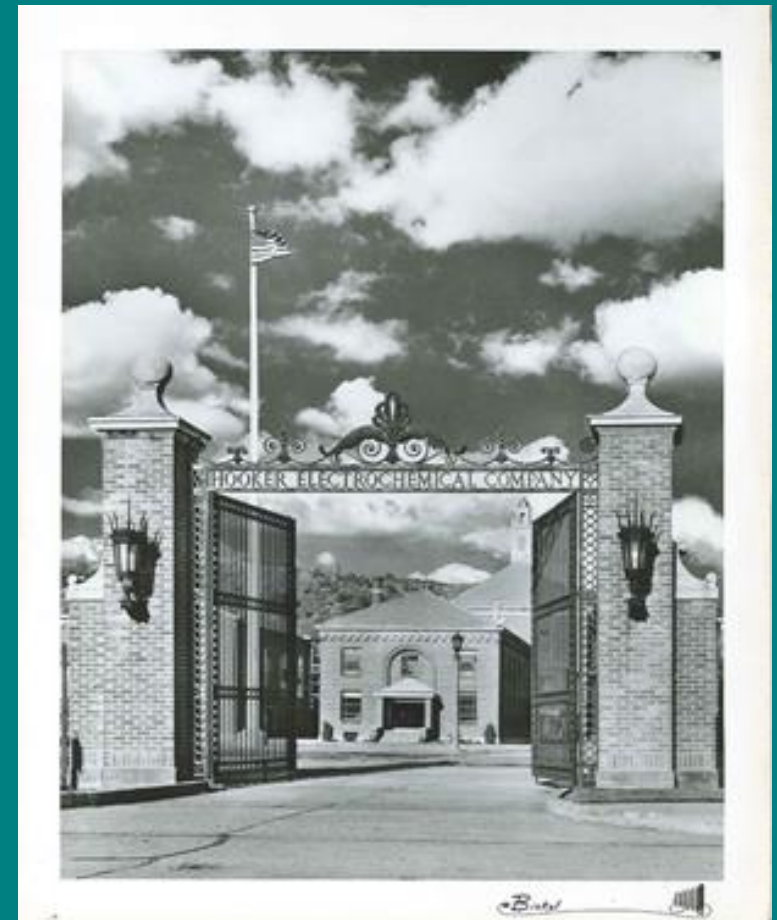


Occidental Chemical Inc. Formerly Known as Hooker Chemical

Field Work update, Remedy Selection,
and the Draft Cleanup Action Plan

Kerry Graber, Ecology Site Manager
Joel Massman, Keta Waters
Sheila Coughlan, Public Participation



Presentation Outline

- Project Overview
- Project update – 2020 to current
- Review the selected remedy
- Public Involvement for the Cleanup Action Plan







Hylebos Waterway



Blair Waterway

Commencement Bay

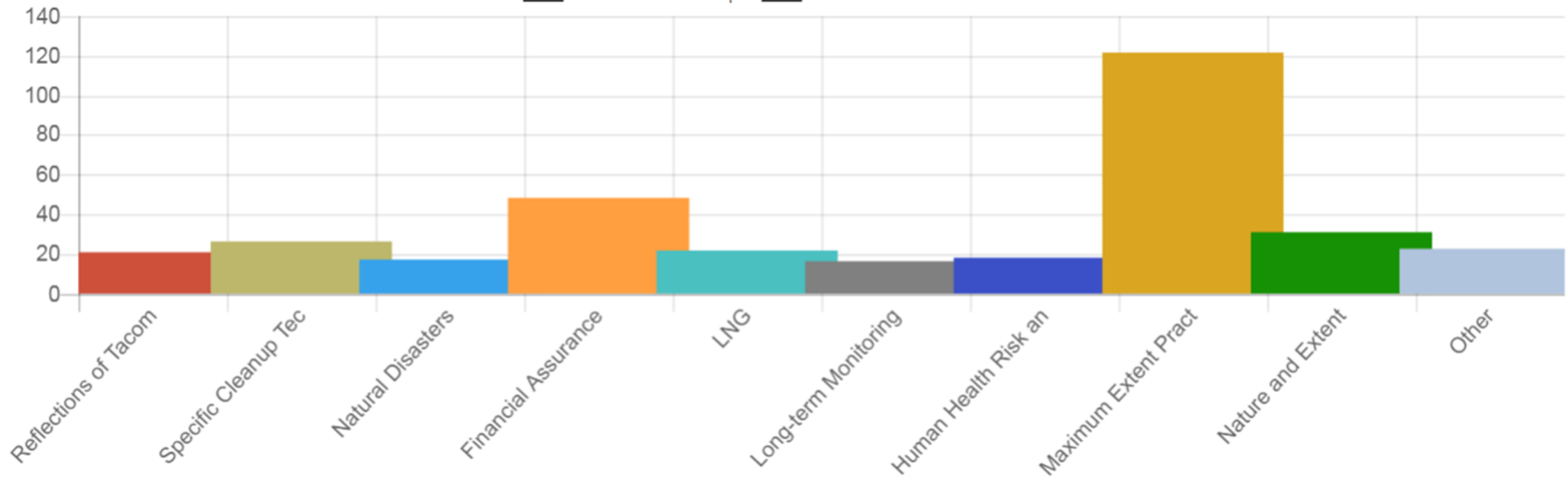
The red box shows the site of the former Occidental and Mariana Properties. The area of the site is about 33 acres.

Major Themes in Public Comments

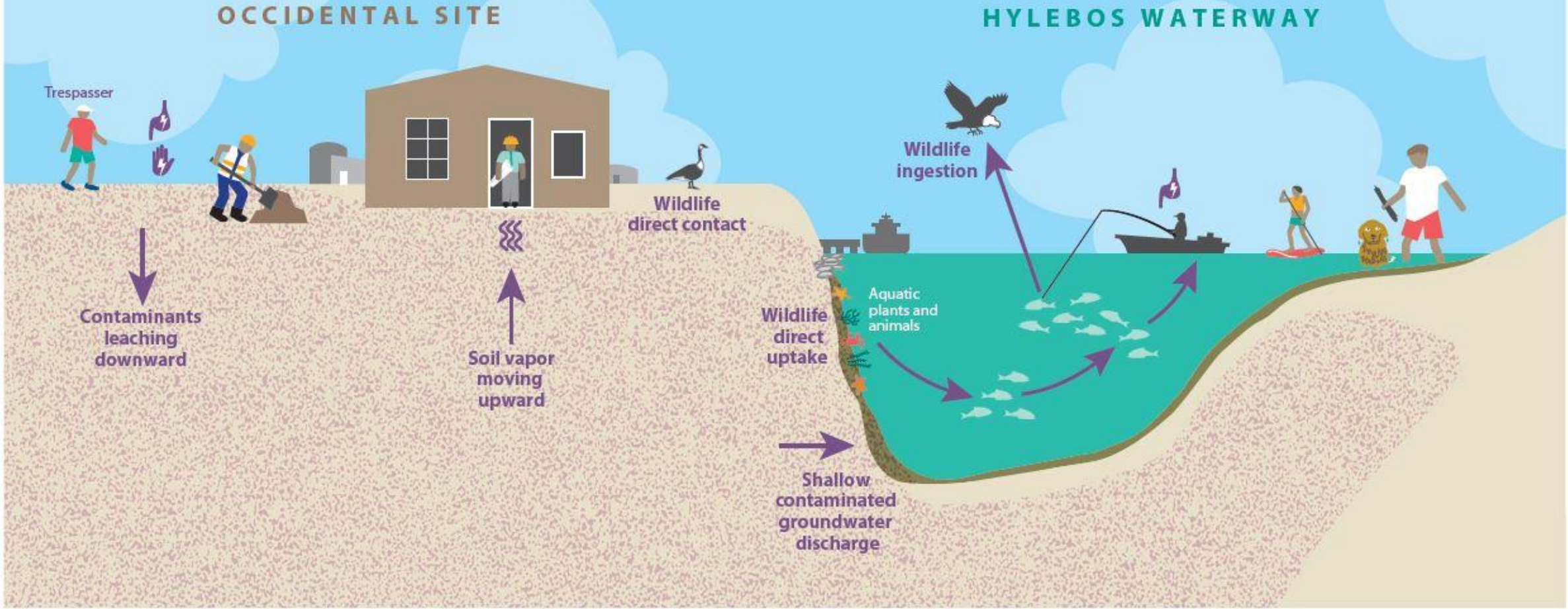
Comments

Top 10 ▼

155 submissions | 401 comments



Potential Exposure Pathways



Sediment

Contaminated Soil/
Sediments/Groundwater

Shallow
Sediment

Contaminant Migration

HUMAN HEALTH EXPOSURE PATHWAYS:

Ingestion

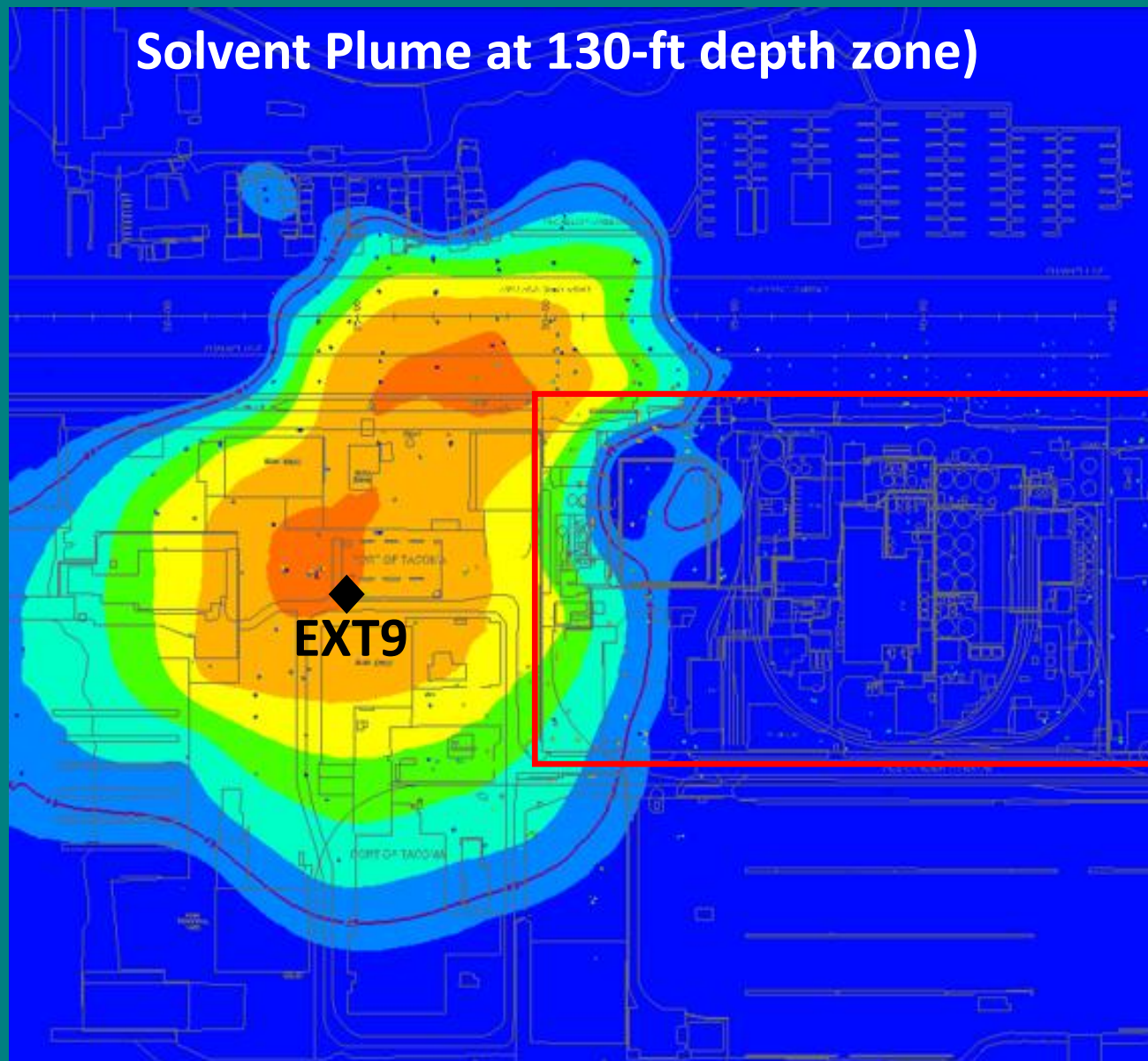
Direct Contact

Vapor Intrusion

Project Field Activities (2020-2021)

1. Conduct seasonal groundwater level monitoring (Sept. 2019 – Oct. 2020)
2. Install replacement groundwater wells (Feb. – Mar. 2020)
3. Install soil gas and sub-slab monitoring probes (Feb. – Mar. 2020; July 2021)
4. Perform long-term pumping tests at Well EXT-9 (Aug. 2020)
5. Conduct baseline groundwater monitoring (Oct. – Dec. 2020)
6. Conduct baseline soil gas monitoring (Dec. 2020 and July 2021)
7. Install and sample new groundwater wells on east side of Hylebos Waterway (Sept. 2021)

Solvent Plume at 130-ft depth zone)



Depth	Soil	Screen	pH	VOC
90	Sand		7.40	3
95	Sand			
100	Sand		7.26	12,000
105	Sand			
110	Sand		7.13	250,000
115	Sand			
120	Sand		7.14	122,000
125	Sand			
130	Sand		7.36	107,000
135	Sand			
140	Silt		7.32	135,000
145	Silt			
150	Silt		12.51	85,000
155	Silt			
160	Silt		11.68	77,000
165	Sand			
170	Sand		8.21	6,500
175	Sand			
180	Sand		8.71	3,000
185	Sand			

What can happen with high pH water

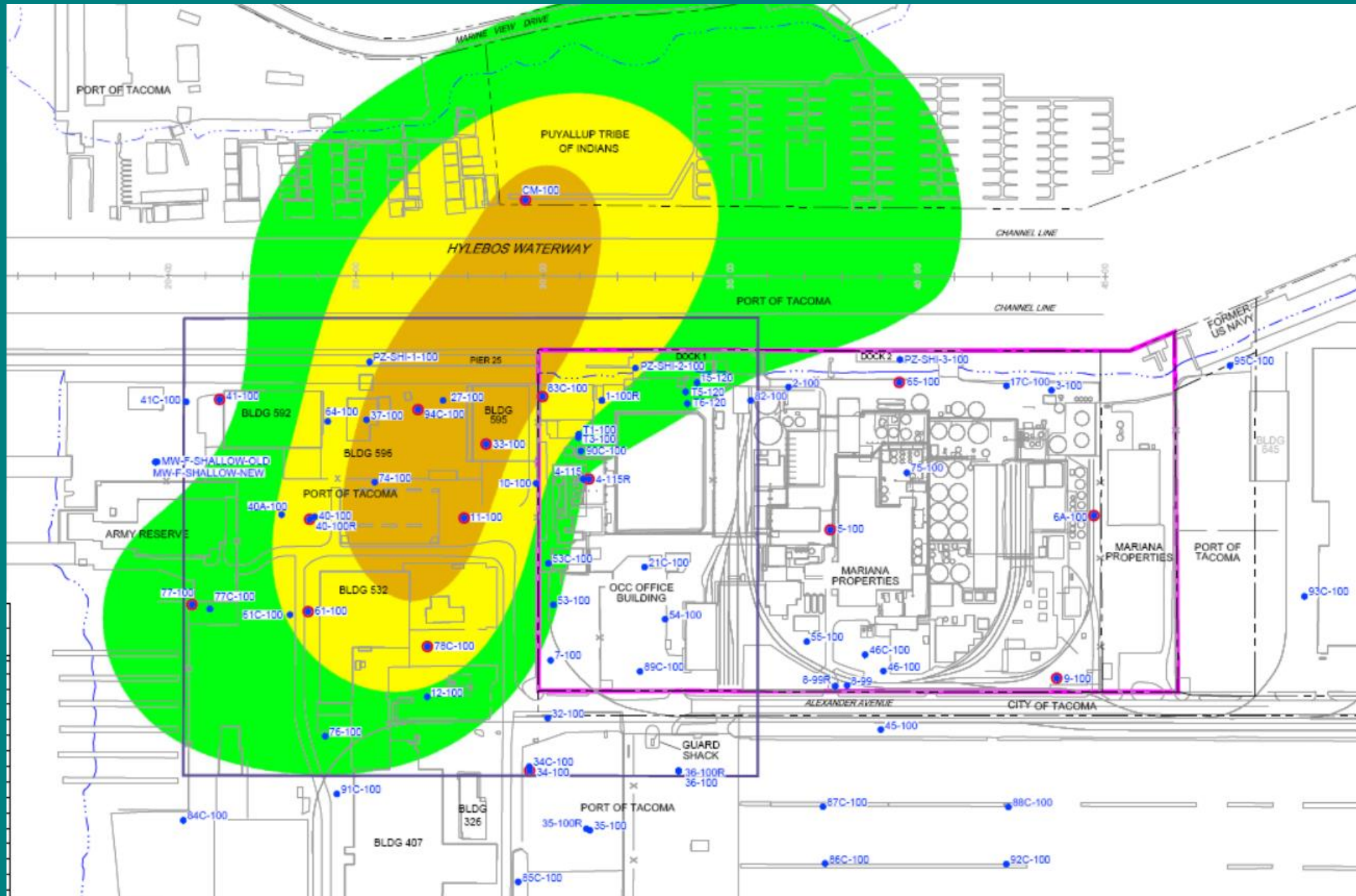


Selected a
subset of
the existing
wells for
baseline
monitoring.

73 wells.

69 sampled.

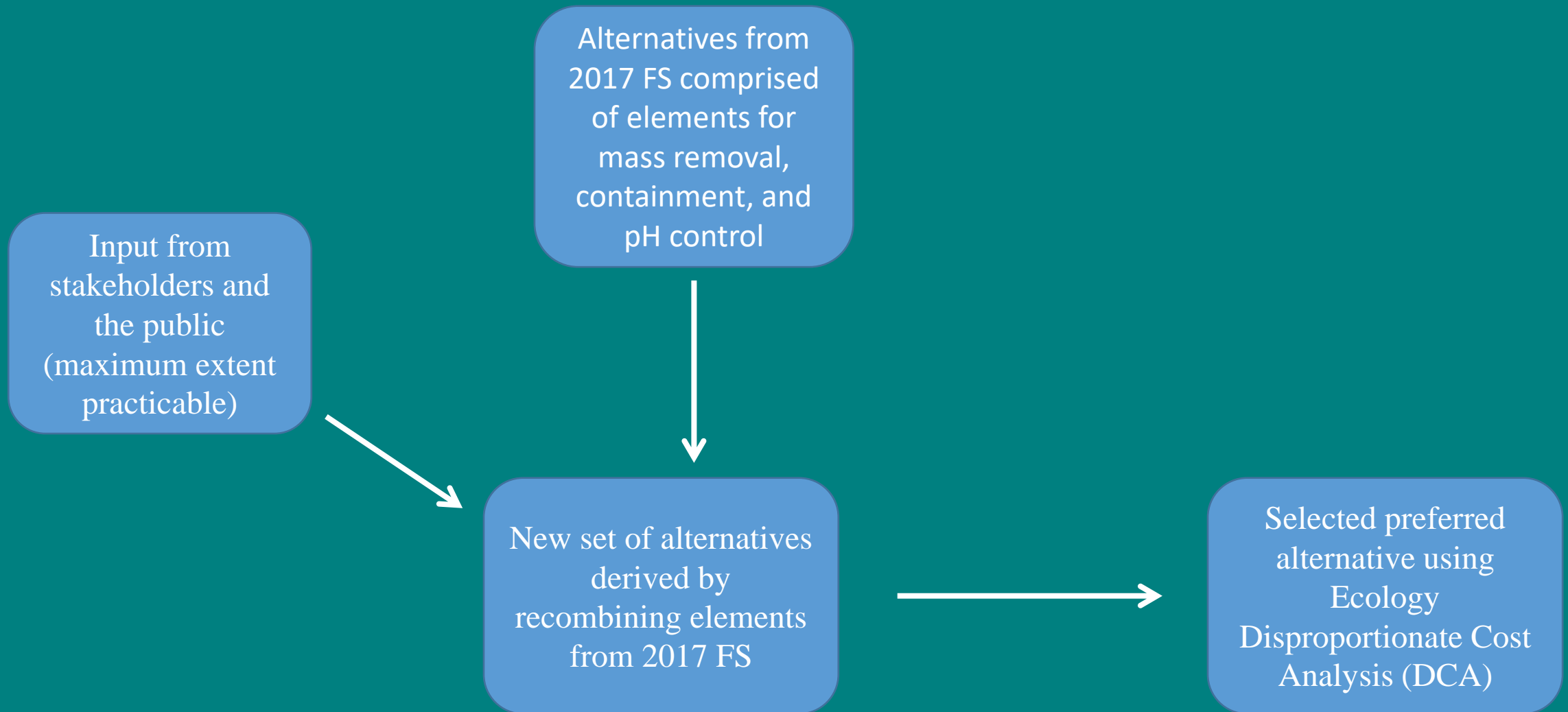
4 to be
constructed.



PCE, December 2020 and July 2021

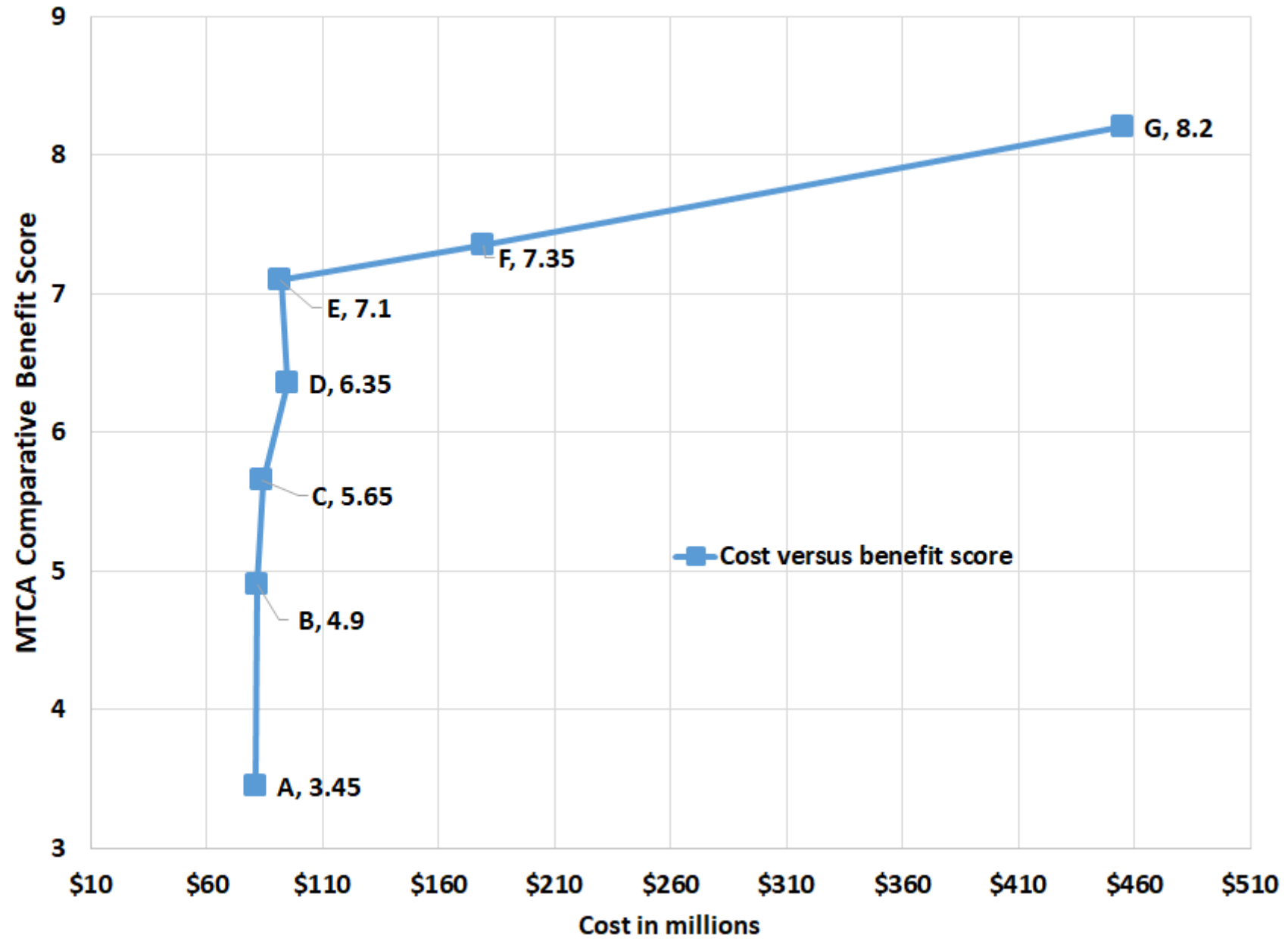


Review of the Remedy Selection Process



MTCA Comparative Benefit Scoring

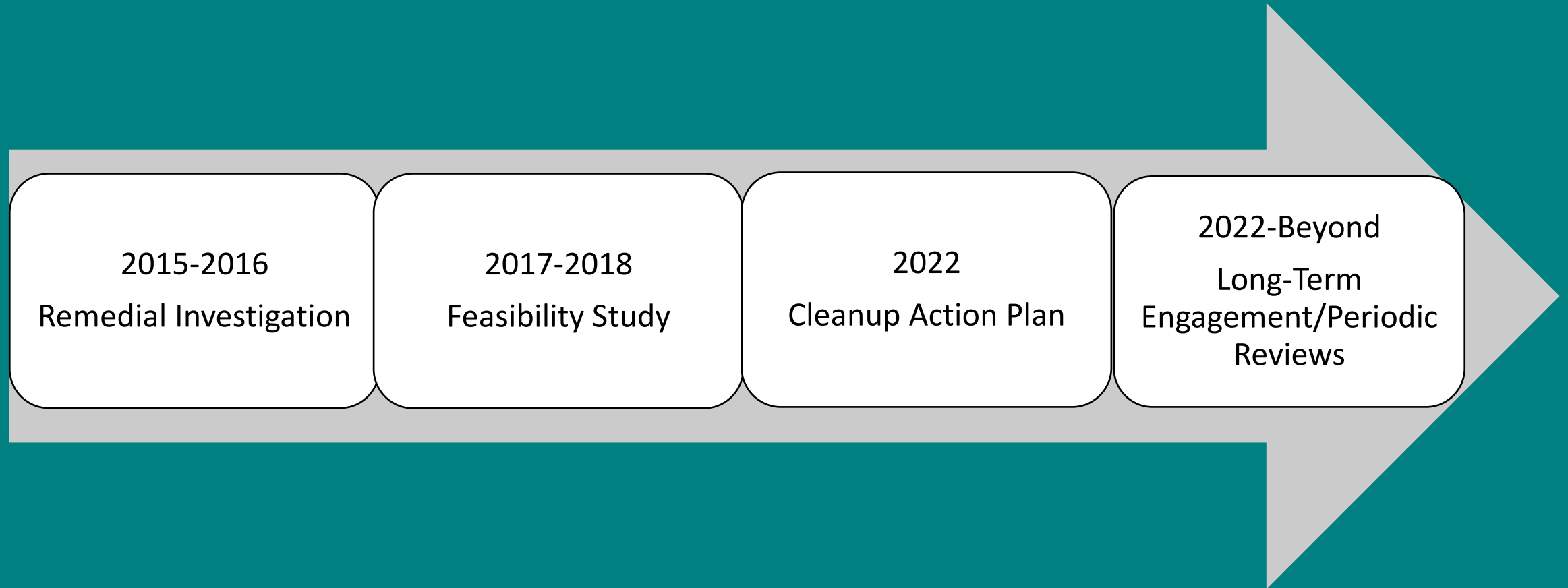
	Alternatives							
	G	F	E	D	C	B	A	Weight
Overall Protectiveness	9	7	7	6	5	4	2	25%
Permanence	9	8	7	6	5	4	3	20%
Effectiveness over the Long-Term	9	8	7	7	6	4	3	15%
Short-Term Risk Management	4	5	7	6	6	7	7	10%
Technical and Administrative Implementability	4	5	8	6	7	8	8	10%
Consideration of Public Concerns	10	9	7	7	6	5	2	20%
Weighted Score	8.20	7.35	7.10	6.35	5.65	4.90	3.45	
Cost in millions	\$455.2	\$179.7	\$92.1	\$94.9	\$84.2	\$81.9	\$81.1	



Elements Included in the Cleanup Action:

- Soil and soil vapor early action source treatment
- VOC source area mass reduction by strategic groundwater pumping (MSP)
- Ex-situ groundwater treatment, including a rebuilt treatment plant
- Vertical barrier wall adjacent to the Hylebos Waterway
- Physical direct contact exposure (PDCE) barrier
- Hydraulic containment with performance standards
- Compliance monitoring of the remedy, including impacts to porewater and sediments in the Hylebos and Commencement Bay
- Institutional Controls (ICs), e.g, covenants
- Periodic review (minimum of every 5 years)

Public Involvement Timeline

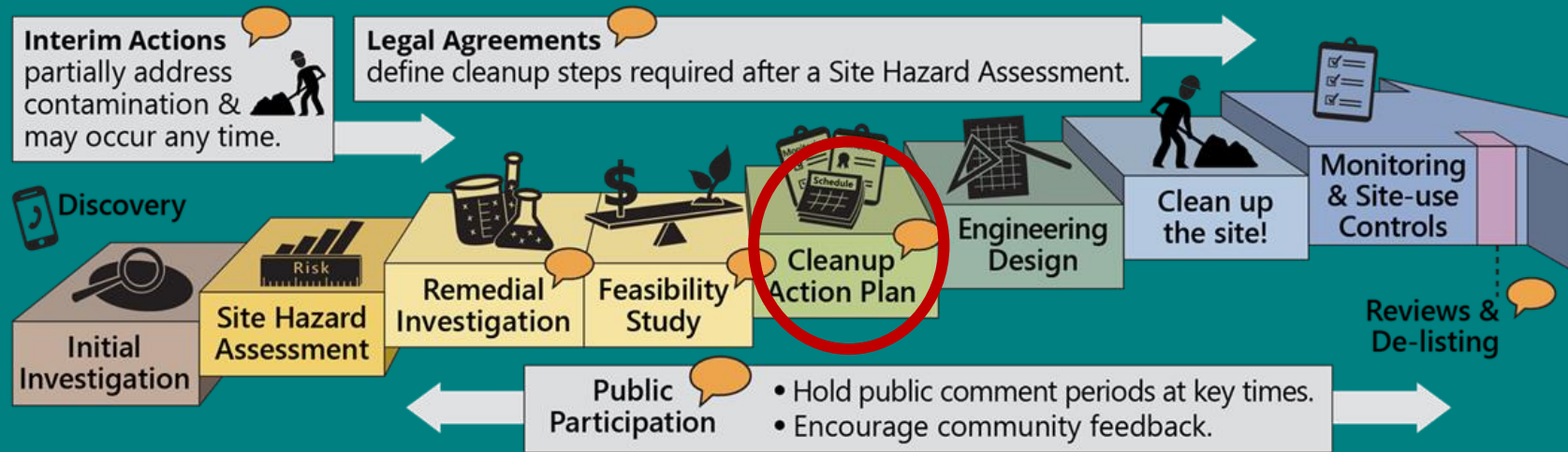


Draft Documents for Public Review

- Cleanup Action Plan
- New Agreed Order
- Public Participation Plan
- Technical Reports

Engage Over the Long-Term

- Videos
- Displays and signs
- Partners



Public Involvement

- Share information with the community
- Let the community know how they can share information with us