



DOER Operations Technologies Focus Area

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Purpose

- **Situation**: The USACE dredging community of practice is being required to change the way it does business in order to address challenges posed by present and projected fiscal and manpower resources, the rising cost of dredging, and increasingly restrictive environmental standards.
- **Barriers**: Lack of technologies to support our adaptive planning, engineering, operation and management strategies that will facilitate this change that can be used in a flexible, comprehensive system approach as new knowledge emerges, new technology is developed, new data are collected, and as society's preferences change.
- **Solution**:
 - Identify, or develop where necessary, innovative dredging operations technologies considered by the practicing dredging community as desirable, but too risky and / or unfamiliar to apply during routine US navigation channel maintenance .
 - Test these new technologies in locations and situations suitable to demonstrate performance in terms of defined metrics, .
 - Ensure diffusion of well-performing technologies into the dredging community of practice .

Purpose

- Put well-performing new dredging operations technologies into practice that will improve abilities to execute the navigation mission within the available annual budget and manpower levels.
- Performance objectives:
 - Increase the levels of navigation channel service reliability provided
 - Decrease the costs of channel maintenance
 - Reduce adverse environmental impacts
 - Increase environmental benefits
- Focus Area consists of four topic areas
 - Diffusion of Innovative Technologies
 - Dredging Process Measurement and Analysis Technologies
 - Navigation Channel Management Tools
 - Systems Dredging Data Management Solutions

Ongoing Research Tasks

- **Diffusion of Innovative Technologies**
 - Diesel Fuel Economy and Emissions Performance testing
 - High Resolution Fluid Mud/Residuals Survey System
 - Draghead/Bedleveler Studies for TES Protection
- **Dredging Process Measurement and Analysis Technologies**
 - Improved Alarm Reporting
 - GIS web services
 - Improved SI Data Telemetry and QA Capabilities
 - SI Cutterhead Dredge Demonstrations
- **Navigation Channel Management Tools**
 - Channel Condition Indices
 - Over Depth Dredging Tools
- **Systems Dredging Data Management Solutions**
 - Enterprise Dredge (eDredge) Application
 - Pipeline Dredge Selection and Dredged Material Placement Screening Tool

Future Research Tasks

- **Diffusion of Innovative Technologies**
 - Subsurface Dredging Technique
 - Future Demonstrations to be Determined
 - Suggestions?
- **Dredging Process Measurement and Analysis Technologies**
 - Define Accuracy and Uncertainty in Mass Volume Recommendations
 - Bin Measure by SI for Payment Purposes
 - Dredging Production Trend Analyses
- **Navigation Channel Management Tools**
 - Channel Shoaling Scenario Predictor
 - Open Water Dredge Material Placement Site Optimization Tool
- **Systems Dredging Data Management Solutions**
 - Integrated Dredging Plans and Specifications (IDPS) Builder