Dredge Placement Beneficial Use Comprehensive Benefits Tool

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Dredged sediment management is a substantial challenge for the US Army Corps of Engineers (USACE) who dredge over 200 million cubic yards of sediment annually. There is new emphasis on beneficial use of sediment with an agency objective to achieve 70% beneficial use by 2030. There are also new opportunities for beneficial use as the Corps' ecosystem restoration mission has matured and, in many cases, can be integrated into dredged sediment management. Coastal resilience is another important social benefit. The dredge placement Beneficial Use Comprehensive Benefit Tool (BUCBT) provides methods to evaluate the Ecosystem Goods and Service (EGS) benefits of sediment placement alternatives for individual dredge sites.

The BUCBT was requested by USACE Headquarters to support the vision of sediment as a resource for coastal resilience and ecosystem management. The development team envisioned a simple and rapid matrix approach to sediment placement alternative analysis that would be suitable to the rapid pace of USACE navigation operations planning. We also wanted to use terms and methods familiar to the USACE District staff, so we chose terms for dredge placement methods from approved Engineering Manuals. We also used a new USACE EGS Framework to provide the benefit metrics.

We developed a spreadsheet approach to matrix development and scoring, scoped it through USACE HQ for review, and tested the approach with dredgers and environmental staff in the USACE North Atlantic Division. The spreadsheet approach is limiting so FY24 funding allows development of a web application with greater database management capability and a simpler interface and reporting for District staff. We are also expanding outreach to other Divisions in regional workshops. The BUCBT is designed to be a simple, transparent, and site-based benefit accounting tool for local teams to compare sediment placement alternatives. The framework can be adapted to other resource management issues.

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