Definitions and Project Evaluations

(Tab A)

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Training Objectives

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

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
Workshop Outline

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

Handouts

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

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.
Conceptual Illustration of Environmental Dredging and Processes

Navigation vs Environmental Dredging

- Navigation
  - Economy
  - Effectiveness
  - Environmental Impact

- Remediation
  - Environmental Impact
  - Effectiveness
  - Economy
Environmental Dredging – General Guidance

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

4/20/2005  Environmental Dredging Workshop
Seattle, Washington 2005

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.

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
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

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
QUESTIONS?