



Field Technology Deployment Public-Private Partnership: Beneficial Use of Contaminated Dredged Material

Dredging Operations Environmental Research (DOER) Program

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Focus Area

Risk Management: Public Private Partnership - Innovative Technologies for Managing / Treating Contaminated Sediment to Expand Beneficial Use Opportunities

Problem

The U.S. Army Corps of Engineers (USACE) provides technical support to the U.S. Environmental Protection Agency (USEPA) for managing contaminated sites that fall under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as “Superfund.” Under its CERCLA mandate, USEPA often faces challenges to develop sustainable remedial approaches. This study aims to provide support for beneficial use (BU) of lightly contaminated sediments, aligning well with the USACE Chief of Engineers’ goal of promoting BU of dredged sediments.

Study Description

This study will conduct technology research and development for advancing the science of BU of lightly- (i.e., low- to mid-tier) contaminated dredged material (CDM) across the nation. Key to this research is the field technology deployment at two sites—Anacostia River/Kingman Lake and Newtown Creek—to advance the “proof of concept” for BU of lightly-contaminated sediments in aquatic environments (as illustrated in Figure 1). The scope of the studies at both sites will include testing ex situ stabilization and in situ treatment of CDM to create wetland habitats. Sediments will be dredged, stabilized, and placed in test plots followed by placement of in-situ amendments and/or clean habitat restoration materials to create specific target habitat zones. Wetland vegetation will be planted in some of the test plots and post-deployment monitoring will be conducted of various parameters, including sediment, surface water, and porewater chemistry; benthic community; and vegetation surveys. Research objectives for the two sites are as follows:

- **Anacostia River/Kingman Lake:** Test ex situ stabilization and in situ treatment of polychlorinated biphenyl-contaminated sediments in Kingman Lake (part of the Anacostia River Remediation Site, Washington, D.C.) to improve resiliency by increasing elevations and developing wetland habitats and promote educational and recreational use of those areas via stream channels for kayaking, paddling, etc.
- **Newtown Creek:** Test ex situ stabilization and in situ treatment of a multi-contaminant site at Newtown Creek, New York (an urban industrial site), using the treated CDM to establish wetland habitat and specific target habitat zones over the native sediments.

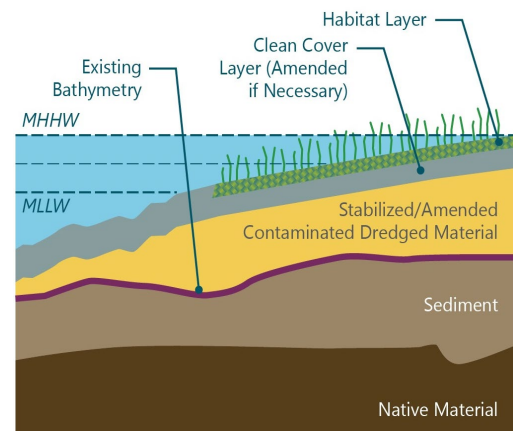


Figure 1. Schematic of the Proposed BU

Products

A series of technical notes and a technical report will be developed to document study results including proof of concepts for BU of CDM, best management practices, standard operating procedures, and recommendations for regulatory review and approval. Additionally, workshops will be conducted to engage with stakeholders and disseminate knowledge.

Summary

The aim of this study is to foster consideration of BU of CDM as part of national legacy contaminated site remediation projects via close coordination between USACE and USEPA along with other key stakeholders. Study products will be used to document technology effectiveness and utility.



Balancing operational and environmental initiatives and meeting complex challenges of dredging and dredged material placement in support of the navigation mission.