

Environmental Projects: Anticipating Change and Providing Effective Response

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Remediation Conference

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Change Is Inevitable

- Difficult to identify extent of unknowns before mobilization
- Contract type will drive approach to change
- Funding impacts ability to handle change
- Maximize progress with limited funding
 - Get the most bang for the buck
 - Anticipate and plan for change to avoid lost time and potential setbacks

Identify Key Project Parameters

- A: Identify customer expectations
- B: Identify stakeholder expectations
- C: Identify project risks and alternatives
- D: Utilize daily project cost, productivity, and forecasting system
- E: Develop system for identifying and implementing value-added approaches quickly

USACE/EPA at New Bedford Harbor (NBH) Superfund Site

- Cleanup 880,000 cy of PCB- and metals-contaminated sediments and debris
 - Dredging
 - Desanding
 - Dewatering
 - Wastewater treatment
 - Transportation & Disposal



USACE at Mt. Edgecumbe FUDS

- Interim removal action of free product and hazardous and non-hazardous contaminated soils at former Sitka Naval Operating Base
- Multiple stakeholders:
 - USACE (FUDS)
 - Alaska DEC (regulator)
 - Multiple landowners
 - AK-DOT (right-of-way)
- Adjacent AK-DOT project eliminated site access from existing roadway



A: Identify Customer Expectations

- Worker and Public safety is an imperative
- Quality, cost, and schedule are always of utmost importance, but what matters most?
- Questions to ask:
 - What issues will keep you up at night?
 - What are your critical needs?
 - What defines success?
 - What are the impediments to success?

B: Identify Stakeholder Expectations

- What are the Stakeholders issues
- How do the Stakeholders participate in the project
- What defines success for the Stakeholders
- What defines failure for the Stakeholders
- Stakeholder trust helps ensure a successful project and minimizes impacts from change

C: Identify Project Risks & Alternatives

- Identify risks and potential change drivers
 - Risks to schedule
 - Risks to cost
 - Risks to meeting cleanup goals
 - Personnel safety risks
 - Environmental risks
 - Risks to project quality
 - Risks to customer satisfaction
 - Risks to stakeholder satisfaction
 - Risks to the contractor

Rate Potential Changes

- For each risk identified:
 - Use weightings to rate severity of impact
- For example, for impact severity:
 - 0 = no impact
 - 1 = minor impact
 - 2 = moderate impact
 - 3 = major (severe) impact
- Eliminate any risk that receives a “0” rating in either impact severity or probability of occurrence

Rank Potential Changes

- Using threshold appropriate to the project, develop mitigation plan(s) for each remaining risk
- Include all major and moderate impact risks
 - For example, significant risks to human health should be addressed even if low probability
- For all major impact/high probability risks, consider alternate approach or fully flesh-out multi-part or multi-option mitigation plans
- Develop Decision Matrix based on project cost drivers and completion criteria

Example: USACE/EPA at New Bedford Harbor Superfund Site

- High probability/severe impact risks identified before mobilization
 - Sub-tidal area always underwater, restricting productivity; can only dredge in inter-tidal area when tides allow
 - With CSX monopoly on rail spur, material to be shipped off-site could backup
- Mitigation plans developed
 - Planned work assuming low production in inter-tidal area and identified multiple work areas so that there was always a “productive” area available to field crew and equipment
 - Had trailers available on demand so that we could immediately switch to trucking when rail unavailable

Example: USACE at Mt. Edgecumbe FUDS

- High probability/severe impact risks identified before mobilization
 - Heavy rains and activities from adjacent AK-DOT project could impact USACE project site
 - Limited options for on-site soil treatment
- Mitigation plans developed
 - Developed comprehensive site drainage system, keeping excavation area clear even when AK-DOT broke sewer lines
 - Solicited bids for soil treatment but let subs bid other disposition options; off-site T&D option reduced project costs and risks

D. Use a Daily Project Cost/Productivity Measurement and Forecasting System

- NBH: To ensure maximum work was accomplished with EPA FY funding:
 - Ensured demobilization/winterization budget retained
 - Tracked/forecast productivity and costs daily to pinpoint correct demobilization date



E. Use a System for Identifying and Implementing Value-Added Improvements

- Mt. Edgecumbe: Value-added improvements (and dollars saved) include:
 - Use of trail and adjacent property (\$419K)
 - Two-lane waste-bin tarping (\$88K)
 - Off-site T&D (\$78K)
 - Recycling recovered product from excavation to power equipment (\$15K)
 - Regulatory approval to terminate soil excavation at top of groundwater table (\$125K)

