



Definitions and Project Evaluations

(Tab A)

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4/20/2005

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Seattle, Washington 2005*



Training Objectives

- Basic definitions for Environmental Dredging
- Stages of project evaluation
- Roles and responsibilities
- Sequencing of project evaluation components

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Workshop Audience – PMs What, When, Why Evaluate



- Feasibility Study
 - Alternatives Evaluation - Must consider effectiveness, implementability, cost
 - Evaluations and cost estimates can be at the conceptual level
 - PM must conduct or approve FS/ develop PRAP and ROD
- Remedial Design – for Selected Alternative
 - Complete and detailed evaluations for selected alternative
 - Plans and specifications
 - PM must finalize/approve design and cost estimates
- Implementation
 - Contractor usually makes final selection of equipment, etc.
 - Operations plans, monitoring plans, etc.
 - PM must approve

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EPA Environmental Dredging Workshop



- Objective - To provide a basic understanding of Environmental Dredging equipment and related processes and the tools and techniques for evaluation of an Environmental Dredging project.
- This is the FIRST such workshop developed for EPA/USACE Project Managers

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Workshop Outline

- Agenda and Timing –
- Left much time for DIALOG
- Notebook contains slides and handout materials

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Handouts

- ED Flowchart
- Table 1 - ED Equipment Capabilities and Equipment Selection Factors
- Table 2 - ED Field Data Summary Table

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Environmental Dredging

A proposed remedy approach for major U.S. Projects, e.g.:



Hudson River, NY
2.65 M cy; \$460M



Fox River, WI

7.25 M cy; \$258M

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Environmental Dredging Objectives

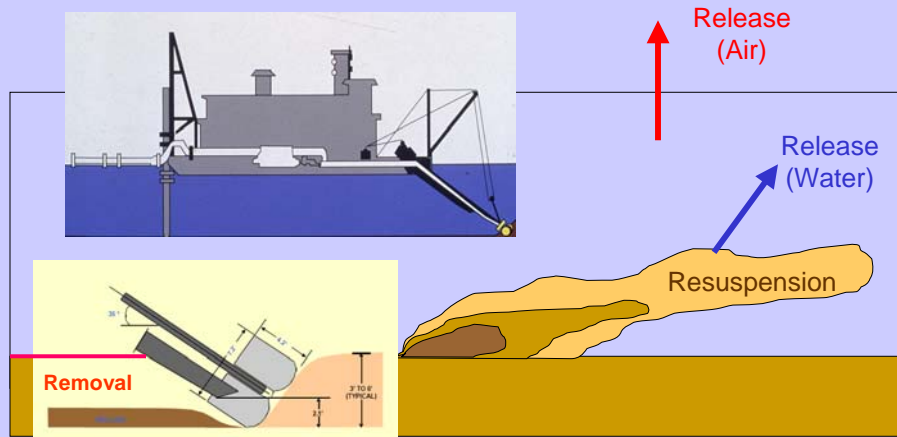
- Dredge with sufficient accuracy such that contaminated sediments are removed and cleanup goals are met without excessive removal of clean sediment;
- Dredge the sediments in a reasonable period of time and in a condition compatible with subsequent transport for treatment or disposal;
- Minimize and/or control resuspension of contaminated sediments, downstream transport of resuspended sediments, and releases of COCs to water and air; and,
- Dredge the sediments such that generation of residual sediment is minimized or controlled.

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Conceptual Illustration of Environmental Dredging and Processes



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Navigation vs Environmental Dredging

- Navigation
 - Economy
 - Effectiveness
 - Environmental Impact
- Remediation
 - Environmental Impact
 - Effectiveness
 - Economy



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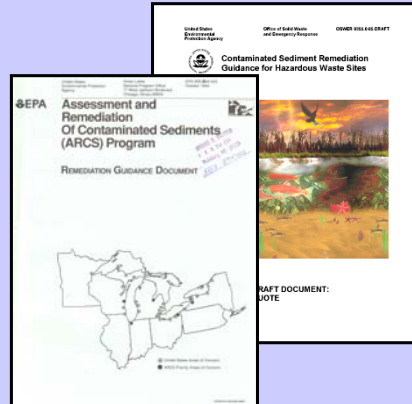


Environmental Dredging –

General Guidance



- ARCS Remediation Guidance Document
- EPA Superfund Sediment Guidance
- Much published info, but No Detailed Comprehensive Guidance



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Environmental Dredging

Major Considerations



- Environmental Dredging Processes
 - Removal
 - Resuspension
 - Release
 - Residual
- Remedial Action Objectives, Goals and Standards
- Equipment Evaluation and Selection

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Environmental Dredging Major Considerations



- Operational Approaches, Sequencing, Management Units
- Pilot Studies
- Contracting Considerations
- Monitoring

These considerations are interrelated.

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ED Design/Evaluation Process



- ED evaluations are complex
- ED is an “operation” but it must be “designed”
- Efficient sequence needed (see Flowchart Handout)
- Spans FS and RD phases
- Strong interdependence among steps
- Multiple options evaluated
- Iterative process



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Major Steps in ED Design

- Define ED Objectives
- Initial Evaluations
- Site/ Sediment Characterization
- Removal Requirements
- Performance Standards
- Select Equipment for Evaluation
- Production and Duration
- Resuspension
- Release
- Residual
- Control Measures
- Operations Plan
- Monitoring and Management Plan
- Cost Estimates
- Finalize Alternatives and Implement

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Technical Guidance for Environmental Dredging

- EPA/ USACE Guidance
- Environmental Dredging Processes
 - Removal
 - Resuspension
 - Release
 - Residual
- Removal Objectives and Targets
- Equipment Evaluation and Selection
- Operational Techniques, Sequencing, Management Units
- Pilot Studies
- Contracting Considerations
- Monitoring



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QUESTIONS?



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