REGULATORY CONSTRAINTS: CLEANUP OF A WORKING WATERFRONT

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Zidell Waterfront Property

- CASE STUDY: Collaboration of project design criteria and regulatory constraints results in a successful project

- Agenda
  - Site Setting and History
  - Cleanup Requirements
  - Regulatory Considerations
  - Final Design
  - Construction
Contaminants of Concern
- PCB
- PAH
- Metals and Tributyltin
- Asbestos
ROD Design - Concept

[Diagram showing ROD cross section with labels for Right-of-Way, 2 Foot Soil Cap, Hot Spot Excavation, Existing Ground Surface, 3:1 Slope, 1 Foot Rock Armor, Hot Spot Excavation, 2 Foot Sand Cap, Existing Armor, etc.]
Regulatory Design Considerations

- Department of State Lands
- Corps Section 404 (401 & ESA)
- City of Portland
  - Flood Insurance Program
  - Greenway
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Downstream Reach

Figure A10' Section 6'
Downstream Reach
ZRZ Realty Company
Portland, Oregon

- Existing Grade
- Proposed General Fill / Soil Cap
- Proposed Sand (Minimum Thickness is 2 Feet for Standard Cap and 10 Inches for Thin Cap)
- Alluvium
- 2.5 Inch Minus Rounded Gravel
- Type A Rock Armor
- Operationally Impacted Existing Fill (Silts, Sands, Gravel, and/or Debris)
- Seasonally Variable River Level (OLW to OHW)
- Minimum River Level (Below OLW)

Note: Vegetation illustrated at mature size approximately 30 years past planting.
Downstream Reach

- Grasses and Herbaceous Vegetation
- Trees, Shrubs, Grasses and Herbaceous Vegetation
- Riparian Trees, Shrubs, Grasses and Herbaceous Vegetation

- Top of Proposed Rock Armor El. = 18 ft
- Slope Transition (3:1 to 5:1) El. = 10 ft
- Existing Grade
Slipway
Contaminants of Concern
• Tributyltin
• Metals

OBJECTIVES
• Cap contaminants
• Maintain barge construction operations
• Compatible with future public/residential uses
Bank Cut
Hotspot Removal
Low Profile Cap
Active Cap in Slipway

A 2-foot cap would interfere with operations. RCM proposed at 1cm thick including:

- Mineral Apatite for Metals
- Activated Carbon for Organics

Active Cap 11/29/2011
Conclusion

- Each individual design element addresses multiple factors
  - Cleanup
  - Fluvial Environment
  - Navigation & Site Operations
  - Habitat
  - Permitting
  - Future Redevelopment
Questions?

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Bridge Reach

Note: At the south end (upstream) of the reach the in water slope is 3.5:1V and transitions to 5:1V at the north end (downstream) of the reach.