

DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM
BAY ENHANCEMENT WORKING GROUP

January 4, 2024, 10:00 AM

Cox Creek Operations and Maintenance Complex
1000 Kembo Road, Curtis Bay Maryland 21226
Hybrid Meeting

Attendees:

Anchor QEA: Mark Reemts
Anne Arundel County Department of Public Works: David Braun
Baltimore City Department of Public Works: Kim Grove
Baltimore County Department of Environmental Protection and Sustainability: David Riter
Baltimore Development Corporation, Baltimore City: William Cawthern
Baltimore City Department of Planning: Jazmine Kimble
Chesapeake Bay Foundation (CBF): Gussie Maguire
Critical Area Commission (CAC): Jennifer Esposito, Ann Sekerak
Citizen: Jeff Halka
Dredged Material Management Program Citizen Advisory Committee (DMMP CAC): Adam Lindquist (CHAIR)
Department of Natural Resources (DNR): Gwen Gibson, Roland Limpert
EA Engineering: Frank Barranco
Maryland Board of Public Works (BPW): Bill Morgante
Maryland Department of the Environment (MDE): Matt Wallach
Maryland Environmental Service (MES): Dallas Henson, Lauren Mentzer, Christine Offerman, Kenna Oseroff
Maryland Port Administration (MPA): Rachael Gilde, Holly Miller
Maryland Geological Survey (MGS): Steve Van Ryswick
National Marine Fisheries Service (NMFS): Jonathan Watson
U.S Army Corps of Engineers (USACE): Charles Leasure
U.S. Environmental Protection Agency (USEPA): Stephanie Jacobs, Byron Riggins
US Fish and Wildlife Service (USFWS), Chesapeake Bay Field Office (CBFO): Robbie Callahan
US Geological Service (USGS): Forrest Vanderbilt
University of Maryland Center for Environmental Science (UMCES): Elizabeth Price, Lorie Staver, Lisa Wainger

Action Items:

- MPA will provide the BEWG with the amount of innovative reuse material used to-date.
- MPA will share the list of concerns expressed by the Joint Evaluation Committee related to a second CAD pilot project.
- MPA will distribute the draft BEWG mission statement and CAD subcommittee list document for review. (*Complete*)
- The BEWG will review the draft BEWG mission statement and CAD subcommittee list document by 1/19. (*Complete*)

- The BEWG will provide their availability for the CAD Subgroup meetings and next full BEWG meeting. *(Complete)*
- MPA will share the CAD site selection geotechnical report and other pertinent data with the BEWG.
- MPA will distribute the January BEWG presentation to members. *(Complete)*

1.0 Welcome and Introduction

Ms. Lauren Mentzer, MES

Ms. Mentzer welcomed attendees and called the meeting to order, requesting all members of the Bay Enhancement Working Group (BEWG) to announce their name and organization affiliation. The BEWG has been reconvened to receive an update on capacity planning and the status of past BEWG recommendations, and to address concerns associated with the second Confined Aquatic Disposal (CAD) pilot project, which has been paused to ensure there is a comprehensive educational and stakeholder engagement process and to receive input that can be fully incorporated into considerations for the future of the program.

2.0 Dredged Material Management Program - Capacity

Ms. Holly Miller, MPA

Ms. Miller thanked attendees for coming to the reconvening of the BEWG. Ms. Miller stated that given the timing of the last BEWG meeting and the number of new members, an overview of the Dredged Material Management Program (DMMP) would be provided highlighting the mission of the MPA, why the MPA dredges, and how MPA plans to meet future dredging needs.

The mission of the MPA is “To increase the flow of waterborne commerce through the State of Maryland in a manner that provides benefit to the citizens of the State.” The Port is an economic engine providing employment, income, and tax revenue to the state. The Port is located about 150 miles from the mouth of the Chesapeake Bay. By using the Port of Baltimore, cargo is only a day's travel by truck or train to middle America, a major target market. The channel system links the Baltimore Harbor to the Atlantic Ocean through two separate approaches, north and south. Five million cubic yards (cy) of sediment are removed every year to maintain safe passage in the shipping channels. The Dredged Material Management Act was enacted in 2001 to ensure the channels remain open for waterborne commerce. It established a hierarchy of dredged material management options, with innovative reuse (IR) and beneficial use (B U) as the top priority. MPA is required to establish a rolling 20-year plan that outlines the demand for material, the need for regular maintenance, and identifies placement capacity; this requirement is met through the DMMP. Implementation of the DMMP relies heavily on advice and input from regulatory agencies, engineers, environmental interest groups, industry partners, institutions of higher learning, non-governmental organizations, and a variety of citizen stakeholders to develop a thoughtful well-rounded plan.

Long Range Capacity Planning is a comprehensive and formal procedure that projects dredging needs, available capacity at placement sites, and identifies alternative measures to extend the life of the placement sites. The planning process assists MPA with understanding the timing for future options to be brought online to provide capacity as needed.

The current dredged material management solutions being implemented for the Baltimore Harbor channels were developed in collaboration with the Baltimore Harbor Team, the DMMP committees, and the BEWG in 2011. The Baltimore Harbor is defined as all waters that are north and west of the North Point/Rock Point line. All the material dredged in this area is currently managed at either the Cox Creek Dredged Material Containment Facility (DMCF) or the Masonville DMCF. The current capacity projections include IRBU, although there are some pinch points in the near future where there is insufficient capacity for 20 years of projected maintenance dredging needs. This is due to the uncertainty in the amount of IR material that can be utilized and how quickly the program will increase its ability to meet capacity needs. Mr. Watson asked how much of the anticipated 20-year capacity of 25.2 million cubic yards (mcy) was estimated to be used in the IR program. Ms. Miller replied that approximately 100,000 to 250,000 cy of material per year. There is currently not enough capacity to meet the 20-year demand with the Cox Creek DMCF and Masonville DMCF alone. Ms. Gibson asked at what point in the 20-year plan there will be a pinch point. Ms. Miller explained the pinch point is between 2023 and 2030, until the IR program is fully underway and providing capacity support.

3.0 Bay Enhancement Working Group

Ms. Lauren Mentzer, MES

Ms. Mentzer reviewed past BEWG efforts to provide context on the history of the BEWG and key takeaways from the comprehensive coordination and findings of the BEWG. Ms. Mentzer stated that the BEWG, comprised of scientific, regulatory, and technical managers, provides support on an ad hoc basis regarding the development and implementation of placement activities by the Port of Baltimore.

In 2001, the BEWG was convened with the goal of developing a shortlist of placement options for the Chesapeake Bay channels and Baltimore Harbor channels. From 2001-2011, there were regular meetings to provide updates on the DMMP and the status of options suggested and developed by the BEWG.

In 2011, the Baltimore Harbor Team asked the BEWG to rank placement options as an alternative to a DMCF at Coke Point based on environmental and quality of life factors. The BEWG was presented options and utilized a scoring matrix to determine a ranking of the options provided. The Baltimore Harbor Team developed a report to provide a narrative of the rankings.

In 2017, MPA notified the BEWG that the Innovative Reuse and Beneficial Use of Dredged Material Guidance Document (Guidance Document) developed by MDE, MPA, and other stakeholders, was available for public comment.

The key take-aways from these several years of effort included the BEWG identifying environmental, engineering, and other parameters that are necessary to consider when ranking dredged material management options for the Chesapeake Bay channels and Baltimore Harbor channels. The resulting options were ranked, and MPA moved forward with projects as they were able based on project feasibility and funding. Projects that were found to be feasible were implemented in the order of priority that reflects the BEWG rankings, and rankings were updated as solutions that were explored were determined to be unfeasible. Thus, the order in which the

projects were executed differed from the original rankings and reflected the updated rankings that removed non feasible solutions.

In 2011, BEWG ranked CAD as the number one priority option for Baltimore Harbor channel material, followed by the combined Cox Creek DMCF Expansion & Tronox Property Expansion option. IRBU is not on the options list as it was already considered to be a component and priority of the capacity plan.

5.0 Project Updates

Ms. Rachael Gilde, MPA

Ms. Gilde provided a review of the other projects the BEWG previously approved and where CAD fits into the remaining options for capacity planning. Regarding the Chesapeake Bay channels, Poplar Island Expansion continues to receive dredged material and will provide 28 mcy of capacity while the full island will provide a total of 71 mcy of capacity. Poplar Island Expansion provides a total of 575 acres of wildlife habitat, 206 acres of wetlands, 259 acres of uplands, and 110 acres of open water embayment. Construction for the expansion began in 2017 and was completed and received its first inflow in 2021.

The Mid-Chesapeake Bay Island Ecosystem Restoration (Mid-Bay) Project, located in Dorchester County, is a cost share between the USACE and the MPA that will provide 90-95 mcy capacity over the next 30-40 years. Construction for Barren Island began in 2023. James Island is in the design phase; construction is anticipated to begin in 2025 with plans for inflow by 2030. Based on projections in the long-range capacity plan, these two projects combined provide more than 20 years of capacity for Chesapeake Bay Channel dredging. Baltimore Harbor Channel dredged material may not be placed in these facilities.

Dredged material from the Baltimore Harbor is required to be placed in a confined location. Currently, the Baltimore Harbor channel dredged material is placed in two DMCFs; Masonville, and Cox Creek. The Masonville DMCF dikes are being raised from +18 feet (ft) mean low lower water (MLLW) to +30 ft MLLW. By 2029, the dikes will be raised to +42 ft MLLW. The increased height of the DMCFs will increase the volume of dredged material that can be accommodated. The final height of the DMCF is limited by the project end goal, which is to provide additional cargo space for roll-on roll-off cargo. Similarly, the Cox Creek DMCF is currently in the process of completing and finalizing the expansion, which raised the dikes to +60ft MLLW and will eventually be raised to +80ft MLLW. The final height of the Cox Creek DMCF was influenced by the end goal of the Cox Creek DMCF facility, which is explained in more detail below. Both of these expansions were a recommendation of the BEWG.

Cox Creek and Masonville DMCF represent a typical confined disposal site and finding additional sites in this region for new DMCFs is very challenging given the dense development around Baltimore Harbor and the absence of available large tracts of land. The Tronox property (formally Millenium) was purchased by MPA in 2022 and has been renamed the Cox Creek Sediment Technology and Reuse (Cox Creek STAR) Facility. There were significant delays in the purchase of the property due to multiple changes in ownership during purchase negotiations and the complexities of onsite contamination and needed remediation. This facility will be developed to host large-scale IRBU after remediation is completed. A 10-year phased remediation plan is being

implemented for the property that will allow MPA to incrementally increase the amount of IRBU that can be completed throughout that period. Mr. Halka stated that the goal created by the BEWG was to reclaim 500,000 cy of dredged material per year through IR by 2023. Ms. Mentzer noted that the 500,000 cy of material is based on the amount of capacity in the DMCF anticipated to be recovered, not 500,000 cy of dried IR material.

In support of placing and using dredged material beyond DMCFs, MDE coordinated with MPA to develop the Guidance Document. The Guidance Document provides testing criteria for dredged material based on end use and the BEWG was consulted to review this document in 2017. Additionally, categories for dredged material reuse were established based on levels of risk to human health and environmental receptors. As directed by the 2014 IR Strategy, multiple small-scale demonstration projects were initiated in 2019 to review and test the feasibility of reusing dredged material. These demonstration projects ranged from daily landfill cover to engineered fill. Since 2019, through a request for proposals advertised by MPA, seven contracts have been awarded for small-scale IR projects utilizing dredged material in a variety of products including ceramic bricks, concrete traffic barriers, formulations for growing sod, and berms for highway embankments.

Mr. Wallach asked for clarification regarding the demonstration projects and the ability to scale up the projects. Ms. Miller confirmed that the projects were used to demonstrate the ability to use dredged material as well as the ability to scale up the projects when there is a facility and space that could accommodate them. Ms. Price asked what remediation is necessary at the Cox Creek STAR Facility. Ms. Miller stated that there are soils, buildings, and settling ponds that must be remediated due to impacts from past industrial activities at the site. The previous property owner is assisting in the remediation as a cost share.

Mr. Watson asked what the deadline date was for the IR program to meet its goal of 500,000 cy capacity. Mr. Halka replied that in 2011 BEWG initially set a goal of 500,000 cy of capacity recovered annually by the year 2023, which was an aspiration without back-up knowledge that the goal was attainable. Ms. Miller noted that due to delays with land acquisition and project implementation, that goal was not reached. Mr. Watson asked how much the IR program has been able to reuse to date. MPA will provide the BEWG with the approximate amount of IR material used to date.

6.0 C A D Subgroup Planning and Next Steps

Ms. Rachael Gilde, MPA

Like IRBU, CAD is an alternative to DMCFs for managing dredged material and has been explored as a potential solution since it was highly prioritized by the 2011 Baltimore Harbor Team. There are two steps to creating a CAD cell in the Baltimore Harbor. (1) The existing mud layer is removed first, comprised of soft silts and clays, and placed in a DMCF. (2) The deeper sand and gravel layer are then removed, creating a depression, or CAD cell, and the sandy material that was removed is placed, dried, and reused. Maintenance dredged material is then placed into the CAD cell. The clay layer below the cell assists with the confinement of the dredged material. The volume of the material placed in the cell is approximately half the amount of material that is removed due to the behavior of the sediment that is placed, which bulks when mixing with water. Over time the sediment in the CAD cell consolidates and occupies a lesser volume. Therefore, the ability to reuse

the sand and gravel layer removed from the CAD cell is critical to making this an effective dredged material capacity option. Mr. Wallach asked for clarification regarding the connection between the CAD and IR programs. Ms. Miller explained that the sandy material obtained through the CAD project can be innovatively reused in a greater multitude of applications than the material that is being explored through the IR program because of the sand content. Innovative reuse in this case would require shorter material processing time and quicker implementation. Mr. Limpert asked if the CAD cells are being considered inside the shipping channel or in areas outside the shipping channel. Ms. Gilde stated that the CAD cells are being considered in areas outside of the shipping channel.

Ms. Gilde stated that the first CAD pilot project took place in September 2016. Baseline monitoring was conducted before dredging and placement. Approximately 130,000 cy of sand material was removed and placed in the Masonville Kurt Iron Slip. Approximately 62,000 cy of maintenance dredged material was placed into the CAD cell. Monitoring occurred during placement, followed by extensive post-placement monitoring in 2017 and 2018 to evaluate the long-term stability of the material within the cell. In order to determine whether the first pilot was a success, MPA assessed whether it accomplished the goals established for the pilot. The goals included successfully permitting, constructing, and filling the CAD cell, and confirming that the turbidity and nutrient concentrations during placement were consistent with baseline results. The first pilot accomplished these goals and was deemed successful by the MPA technical team. As a next step towards determining CAD as a potential dredged material management option in the Baltimore Harbor, the information from the first pilot has been used to establish goals for a second pilot project. These goals include examining the success of a project with larger capacity, different site conditions, which includes increased hydrodynamic activity, as well as assessing cost effectiveness, availability and timing of capacity, and other factors.

Ms. Staver asked if there is a cap placed on the dredged material in the CAD cell. Ms. Gilde replied that the material is not capped. Mr. Watson asked to confirm that the first pilot lost about 10,000 cy of material. Mr. Reemts stated that material migrated due to departing ships causing a scour hole. This caused the team to investigate alternative locations that would allow additional clearance to prevent disturbance from ship activities. Mr. Leasure asked how much the material decreased in volume over time and if additional material could be placed in a CAD cell after the material has settled. Mr. Reemts replied that due to water, the material can be almost double in volume when it is placed into the CAD cell. The original placement of 62,000 cy bulked up to around 130,000 cy when placed, and within the first few months it had decreased in volume to 80,000 cy; after several years the material should finally return to the original 62,000 cy placed. Mr. Reemts added that additional material could be placed after settling if appropriate consideration was made to prevent overfilling and ensure the sides of the cell could maintain containment. Mr. Watson asked who determined the successfulness of the pilot project. Ms. Miller stated that the project team including MPA, MES, and Anchor QEA determined it was a success based on the project goals outlined prior to the pilot, but results were communicated with DMMP committees including the Harbor Team, throughout the project.

Ms. Gilde stated that in 2018, MPA initiated a study to begin identifying potential future CAD sites by consolidating and analyzing existing information to narrow down locations that did not include infrastructure, utility crossings, potentially impacted sediments, mitigation areas, and areas

of limited site access for equipment. Between 2019 and 2020, additional evaluations were conducted on the locations established in the study to further narrow down the potential sites. These additional evaluations included environmental assessments, hydrodynamic modeling, and geotechnical investigations. The environmental assessment reviewed factors for air quality, biological resources, cultural resources, geology and soils, wind and waves, hydrology and water quality, navigational impacts, infrastructure and utility crossing, and socioeconomics. This study showed that when selecting a potential CAD cell site, the environmental impact of a CAD site results in no major differences within the region that Baltimore Harbor material can be placed. Most locations would see short-term, minor impacts during construction. A hydrodynamic and sediment transport model was utilized to evaluate conditions potentially impacting site construction and long-term material stability. To find locations with sufficient sand content, seventeen borings to a depth of -90 ft MLLW were conducted during the geotechnical investigations to determine sand location depths and thickness as well as overburden material that would need to be managed if removed for a CAD cell. The results of these investigations narrowed options down to two specific site locations; the area southeast of the Cox Creek DMCF was determined to be the most ideal site. Sampling was conducted to determine how much sand was present and its location relative to the surface. The identified location has sand close to the surface and, relative to other areas, the sand layer is quite thick.

The permitting process for the second pilot project began in early 2023, at which time resource agencies raised questions and concerns regarding the project and the site selection process. In mid-2023, communities raised additional concerns about what the project was and the project's location. The project has now been paused to reconvene the BEWG in addition to conducting community outreach to create an inclusive and collaborative process and to determine the best process forward. Ms. Price asked what concerns were raised by the community. Ms. Miller stated that there were some concerns regarding noise and light, as well as some misunderstanding about the DMMP. Ms. Gilde added that there was also an incorrect impression that the project would be occurring in the immediate future. Mr. Watson noted that the presentation at the Joint Evaluation Committee Meeting showed an area of 4 mcy as a maximum area and multiple pilots within the area, which is different than what is currently presented. Ms. Miller stated that there should have been better communication with the Joint Evaluation Committee surrounding this detail. MPA will share a list of concerns expressed by the Joint Evaluation Committee with the BEWG.

Mr. Lindquist asked if CAD meets the definition of IR or if CAD is closer to open water placement. Ms. Miller replied that there are IR components of a CAD project, but they are separate programs. Mr. Wallach stated that the reason it is not defined as open water disposal is because it is confined, and if it were not confined it would be labeled open water. Mr. Reemts stated that the first pilot was necessary to demonstrate that it was confined. Mr. Van Ryswick noted that it is not entirely confined if the material is not sealed, as shown by the material loss in the pilot project. Mr. Lindquist stated that there may be a lack of consistency in the intent of banning open water placement in Maryland and the goals of the CAD project.

Mr. Halka explained that before open water placement was banned in Maryland, hydraulic pumping was used to move material through pipes with high water content and placed in low areas of the Bay. However, due to water velocities a lot of the material was lost. Open water placement was not confined and would return to the channels. Mr. Halka added that CAD is not a new concept

developed by MPA as it has been used in multiple locations around the United States and in Europe. In those instances, they placed contaminated material into CAD cells, and then those cells were capped with cleaner material. Mr. Lindquist noted that the community is concerned about what will be placed in the cells and if the material is safe. Mr. Halka stated that the available evidence indicates that the source of the material dredged from the lower portion of the Patapsco River is from the Chesapeake Bay, and, while there should always be careful consideration of the potential for contamination, this dredging should not be considered the legacy of industrialization of Baltimore. Ms. Mentzer stated that the Baltimore Harbor channels dredged material tested as a part of the IR program is consistently within MDE Soil and Fill Category 2, which is safe for commercial applications.

Mr. Limpert stated that legislation in 2001 gave MDE approval to determine what is considered confined. Mr. Limpert added that if approved by MDE, confined material from within the Baltimore Harbor could go outside the Rock Point/North Point line. Ms. Miller stated that, at this point, MPA does not plan to consider constructing a CAD cell outside of the Baltimore Harbor area.

Ms. Gilde stated that there will be a BEWG subgroup that will focus on discussing CAD, its importance and need, conduct an in-depth review of results from the initial pilot project and from the second pilot project site selection process, and then provide input on the site selection for the second pilot project. Ms. Gilde asked the group for feedback and additional subcommittee goals.

Mr. Barranco suggested that the subgroup should focus on providing a benefit evaluation to include the potential value of CAD. For example, one benefit of CAD is that it aids in the control of the oxidation process of dredged material, which can be a challenge during the dewatering process.

Ms. Gilde stated that the subgroup list has been provided to the BEWG for comments, edits, and additions, and additional membership suggestions. Ms. Wainger asked if it is beneficial to expand beyond the DMMP Citizens Advisory Committee to obtain additional citizen input. Ms. Gilde stated that there is currently a process being developed outside of the DMMP to gather feedback and inform and educate communities closest to the site location that was proposed. Ms. Wainger suggested that it may be beneficial to include a social scientist to help review the feedback from the community to ensure there is proper consideration of the concerns.

Ms. Gilde reviewed the draft mission statement for the 2024 BEWG, to advise the MPA and the DMMP partners on environmental issues related to dredged material placement. The overall goals include updating membership and reconvening the BEWG to assess dredged material management options, including CAD; review and provide feedback on DMMP projects, associated regulatory processes, and any potential environmental impacts; and gather input and provide guidance on the second CAD pilot project. Ms. Gilde reviewed the full proposed schedule for the subgroup and BEWG meetings, which would occur throughout the next six months. Mr. Halka stated that it would be useful to include social issues in addition to the environmental components.

Mr. Vanderbilt highlighted that the language used in the goals related to environmental impacts can often be viewed as only negative. Mr. Vanderbilt noted that it is important to understand the

positives that come out of projects and programs and ensuring the goals reflect that the evaluation is not only determining the downsides.

Ms. Gilde asked that BEWG members provide feedback on the BEWG mission statement document and member list by January 19th. MPA will distribute the draft BEWG mission statement document for review. The BEWG will provide their availability for the CAD Subgroup meetings and next full BEWG meeting. MPA will share the CAD site selection geotechnical report and other data with the BEWG.

7.0 Open Discussion

Ms. Lauren Mentzer, MES

No additional comments were shared for open discussion. MPA will distribute the presentation to the BEWG members.

8.0 Adjournment

Ms. Lauren Mentzer, MES