

Maryland Port Administration (MPA) Mid-Chesapeake Bay Island Ecosystem Restoration Project

Frequently Asked Questions (FAQs)



DREDGED
MATERIAL
MANAGEMENT
PROGRAM

GENERAL DREDGED MATERIAL INFORMATION

What is dredged material?

Dredged material is sediment excavated - or dredged - from the bottom of waterways.

Why is dredging necessary?

Over time, sediment accumulates in shipping channels due to wind, tides, and runoff. Several factors may impact the sediment depth in the shipping channels, such as runoff that originates from land-based activity, weather events, or underwater sediment that shifts in the wake of commercial and industrial ship traffic. This sediment accumulation can limit channel navigability.

How often do channels need to be dredged?

Dredging is happening continually, with an average of 4.6 million cubic yards (mcy) of sediment removed from shipping channels in the Chesapeake Bay and 1.17 mcy removed from the Baltimore Harbor shipping channels annually. That's the equivalent of filling the Baltimore Ravens M&T Bank Stadium to the brim with sediment twice. The frequency of dredging in specific areas depends on the amount of sediment accumulated. The Maryland Port Administration (MPA) and the US Army Corps of Engineers (USACE) work together to conduct dredging and find placement sites and solutions for this dredged material, which is also referred to as "maintenance dredging."

What is in dredged material?

Dredged material in the Chesapeake Bay and Baltimore Harbor is mostly fine silts, clay, and sand accumulating in the shipping channels. The geologic formations in the region, as well as human activities, affect the character of the sediment in different locations. Human activities affecting sediment include industrial activity, agriculture, and urban development. However, dredged material from shipping channels generally does not contain pollutants at levels that could cause human or environmental harm and is not classified as hazardous.

DREDGED MATERIAL TESTING

How is dredged material tested for placement in a dredged material placement site containment facility (DMCF)?

Sediment dredged from shipping channels is tested before dredging and, if it meets state and federal regulations, can then be placed in a containment facility. To evaluate dredged material from the federal navigation channels, EPA's Inland Testing Manual is used to screen channel material during USACE evaluations for maintenance channel dredging.

MPA requires testing of dredged sediments for various physical and chemical traits to determine sediment suitability for placement at DMCFs. Sediments are tested for organic contaminants, such as polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and pesticides that bind strongly to sediments. Tests also include grain size, specific gravity, metals, nutrients, pH, total organic carbon, oil, total petroleum hydrocarbon (TPH), ammonia, sulfides, cyanide, and tributyltin. A Toxicity Characteristic Leaching Procedure (TCLP) is also performed, which is a leaching procedure that is used to evaluate a sample to determine which of the contaminants are present in the leachate as well as their concentrations.

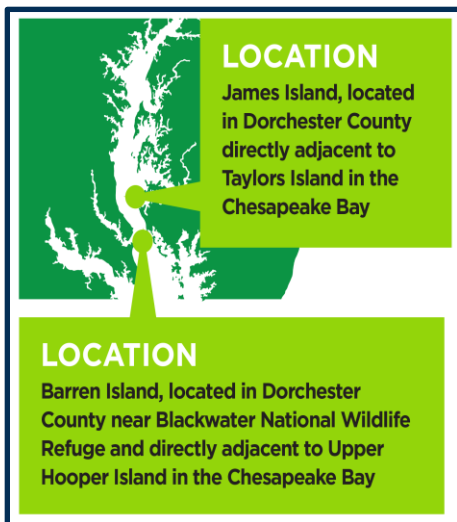
How is dredged material tested for beneficial reuse?

Dredged material that meets specific criteria in state and federal regulations can be considered for "Beneficial Use." Beneficial use includes 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. This is a mutually beneficial outcome as it helps MPA meet its dredged material management needs and provides the sediments needed to restore animal and plant habitats.

Beneficial use projects require monitoring and maintenance plans to prevent adverse effects and ensure proper function. A key consideration in determining sediment characterization requirements by MDE for beneficial uses is the source of the dredged material. Dredged material from inside the legally defined Baltimore Harbor will generally require more rigorous sediment characterization, both physical and chemical, and associated monitoring in order to be deemed suitable for beneficial use. Dredged material from the Baltimore Harbor is not authorized for placement at the MPA and USACE co-sponsored island restoration projects. The dredged material used in island restoration projects originates from the Maryland bay channel segments.

Similar to dredged material placed at a DMCF, MPA requires testing of dredged sediments for various physical and chemical traits to determine sediment suitability for use in island restoration projects. Sediments are tested for organic contaminants, such as PAHs, PCBs, dioxins and furans, and pesticides that bind strongly to sediments. Tests may also include grain size, specific gravity, metals, nutrients, pH, total organic carbon, ammonia, sulfates and sulfides, acid volatile sulfides/simultaneously extracted metals, cyanide, and butyltins. Effluent elutriates, which simulate the potential release of dissolved chemical constituents during the dewatering process from a restoration site, are conducted to characterize the chemical properties of the effluent that would potentially be discharged from a placement facility.

MID-BAY PROJECT OVERVIEW



Where is the Mid-Chesapeake Bay Island Ecosystem Restoration Project (Mid-Bay Project) located?

The Mid-Bay Project will restore ecosystems of the severely eroding Barren and James Islands. Barren Island is located in Dorchester County near Blackwater National Wildlife Refuge and directly adjacent to Upper Hooper Island in the Chesapeake Bay. James Island is located in Dorchester County, directly north of Taylors Island in the Chesapeake Bay.

What is the goal of the Mid-Bay Project?

The goal of the Mid-Bay Project is to restore and protect valuable and threatened mid-Chesapeake Bay remote island ecosystems through the beneficial use of dredged material.

What are the objectives of the Mid-Bay Project?

The Mid-Bay Project design follows objectives determined in the Mid-Bay Project Environmental Impact Statement: 1) Restore and enhance marsh, aquatic, and terrestrial island habitat for fish, reptiles, amphibians, birds, and mammals; 2) Protect existing island ecosystems, including sheltered embayments; 3) Provide dredged material placement capacity for Federal navigation channels; 4) Increase wetlands acreage in the Chesapeake Bay watershed; 5) Decrease local erosion and turbidity; 6) Promote conditions to establish and enhance submerged aquatic vegetation; 7) Promote conditions that support oyster recolonization; 8) Minimize impacts to rare, threatened, and endangered species and their habitat; 9) Minimize impacts to existing commercial fisheries; 10) Minimize establishment of invasive species to maximum extent possible; and 11) Minimize impacts to existing fisheries nursery, feeding, and protective habitats

How were Barren and James Islands selected for the Mid-Bay Project?

Initially, 105 Maryland island sites were considered. The goal was to identify a project(s) that was a cost-effective solution, would restore remote island ecosystem habitat, and address dredged material management options recommended in the Federal Dredged Material Management Plan (Federal DMMP). The project team considered various environmental and engineering factors and public input when narrowing the selections through an evaluation process. Once Barren and James Islands were selected, over 145 alignment alternatives were evaluated for engineering and design suitability, ecosystem benefits, cost, and input from natural resources agencies to select the final alignments.

The Barren Island portion of the project focuses on habitat restoration and protection. The James Island portion focuses on maximizing habitat restoration objectives and dredged material placement capacity.

How will this project restore Barren and James Islands?

The restoration of Barren Island will utilize dredged material from local federal shallow draft channels to restore a minimum of 72 acres of remote island habitat. The restoration will also include the installation of protective stone sills, a segmented breakwater, and two bird habitat islands. The newly formed wetlands and structures will slow the erosion of

Barren Island itself, protect the submerged aquatic vegetation (SAV) habitat in Tar Bay, and provide some protection for the adjacent land.

The restoration of James Island will utilize dredged material from the Chesapeake Bay approach channels serving the Port of Baltimore to build 2,072 acres of lost remote island habitat. Once fully restored, approximately 45% of the island will provide upland and 55% wetland habitats.



What is the timeline for Barren Island construction?

Barren Island Phase I construction began in March 2023, includes the installation of most of the rock that will create sills and breakwaters encompassing the island, and was completed in October 2024. The remaining rock sills, bird islands, and internal confining units will be constructed in Phase II, which will likely begin in late 2024. Wetlands restoration (Phase III) depends on annual federal funding availability and approval processes for USACE small navigation dredging. Federal funding for such dredging of the Honga River Federal Navigation channel has been secured, so material can be dredged and placed as soon as wetland cell confinement structures are completed, likely in 2026. Multiple dredging cycles will be required to complete the wetlands.

What is the timeline for James Island construction?

Pending approvals for project permits and funding, James Island restoration could begin in late 2025. The construction and restoration effort are estimated to be completed in 30+ years.

What is the role of the USACE and MPA in this project?

The Mid-Bay Project is being completed under a federal/state cost-share partnership between the USACE and MPA. The USACE will primarily be responsible for project design and construction. MPA is responsible for future operation and maintenance of the project sites.

Who provides funding for this project?

The Mid-Bay Project is being completed under a federal/state cost-share partnership between the USACE and the non-Federal sponsor MPA. The cost share is 65% Federal and 35% non-Federal.

Public funding is being used for the Mid-Bay Project due to the project's benefits to Maryland. MPA aims to stimulate the flow of waterborne commerce through the ports in the State of Maryland to provide economic benefit to the state's citizens, and maintaining shipping channels that serve the Port of Baltimore is crucial to meeting that goal. The Mid-Bay Project is a win-win for the Maryland economy and the environment. The funding will not be used to restore the privately owned remnants of James Island.

CONSTRUCTION AND MATERIALS

What is the source of the dredged material used to restore Barren and James Islands?

Small local federal navigation channels are the designated material source for the Barren Island restoration. In contrast, the larger Maryland Chesapeake Bay shipping channels are the designated source of dredged material for the restoration of James Island.

The channel most likely to be used as source material for Barren Island wetland restoration is the Honga River Channel. The USACE has received \$3.22 Million in Federal funding for dredging the Honga River Federal Navigation Channel. The first dredging event will likely occur in 2026 after a confined wetland cell is created to accept the material. Multiple dredging cycles will likely be required to complete the wetlands. Due to the uncertainty of annual federal funding availability and approval, a schedule for additional dredging of this channel (or others) for source material for Barren Island is not available after this initial event.

Will there be a sand borrow area associated with Barren Island construction?

Yes, completing the Barren Island restoration project requires a suitable sand source to construct various project components to restore wetlands and bird nesting habitats. For these applications, sand with less than 20% fine particle content is needed for proper construction. Sand is necessary for 1) foundation replacement where soft bottom exists under the northeast sill footprint, 2) the construction of internal containment structures to develop wetland habitat, and 3) the development of bird nesting islands behind the south breakwaters (see Exhibit 2). Sediment studies as well as efforts to avoid existing SAV and oyster habitat were used to identify a suitable borrow area 1.5 miles west of Barren Island in open water. Every effort will be made to reduce sand needs where feasible. Based on feedback from local water users and natural resource agencies, dredging of bottom sand will be kept shallow (average of 5 feet) and within the smallest footprint possible.

What material will be used to construct the dikes at James Island?

The James Island dikes will be constructed with the sand removed from a designated borrow area within the James Island restoration footprint. The dikes will be surrounded by large armor stone, similar to Poplar Island dike construction.

Will the Honga River Channel be realigned during dredging? Will there be any associated projects to reduce the shoaling rate of this channel?

While the material dredged from the Honga River Channel will be placed on Barren Island, the funding and approval processes for this dredging are not cost-shared and are handled solely by the USACE Operations and Maintenance program.

USACE's (Baltimore District) Navigation Branch reviewed the current channel alignment and determined that it was in the best interest of the channel users to maintain the current channel alignment for the 2026 dredge cycle. The primary reasons for this were (1) the extensive time required to coordinate with regulatory agencies to move the channel, and (2) in researching historical documents on the channel it was noted that the current alignment is set the way it is to reduce the shoaling rate. If the channel were realigned it is not clear if it would improve (reduce) the shoaling rate.

The original Honga Channel Jetty Project was initiated, through the Continuing Authorities Program (CAP) – Section 107, to determine if the USACE could move forward with a cost-shared (50% USACE/50% non-federal Sponsor) feasibility study to investigate actions that would best slow the shoaling rate of the Honga River Channel. Although the study had a positive economic analysis at the time, meaning there was Federal Interest and the USACE could support the future feasibility study, the project was terminated by Dorchester County (the County) due to funding and timeline concerns. Should the County, or another non-federal sponsor, choose to restart the study, a notice of intent should be submitted to the USACE and they would have to reaffirm Federal Interest through an updated economic analysis before moving into the feasibility phase.

Will discharged water impact the surrounding environment?

No, when dredged material is added to a containment cell, it is mixed with water, the material settles out and the remaining water is discharged to allow the material to settle and dry. To remain in compliance with the Tidal Wetlands License and Water Quality Certification issued by MDE, water within the confined dredged material cells will be held for release until it meets state water quality standards and will not have a negative impact.

COMMUNITY BENEFITS & IMPACTS

What are the public outreach and engagement opportunities?

The Mid-Bay Project has incorporated a robust outreach program through the planning, and now the construction phases. Community members receive important project updates through periodic email and newsletter releases and are further engaged through informational poster sessions and regulatory public meetings. One-on-one meetings as well as smaller focused meetings have occurred with concerned citizens, active stakeholders, and special interest groups (such as water users). Through these interactions, the project team disseminates information, answers questions directly, and gathers input that can be applied to project components and future outreach materials.

Should you have comments and questions, or want to receive updates regarding the Mid-Bay Project, please use the available forms found on maryland-dmmp.com/placement-sites/mid-bay-island.

How will the Mid-Bay Project affect the surrounding communities?

The Mid-Bay Project will assist in local shoreline protection by reducing wave energies. It will reduce wave energy on adjacent shorelines, increase water clarity, and provide a habitat for waterfowl and other native wildlife species. The project will also provide recreational benefits, including improved opportunities for passive wildlife watching and fishing. The project also has the potential for local job creation similar to Poplar Island in Talbot County, such as maintenance and operation positions (construction equipment operators) and environmental positions (sampling and habitat monitoring).

The restoration of remote island habitat near James and Barren Islands will have permanent impacts through the burial of a minimum of 2,144 acres of Bay bottom. Construction can also potentially have an impact on fisheries at Barren and James Islands due to increased turbidity and construction activities. Due to the low bivalve population within the Barren and James Island project areas, the construction should not adversely impact the commercial clam or oyster industry. Blue crab populations are not anticipated to be impacted by construction as they are highly mobile. Although dredging of the sand borrow area is targeted for October to April, commercial crabbers could see disruptions to the use of the water around Barren Island for crabbing. The benthic environment will be disturbed through use of the sand borrow area, but recovery has been seen within the first two to three years after use on similar projects. Commercial crabbers should also expect to experience disruptions and changes to the use of the waterway in the James Island vicinity.

There will be short-term noise disturbance from the construction of Barren Island, but construction would occur during the day and not conflict with local noise ordinances. Due to the distance of the shoreline properties to the James Island project area, construction-related noise and lights are expected to be minimal.

The area will experience an increase in boat and barge traffic during construction with implemented construction safety zones. Recreational and commercial fishermen must navigate the project area and safety zones to reach fishing grounds.

How will the Mid-Bay Project benefit adjacent shorelines?

Hydrodynamic modeling was conducted to evaluate local shoreline impacts, and results were included in the 2009 Mid-Bay Project Environmental Impact Statement. The hydrodynamic modeling included comparing wave height differences between the 2009 recommended restoration design, existing conditions, and a future without the project (assuming the remnant island completely erodes). More specifically:

Barren Island

Once the recommended Barren Island design is implemented, up to a 30% reduction in storm-related shoreline erosion may be seen as the project will maintain or reduce wave and wind energy in the area. This reduction in erosion likely causes reduced, suspended sediment and improved water clarity.

James Island

James Island is relatively far from the adjacent shoreline, and the impact of the recommended design on that shoreline indicated reductions of wave height between 0 and 2 feet. Due to the reduction in wave and wind energy, some protection would be afforded to the adjacent shorelines, mostly on Taylors Island. This reduction in erosion likely causes reduced, suspended sediment and improved water clarity. We don't have projected percent reduction in storm-related shoreline erosion at this time, but additional modeling will be performed.

Will the islands be open to the public for recreational use?

Once the Barren Island restoration is complete, current recreational opportunities being provided on the Department of Natural Resources (DNR) property known as the Tar Bay Wildlife Management Area and the US Fish and Wildlife Service (USFWS) property, which is part of the Chesapeake Marshlands National Wildlife Refuge Complex, will resume. All future recreational uses of James Island shall be low impact. Once construction is complete, MPA in coordination with other state and federal agencies will identify potential uses for the restoration sites. The primary goal and objective of the project is restoration and protection of remote island habitat for wildlife; therefore, any agreed upon recreational use will need to

ensure that the islands continue to offer protection to the State's sensitive species including those listed as rare, threatened, and endangered.

What will be the effects of using the existing Tar Bay Wetland Management Area and Chesapeake Marshlands National Wildlife Refuge Complex at Barren Island during the restoration at Barren Island?

During construction and restoration activities, usage disruptions may occur for safety reasons. All safety zones around construction areas will be well-marked with buoys.

How is the restoration project designed to address erosional forces and sea level rise?

The USACE is required under Engineering Regulation (ER) 1100-2-8162 to evaluate climate change impacts on inland hydrology and/or sea level change for all projects. The final wetland elevations will be selected based on sea level rise projections from local gauges and conditions in area marshes to provide habitat value and future sustainability. To protect restoration efforts from erosional forces, stone dikes, breakwaters, and sills have been integrated into the design. Extensive hydrodynamic modeling, including a review of multiple storms, has and will occur to ensure the best selection of protective structures' alignment, slopes, heights, and armor stone sizing.

The Mid-Bay Island design team is working closely with DNR, USFWS, the National Oceanic and Atmospheric Administration (NOAA), and MDE regarding the inclusion of sea level rise considerations in the entire restoration project. The goal is to maximize the resiliency and future sustainability of the restored areas. Nature-based features, such as softened shorelines, are also being examined for inclusion in this effort.

ISLAND OWNERSHIP

Who currently owns Barren Island and James Island, and who will own the area once it is restored?

Barren Island

The northeast side of Barren Island is owned by DNR and is referred to as the Tar Bay Wildlife Management Area. The USFWS owns the remaining portion which is part of the Chesapeake Marshlands National Wildlife Refuge Complex (see figure below). Ownership of those areas will remain with DNR and USFWS. The ownership of the future restored areas of Barren Island and the operation and maintenance responsibility will be held by MPA.



James Island

MPA will take ownership and be responsible for any future restored James Island operations and maintenance, but not the privately owned James Island remnants. As of 2022, none of the privately owned James Island exists above mean sea level. By Maryland state law, once land has eroded to the point that it is below water at mean high water (MHW), it is considered State tidal wetlands, and held in trust for the citizens of the state (i.e., no longer privately-owned). The restoration project will occur regardless of the status of the James Island remnants.

Will the remnants of James Island be incorporated into this upland/wetland creation?

No, the restoration will be constructed adjacent to the footprint of the remnant islands.