

Confined Aquatic Disposal (CAD)

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 ensures the safety of our marine highway and helps businesses at the Port continue to thrive.

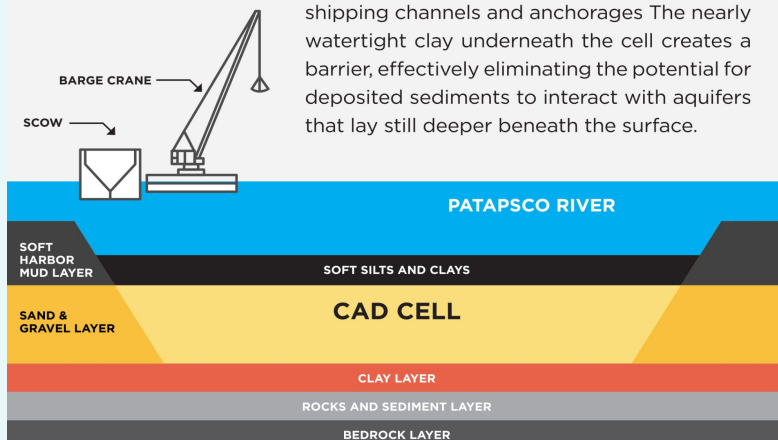
Finding new placement capacity is a challenge in the Baltimore region. In addition to dredged material containment facilities (DMCF) or innovative reuse and beneficial uses of dredged material, a third management option is being investigated called Confined Aquatic Disposal, or CAD.

Underwater locations suitable for a CAD site include sandy material that can be recovered/dredged and used in innovative reuse or beneficial use projects. Sediment removed from the shipping channel is then confined in the resulting depression.

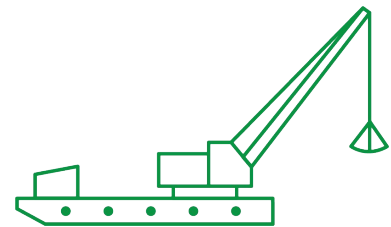
A successful CAD Pilot Project was constructed and filled in Baltimore Harbor in 2016-2017 and studied extensively. CAD has been used in Boston, Newark Bay, and multiple west coast locations.

How Does CAD Work?

For the Port of Baltimore, construction of a CAD cell would usually begin by dredging a thin layer of silt and clay on the river bottom and placing it in a DMCF. Next, a layer of sand and gravel would be removed to deepen the cell, but only in the areas underlain by a relatively thick impervious clay layer known as the Arundel Formation. That depression is then filled with dredged material from projects such as maintaining shipping channels and anchorages. The nearly watertight clay underneath the cell creates a barrier, effectively eliminating the potential for deposited sediments to interact with aquifers that lay still deeper beneath the surface.



MPA is responsible for waterborne commerce in the State of Maryland, which requires significant maintenance dredging of the navigation channel system.



CAD is being investigated as a potential dredged material management solution used as part of the State of Maryland's Dredged Material Management Program (DMMP), which identifies options for dredged material placement for channels serving the Port of Baltimore.

CAD has three key stages:

1. A depression (or cell) is excavated into the sand layer of the river bottom.
2. Excavated sand is used in a beneficial or innovative manner, such as wetland creation or structural fill.
3. The depression is then filled in with dredged material.

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CAD PILOT PROJECT A SUCCESS

To maintain the mandated 20-year dredged material capacity plan for the State of Maryland, the Maryland Port Administration (MPA) began investigating whether CAD is an alternative dredged material management method feasible for Baltimore Harbor maintenance dredged material. Following the 2016 CAD Pilot Project, planning goals were identified to be taken into consideration while exploring a second CAD project: evaluate different site conditions that may influence other locations within the harbor region; operate a larger capacity cell with the potential for multi-use or multiple cells within an established area; and determine cost-effectiveness.

If an additional CAD pilot project is deemed feasible and an acceptable site is selected, MPA would work under the oversight of the Maryland Department of the Environment (MDE) in coordination with other State and Federal regulatory agencies to determine if CAD adequately confines dredged material and is safe for the surrounding environment and adjacent communities. Community feedback will be incorporated and addressed throughout the vetting of this alternative method of dredged material management.

GOAL

CAD is a potential solution that MPA aims to continue to investigate, building on the successful implementation of a small-scale CAD pilot project adjacent to the Masonville DMCF.

NEXT STEPS

MPA will support the CAD sub-committee as it investigates feasibility considerations, including human and environmental health and safety, cost-effectiveness, and benefits to the State. Concurrently, MPA is planning opportunities for the public to learn more about dredged material management, including CAD. Additionally, outreach events to brief stakeholders on the developments and outcomes from the CAD sub-committee meetings will be held in 2024 and 2025.



If you want more CAD information, please visit the Maryland-DMMP.com website and sign up to receive updates.

CAD is an emerging dredged material management approach using underwater space created by newly excavated material to place Harbor dredged material safely and is a key component of the long-term success of the Port.



www.Maryland-DMMP.com

