

Innovative Reuse & Beneficial Use Program



Re-Engineered Soil & Sod Lightweight Aggregates

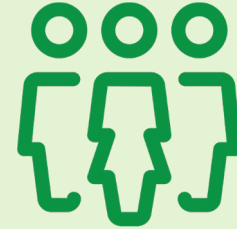
Dredging maintains safe passage for vessels making their way through the navigation channels that serve the Port of Baltimore, a key economic driver for waterborne commerce in Maryland. Removing sediment annually from the channels not only ensures the safety of our marine highway but also helps business at the Port of Baltimore continue to thrive.

Finding new placement capacity is a challenge in the Baltimore region. In 2017, the Maryland Department of the Environment issued guidance and criteria for opportunities to successfully reuse dredged material in a variety of ways. With strong community support and increasing educational efforts, the Maryland Port Administration (MPA) continues to implement its innovative reuse and beneficial use strategy which provides clear policy, regulatory, and technical actions.

In 2022, MPA acquired the 137-acre site located immediately to the north of the Cox Creek DMCF property for the primary purpose of furthering long-term capacity recovery efforts through large-scale innovative reuse of dredged material.

Innovative reuse is the use of dredged material in the development or manufacturing of commercial, industrial, horticultural, agricultural, or other products and includes upland uses of dredged material. This may include roadway and construction materials, manufactured soil blends, geotechnical fill, and landfill cover.

Beneficial use includes the use of dredged material for the restoration of underwater grasses, island restoration, stabilization of eroding shorelines, the creation or restoration of wetlands, and the creation, restoration or enhancement of fish or shellfish habitats.



The Innovative Reuse Committee (IRC) was created in 2006 to provide advice on the development of a strategy for recycling and reusing dredged material from the Baltimore Harbor. The IRC meets quarterly to receive updates and provide feedback on the MPA innovative reuse strategy goals and implementation.



Opportunities associated with beneficial use can help with climate change adaptation and resilience.



A Request for Proposals (RFP) was advertised in 2019 for research and development of novel dredged material end-use applications; multiple contracts were awarded under the RFP. These awards will advance the use of dredged material in areas such as manufactured building products, stormwater management, coastal resiliency solutions, and agricultural applications.

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Research and Development Projects



Belden Eco-Products Using Dredged Material

Belden Eco-Products developed a mixture using dredged material from the Cox Creek Dredged Material Containment Facility (DMCF) in combination with shale and/or clay sourced from the Belden Brick Company and Maryland-sourced fly ash for the manufacture of ceramic paving bricks or “pavers” in large-scale commercial volumes. In addition, project goals include evaluating the ability to manufacture pavers that meet the criteria of Category 1 – Residential Unrestricted Use Soil and Fill Material (MDE 2019) and the American Society for Testing and Materials (ASTM) performance criteria.

Northgate Environmental 3D Printing Coastal Stabilization Structures

Northgate Environmental developed and tested sediment use in 3D printed structures for marine placement and shoreline stabilization purposes. The results of the testing were used to assess whether manufactured concrete shapes using dredged material provide adequate strength, prevent leaching of heavy metals into the environment, and encapsulate the fine-grained material.

PROJECT TYPES

Many options are available to safely use dredged material, including:

- Roadway and construction materials
- Manufactured topsoil
- Brownfield reclamation
- Habitat development
- Restoration of eroded islands and wetlands

GOAL

To make long-term, sustainable innovative reuse and beneficial use programs and projects to address capacity recovery, an implemented component of the DMMP in Maryland, and to promote the long-term viability of the Port of Baltimore.



“The Department considers dredged material a resource with a variety of potential applications, including fill, that can be used safely and in a manner protective of human health and the environment.”

- Maryland Department of the Environment



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