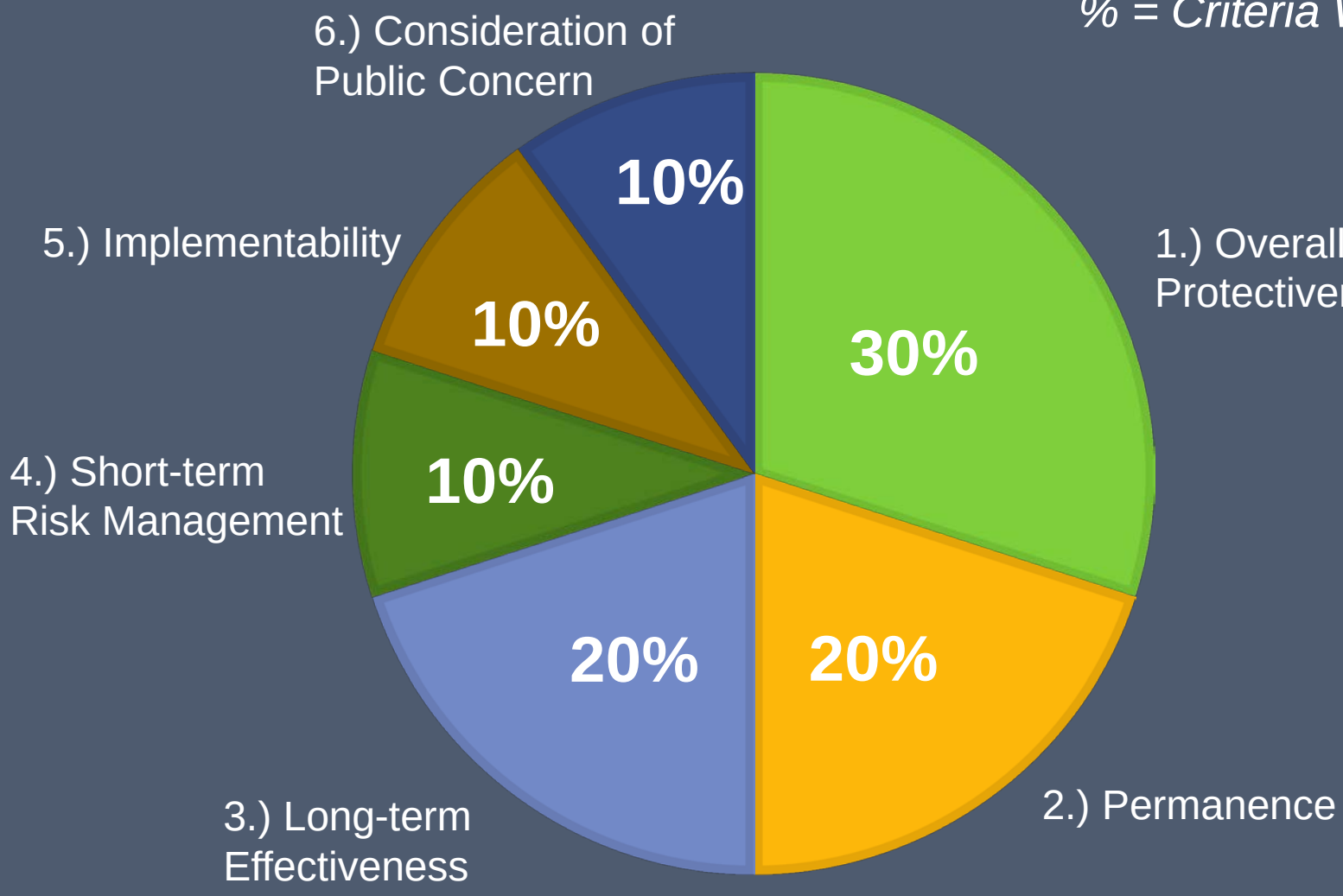
Common Elements included in each Remedial Alternative	• **Prior cleanup actions** • **Institutional controls** • **Groundwater Monitored Natural Attenuation (MNA)** • **Remove TPH-impacted soils at Cell Building** • **Remove Wastewater Basin soils with mercury > 300 ppm**

	Additional Remedial Alternative Components	**Remedial Alternative No. 1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	Estimated Cost ($ Million):	$12.2	$16.2	$22.8	$18.4	$24.3	$39.1	$63.8	$69.8
Chlorine Plant	***In situ* treatment*** w/o pilings removal + perimeter containment wall	X							
	In situ* treatment with full pilings removal		X		X	X			
	Full soil removal and off-site disposal			X			X	X	X
Other Areas	**Cap all soils** exceeding cleanup levels	X	X	X	X	X	X		
	Remove Mercury soils for Groundwater protection (mercury > 100 ppm)						X	X	X
	Remove all soils exceeding cleanup levels							X	X
	Neutralize Groundwater in "Caustic Core" (pH > 10)				X	X	X	X	X
	Neutralize Groundwater with 8.5 < pH < 10					X	X	X	X
	***In situ* treatment** of Mercury-impacted Groundwater outside pH > 8.5								X
	***In situ* treatment** of PAH-impacted Groundwater								X

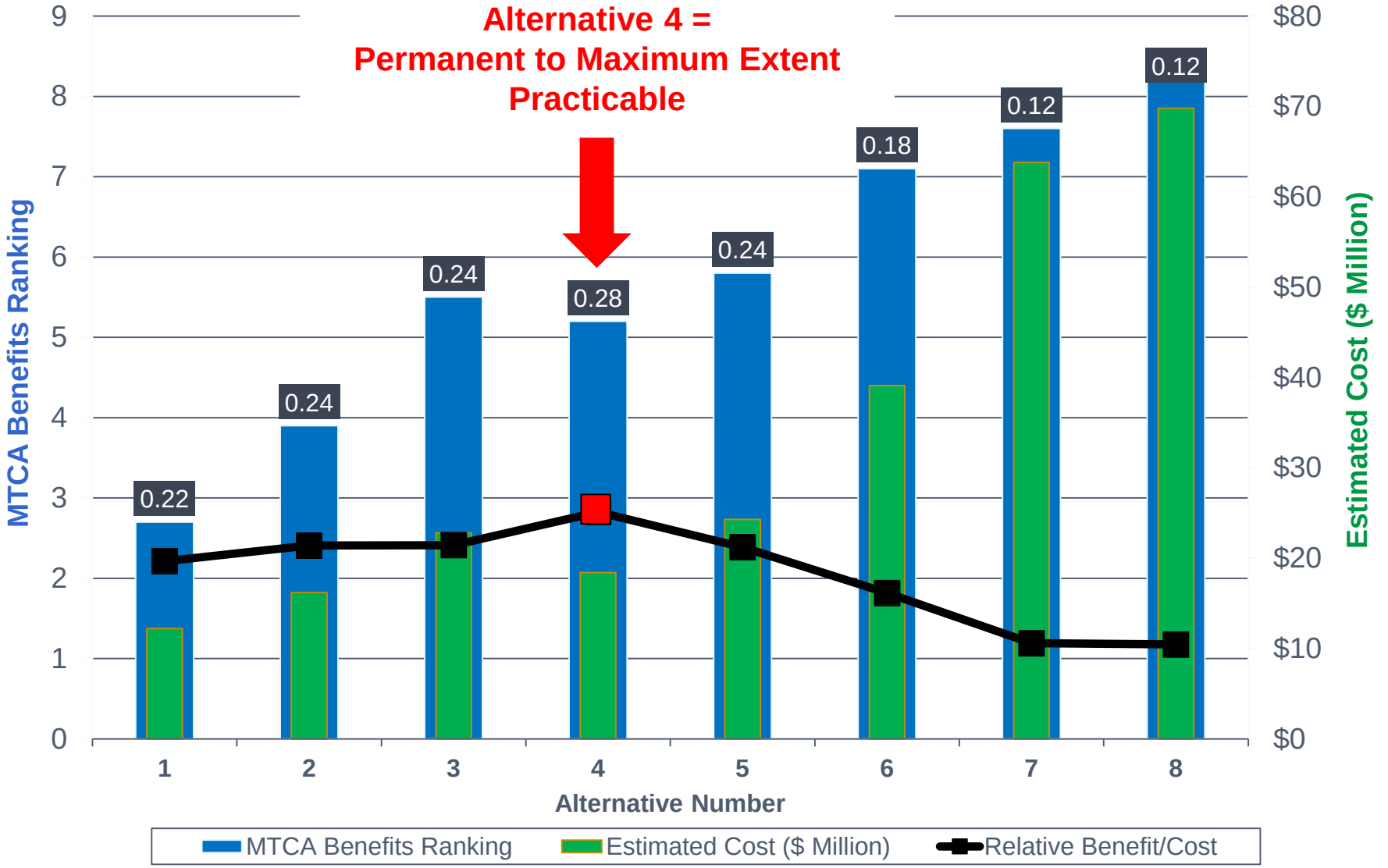
*: In Situ Treatment of Mercury NAPL = In Situ Stabilization/Solidification (ISS)

Criteria for Disproportionate Cost Analysis

% = Criteria Weighting

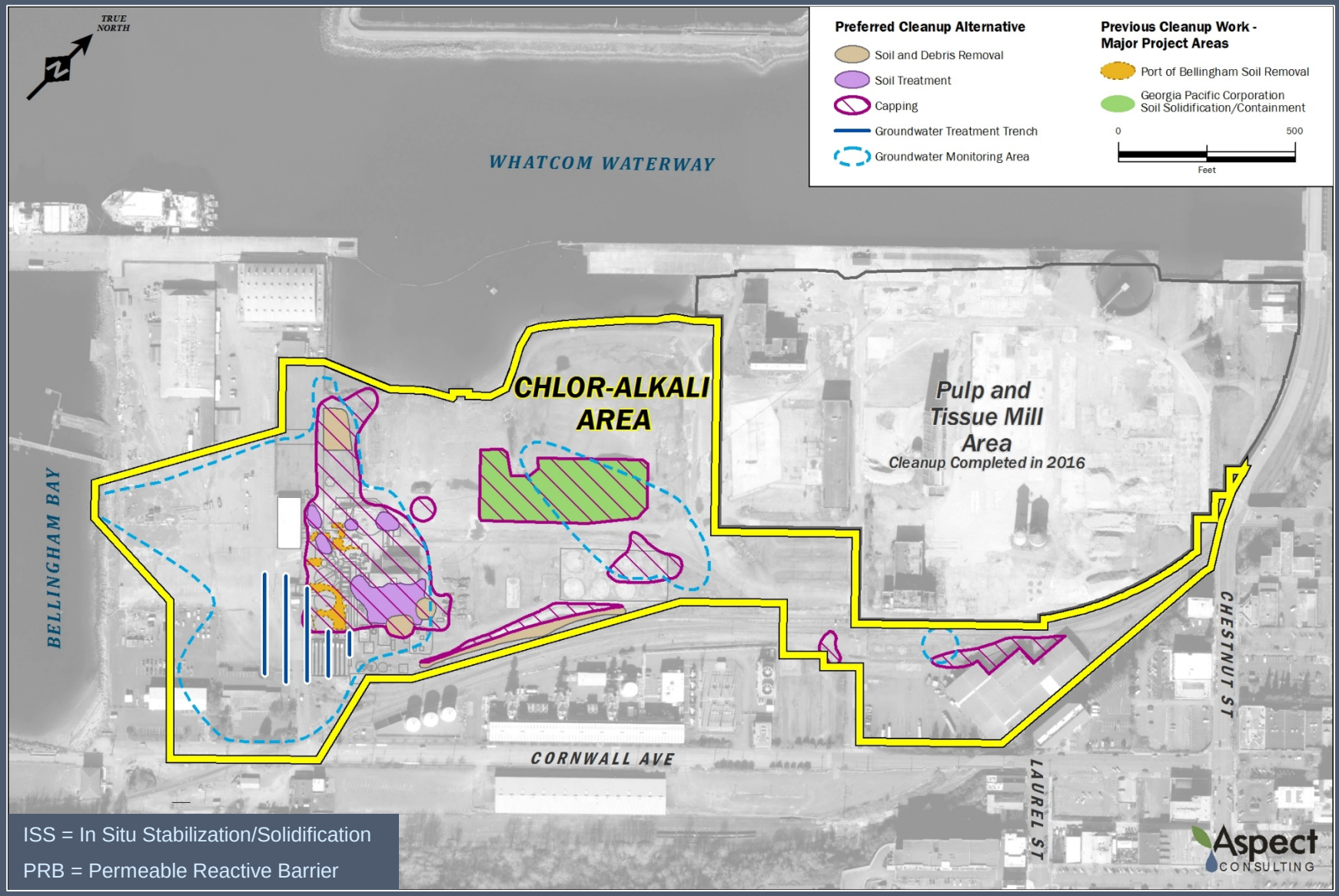


Disproportionate Cost Analysis



Proposed Cleanup Action -Alt. 4

$18.4M estimated cost



Next Steps

- **March 12 – April 10, 2018:** 30-Day Public Comment Period
- **Mid 2018:** Finalize the feasibility study and Ecology responds to comments
- **Late 2018:**
  - Ecology will select a cleanup action and issue this action and associated legal agreement for future public review
  - The legal agreement will require the Port, and possibly others, to design the cleanup action.

How to Comment

Comment Period: March 12 – April 10, 2018

1. **Online**
   - Bit.ly/Ecology-GPWest-Comments
2. **Use comment card on sign-in table**
3. **By Mail to:**
   - **Brian Sato – Site Manager**

     3190 160th Avenue SE

     Bellevue, WA 98008-5452
   - (425) 649-7265
   - Brian.Sato@ecy.wa.gov

DEPARTMENT OF ECOLOGY
State of Washington

Questions?