

Cleaning Up the Duwamish

The Superfund Feasibility Study

April 1, 2009

MWPAAC E&P Subcommittee



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

Lower Duwamish Waterway



- King County committed to clean up
- Water quality restored
- Sediment and habitat problems remain

Restoring the Duwamish

- Removed 70,000+ cubic yards of contaminated sediment
- Cleaned up 7 of the dirtiest acres of river bed
- Restored 25 acres of habitat at 5 sites
- Reduced discharges



Collaboration

Lower Duwamish
Waterway Group

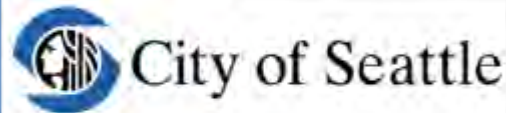


Roles and Responsibilities

Regulatory Agencies



Lower Duwamish Waterway Group



- Sampling
- Studies
- Plans
- Analyses

Key Milestones



Cleanup Goals

- Seafood Consumption



- Worms and Benthic Invertebrates



- Direct Contact with Contaminants



- Fish and Wildlife



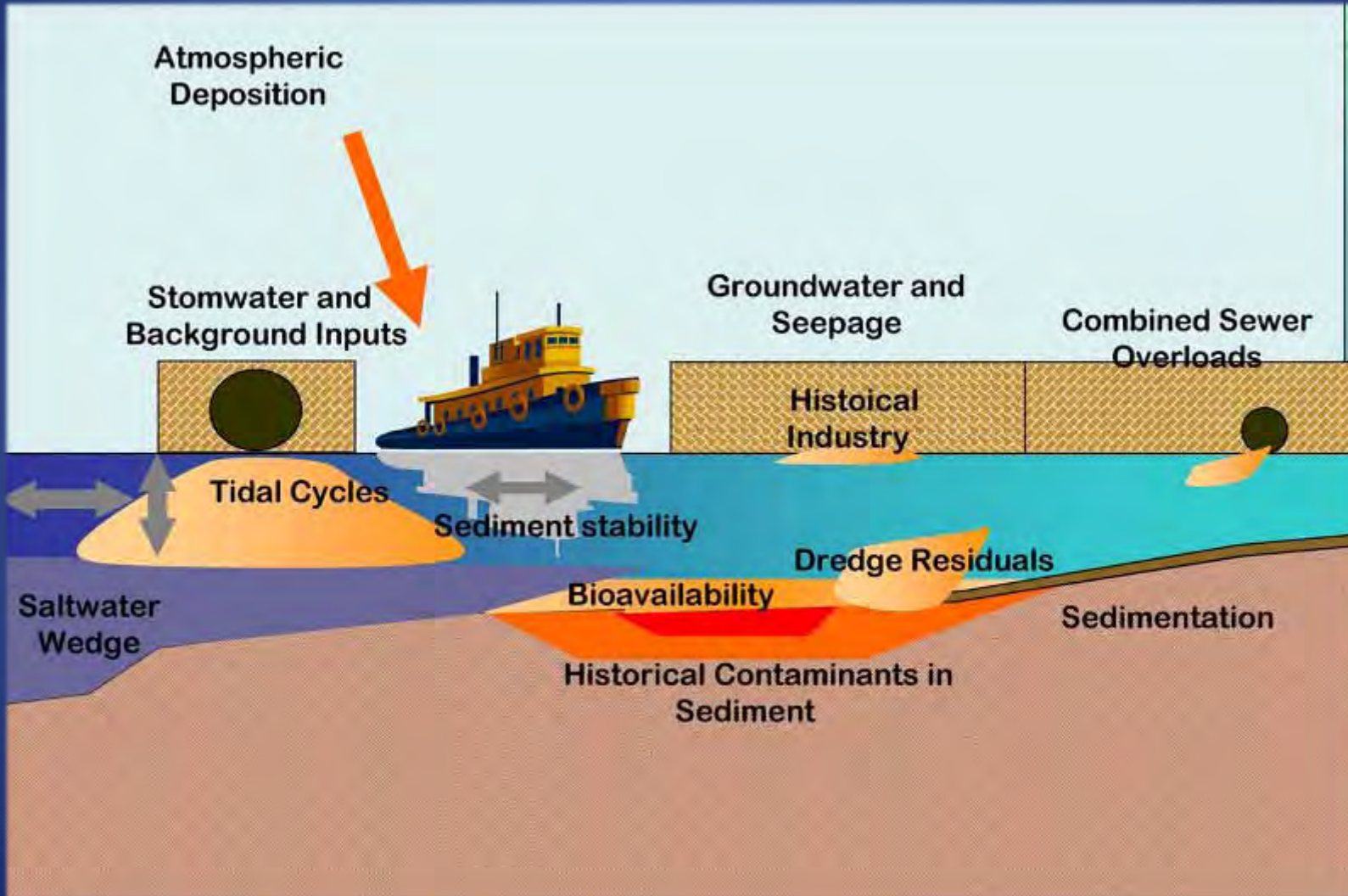
Cleanup goal is to reduce risk.

How will we go about It?

Where Is the Contamination?



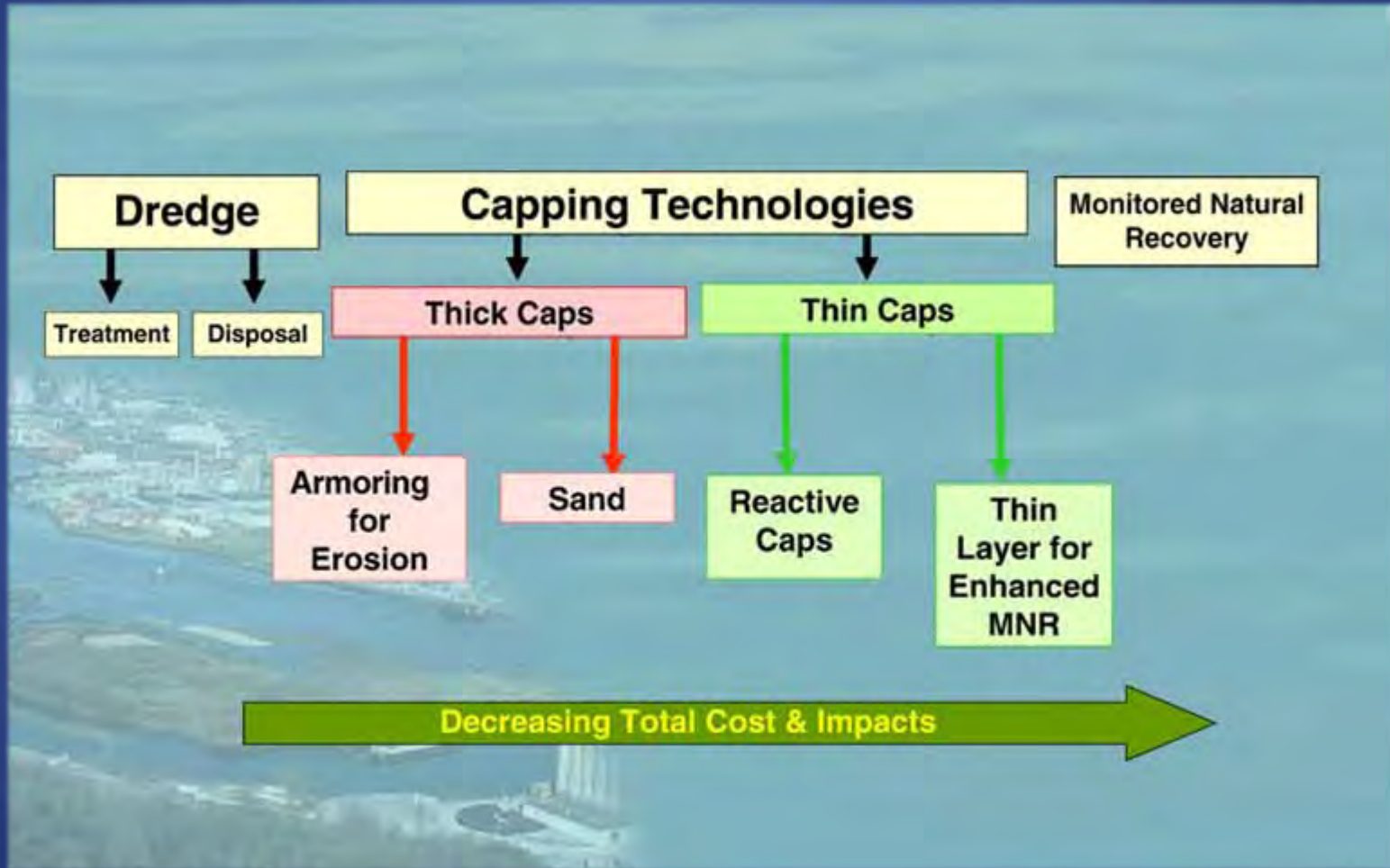
Contamination in the Duwamish








LDWG Cleanup Principles

- Must address the most contaminated areas in the first years of the cleanup to achieve the greatest risk reduction as soon as possible.
- Must be implemented in phased actions to allow for adjustments based on further sediment quality and risks assessment and the effective of source control measures.
- Scope and combined actions must minimize cleanup's environmental impacts while achieving long-term protection.
- Must meet all cleanup goals as cost-effectively as possible.
- Reflect lessons from other cleanups, especially those highlighted by independent, scientific peer reviews.

Multiple Technologies Available



Technologies Combine Into Five Options

Early Actions Only	Hot Spot Removal	Containment Focus	Removal Focus	Maximum Removal
 <p>Acres Actively Managed : 34</p> <p>Estimated Cost: \$50 million</p> <p>Years to Complete: 5</p>	 <p>Acres Actively Managed : 193</p> <p>Estimated Cost: \$210 million</p> <p>Years to Complete: 9</p>	 <p>Acres Actively Managed: 193</p> <p>Estimated Cost: \$240 million</p> <p>Years to Complete: 9</p>	 <p>Acres Actively Managed: 193</p> <p>Estimated Cost: \$400 million</p> <p>Years to Complete: 15</p>	 <p>Acres Actively Managed: 315</p> <p>Estimated Cost: \$1.2 billion</p> <p>Years to Complete: 41</p>



Early Action & Dredging



Containment



Monitoring and Natural Recovery



Verification Monitoring

Alternative Selection Criteria

Protection of human health and the environment
Consistent with all other agency standards

**Effective
Long
Term**

**Construction
Time &
Impacts**

**Includes
Treatment**

**Ability
to Get
It Done**

Cost

Acceptance from community, state and tribal nations

Key Decisions

- Is it worth spending more money and suffering higher short-term risk to permanently remove more contamination from the waterway?
- Is higher uncertainty acceptable if it results in potential cost savings to reach the same level of protection?
- How do we balance the wish to remediate sediment as soon as possible with remaining uncertainties regarding source control?
- How do we balance these cleanup costs with broader funding need to clean up Puget Sound?

Next Steps

- Draft FS posted April 24
- Technical presentation of alternatives to E&P on May 6
- Presentation to full MWPAAC on May 26
- U.S.E.P.A accepting comments through July
- MWPAAC and its members urged to provide comment