

FINAL DRAFT
SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM
INNOVATIVE REUSE COMMITTEE MEETING

February 26, 2019, 5:30 PM
2200 Broening Highway
Baltimore, Maryland 21224

Attendees:

Innovative Reuse Committee (IRC) Members:

Anne Arundel County Department of Public Works (DPW): Chris Phipps

Baltimore County Department of Environmental Protection and Sustainability: David Riter

Baltimore Development Corporation: Patrick Terranova

Baltimore Office of Sustainability: Bruna Attila

Chesapeake Bay Foundation: Doug Myers

Maryland Department of Natural Resources (DNR): Paul Petzrick

Northeast Maryland Waste Disposal Authority (NMWDA): Andrew Kays

Stancills, Inc: Chris Siciliano

Turner Station Conservation Teams (TSCT): Larry Bannerman

IRC Support Staff and Observers:

Facilitator: Steve Pattison

DNR: Jackie Specht

Maryland Department of Transportation Maryland Port Administration (MDOT MPA): Sergio Adantor, Chris Correale, Bertrand Djiki, Katrina Jones, Kristen Fidler, Kristen Keene, Holly Miller, Gannon Price

Maryland Department of Transportation (MDOT): Eddie Lukemire

Maryland Environmental Service (MES): Jeff Halka, Dallas Henson, Benjamin Langer

Northgate Environmental Management (NGEM): Steve Bedosky

Pennoni Associates: Steve Donahue

Terracon: Eric Rehwoldt

Tradepoint Atlantic: Peter Haid

University of Maryland Center of Environmental Science (UMCES): Lisa Wainger

Action Items:

No action items to report.

Welcome & Introductions

Steve Pattison, Facilitator

Mr. Pattison welcomed the meeting attendees and the attendees introduced themselves.

Ms. Correale announced her retirement as Director of Harbor Development at Maryland Department of Transportation Maryland Port Administration (MDOT MPA) as of March 29, 2019 and introduced Ms. Kristen Fidler as her successor.

Mr. Pattison requested comments on the November 27, 2018 Innovative Reuse Committee (IRC) meeting summary. The Committee did not raise any comments and they accepted the November summary as final.

Innovative Reuse and Beneficial Use Progress Report

Kristen Keene, MDOT MPA

Ms. Keene provided updates to the Committee regarding MDOT MPA's innovative reuse program including demonstration projects, recent meetings attended by MDOT MPA, and studies being conducted by the University of Maryland (UMD) in support of the innovative reuse program.

Innovative Reuse Demonstration Projects

Ms. Keene stated that approximately 10,500 cubic yards (cy) of dredged material was excavated (reclaimed), from the Cox Creek dredged material containment facility (DMCF), dewatered, stockpiled and transported off-site for use in two demonstration projects in coordination with Maryland Department of the Environment (MDE). The demonstration projects utilized dried dredged material as engineered fill at Hawkins Point and as alternative daily cover at the Quarantine Road Landfill.

Mr. Haid inquired about the drying process of the material used in the Quarantine Road Landfill demonstration project. Ms. Keene responded that the material was dried in windrows using 8-inch lifts. The material was turned and stockpiled.

Ms. Keene informed the Committee that the sediment samples collected at the end of the test nursery study are currently being comparatively analyzed to the sediment samples collected at the onset of the project. The grass samples collected from the test nursery study are being evaluated for nutrient and metal uptake. Ms. Keene stated that the analyzed results will be discussed at the May 28, 2019 IRC meeting.

Recent Meetings

Sustainable Materials Management Maryland (SM³)

Ms. Keene reminded the Committee of Governor Larry Hogan's June 2017 Waste Reduction and Resource Recovery Executive Order (EO) 01.01.2017.13, which recognizes dredged material as a resource with vast opportunities for reuse, calls on state agencies to be leaders in the reuse of dredged material where economically reasonable to do so, and prompted the creation of Sustainable Materials Management Maryland (SM³) workgroup. MDOT MPA and Maryland Environmental Service (MES) co-hosted the December 14, 2018 SM³ meeting to discuss dredged material and possible collaborations with other waste streams in Maryland. The three key accomplishments from this meeting were: introducing dredged material into the conversation in the context of waste stream recovery efforts, which brought awareness to the SM³ committee regarding dredged material availability and its reuse potential; allowing participants to recognize dredged material as one component of the larger solution to improve sustainable materials management in Maryland; and generating significant interest in dredged material blending demonstration projects in collaboration with MDOT MPA. Ms. Keene elaborated that MDOT MPA welcomed Mr. Jason Ziss of Kurtz Bros. as a guest speaker to present their successful waste stream recovery operations in Cleveland, Ohio, and SM³ facilitators presented the concept of a Waste Reduction and Resource Recovery (WR³) Innovation Center.

HB 171 Organics Study Workgroup

Ms. Keene informed the Committee that MDOT MPA presented on the Port's Innovative Reuse Program at the December 3, 2018 House Bill (HB) 171 Organics Study Workgroup meeting. The Workgroup discussed that dredged material should be included in the recommendations for blending with other waste streams to limit the need for disposal in a containment facility. The Workgroup also expressed interest in blending dredged material with other waste products, such as compost, poultry litter, and anaerobic digestate. Mr. Myers stated that the HB 171 Organics Study Workgroup report is expected to be published in July 2019.

Beneficial Use Workshop

Ms. Keene stated that MDOT MPA sponsored a University of Maryland Center for Environmental Science (UMCES) led workshop on January 23 and 24, 2019 to discuss the beneficial use of dredged material to protect low-lying areas of the Chesapeake Bay. The workshop focused on areas of vulnerability in the Bay, dredging and placement activity in the Bay, the state technology in using dredged material to protect low-lying areas, and understanding impacts, limitations, and opportunities for restoration. Workshop attendees generated multiple recommendations which UMCES will assemble into a report and present at the May 28, 2019 IRC meeting.

UMD Studies

Ms. Keene discussed the purpose and preliminary findings of the University of Maryland (UMD)'s Topsoil and Embankment Fill dredged material blending studies.

Topsoil Study

The Topsoil study aimed to develop a dredged material blend with properties that meet the MDOT State Highway Administration (SHA)'s 920.01.02 Furnished Topsoil Specification, evaluate leaching characteristics, and determine the geotechnical stability of the dredged material blend. The blending additives consisted of gypsum, lime, and compost. The preliminary results indicate that dredged material meets MDOT SHA's 920.01.02 Furnished Topsoil Specification for pH, particle size distribution, and organic matter; however, the soluble salt content exceeds the specification parameters. Additionally, the acid volatile sulfides (AVS) levels were below detection limits, which indicates a low potential for further pH changes in the soil and that a pH buffering agent was not needed. The final report is expected to be completed in June 2019 and can be presented and/or shared with the Committee.

Embankment Study

The Embankment Fill study explored the use of dredged material as potential highway embankment material and was conducted by amending the dredged material with quarry by-products. A geotechnical analysis was coupled with an environmental assessment to ensure satisfactory performance of the dredged material in structural fills. Preliminary results indicate that compaction and shear strength properties of the dredged material improved upon blending the material with quarry by-products and concentrations of all metals released during the batch leach tests from the dredged material/quarry by-product blend were below Maryland's Surface Water Quality limits. UMD is currently performing additional testing to evaluate the leachate potential of the dredged material/quarry by-products in the vadose zone and groundwater. The final report is expected to be completed by Spring 2019.

Mr. Myers asked if the dredged material used in the Topsoil study was collected directly from the DMCF. Ms. Henson responded that the dredged material used in the Topsoil study was collected from a one-year-old stockpile. Mr. Haid asked if MDOT MPA has conducted a study to compare the soluble salt content of dredged material from the Baltimore Harbor versus the Chesapeake Bay. Ms. Keene responded that MDOT MPA has not conducted such a study, but expects that material collected from the Chesapeake Bay channel would have a higher soluble salt content compared to the Baltimore Harbor due to the geographic location of the channel segments. Mr. Myers stated that Chesapeake Bay Foundation (CBF) has an oyster reef at Ft. Carroll near the Key bridge which is doing well. It is suspected that the success of the oyster reef is due in part to its proximity to the navigation channel, which may be contributing to higher salinity in the area. Mr. Halka added that "soluble salts" consist of more than sodium chloride.

Fleming Park Beneficial Use Project

Larry Bannerman, TSCT
Doug Myers, CBF

Mr. Pattison stated that the conceptual design of the Fleming Park project was developed through the Design with Dredge (DwD) Partnership between MDOT MPA and Mahan Rykiel Associates (MRA) in 2017. Mr. Bannerman, Turner Station Conservation Teams (TSCT), and Mr. Myers provided an update regarding the Fleming Park project.

Funding Solicitation & Grants

In 2017, MRA DwD interns had a site tour of Fleming Park along with MDOT MPA and MES to develop conceptual designs for a beneficial use of dredged material demonstration project at Fleming Park. Mr. Bannerman discussed the efforts made by TSCT and their partner, CBF, to secure funding for the Fleming Park project. Thus far, TSCT has met with politicians, senators, Baltimore County officials including Mr. John Olszewski Jr. (Baltimore County Executive) and Mr. Barry Williams (Baltimore County Department of Parks and Recreation, which is the agency that owns the Fleming Park property), Tradepoint Atlantic, and Honeywell. The team has meetings scheduled in the following weeks with Baltimore Gas and Electric (BGE) and Ports America. To date, TSCT has received \$30,000 for the Fleming Park project from an anonymous donor.

Ms. Correale asked if the elected officials on the federal level have been briefed on this project. Mr. Myers responded that Senator Ben Cardin has been briefed.

Mr. Myers stated that CBF submitted a \$200,000 pre-proposal to the National Fish and Wildlife Foundation (NFWF)'s Resilient Communities Program; if awarded, the funding will be used to begin construction of the upland portion of the project and to complete the feasibility study and project designs. Mr. Myers requested an endorsement letter from the Committee and/or funding/in-kind services from their respective organizations. Mr. Myers added that the memorandum of understanding (MOU) between TSCT, CBF, and MRA could be amended to include other Committee members' organizations as project partners. Ms. Fidler inquired as to when the NFWF grant will be awarded. Mr. Myers responded that CBF expects NFWF to open the formal proposal submission in early April with award in August. Ms. Specht informed the Committee that the 2019 DNR Community Resilience Grant Program will be accepting proposals by April 30, 2019. Ms. Fidler asked if the NFWF grant requires matching funds. Mr. Myers responded in the affirmative and added that an in-kind match has been obtained. Ms. Fidler inquired as to the total amount of funding that could be awarded through the 2019 DNR Community Resilience Grant Program. Ms. Specht responded that the amount of funding is between \$50,000 and \$60,000 for the design portion and \$100,000 for the construction portion. Ms. Specht added that DNR Community Resilience Grant Program funding would only support the marsh creation portion of the Fleming Park project. Mr. Myers stated that TSCT and CBF are aware that the Fleming Park project will need separate funding sources for each component of the project as well as separate permits.

Mr. Phipps asked if MDE would characterize wetland creation as a shoreline stabilization project and if the project would be eligible for impervious area credits; if so, could funding be obtained from Baltimore County. Mr. Myers responded that TSCT and CBF have been in coordination with Baltimore County to access the \$700,000 set-aside for park projects. Baltimore County was originally planning on constructing rip-rap to stabilize shorelines, but TSCT and CBF are attempting to utilize this funding for reef balls and to repurpose the submerged bulkhead to act as the anchor point for dredged material containment and the foundation for the boardwalk.

Ms. Fidler asked if TSCT and CBF will be reapplying to the Water Resources Development Act (WRDA) of 2016 Section 1122 - Beneficial Use of Dredged Material Pilot Program, as WRDA 2018 added additional projects to the pilot program. Mr. Myers responded in the affirmative. Ms. Correale stated that MDOT MPA recently reviewed the new implementation guidance for Section 1122 and requested that the project criteria be more defined. The new criteria are expected to be published within 1 to 3 months, after which the request for proposals will be advertised. Mr. Myers informed the Committee that CBF discovered that Section 1122 is looking for projects that will use multiple cycles of dredged material.

Permitting

Mr. Myers stated that, through coordination with MDE during the feasibility portion of the project, TSCT and CBF began development of a sediment sampling plan. The sediment sampling is part of MDE's risk assessment process that will be performed for Fleming Park prior to MDE permitting approval. The Fleming Park site sediment data will be compared with Cox Creek sediment data to determine if the use of Cox Creek dredged material at Fleming Park would be approved by MDE. Once this step is completed, the feasibility of the Fleming Park project will be discussed. TSCT and CBF are expecting to submit permitting documents to MDE and the United States Army Corps of Engineers (USACE) before December 31, 2019. Mr. Myers added that MDOT MPA has been extremely helpful in providing guidance on permitting processes, material testing requirements, and possible funding through various USACE authority programs.

Community Outreach

Mr. Myers stated that TSCT and CBF have been involved with the Turner Station Community to disseminate information regarding the Fleming Park project and to acquire the community's views and apprehensions regarding the project. Mr. Myers informed the Committee that TSCT and CBF will be hosting a Fleming Park Project Community Outreach meeting at Sollers Point Multi-Purpose Center on March 11, 2019 between 6:00 and 8:00 p.m. to discuss the project with the community and to learn the community's thoughts regarding the project. These groups will be able to interact with a three-dimensional (3-D) model of the project to decide how they would arrange the different components of the project. Mr. Myers stated that the 3-D model is currently under construction.

Project Design

Mr. Myers discussed the components of the project, stating that the Fleming Park project will include a "Health Path", construction of a boardwalk, *Phragmites* control, and using Cox Creek dredged material to raise the existing wetland elevation to create inter-tidal marsh habitat. Mr. Bannerman stated that the "Health Path" will pass through the Turner Station Community, travel along the proposed boardwalk positioned along the Fleming Park shoreline and culminate at the boardwalk's end; along the health path will be signage discussing the history of the Turner Station Community and Fleming Park starting in 1888. Mr. Myers stated that the inter-tidal marsh will be located along the Fleming Park shoreline and partially underneath the proposed boardwalk. Mr. Phipps inquired as to the total quantity of dredged material that will be used. Mr. Myers responded that the quantity of dredged material will be determined based on design factors, including the extent of the wetland and the decision to construct an upland berm for potential marsh migration due to sea-level rise, as well as the bathymetry data of the area; MRA initially estimated that approximately 10,000+cy could be used.

Innovative and Beneficial Use Strategy

Kristen Fidler, MDOT MPA

Mr. Pattison reminded the Committee of the Updated Strategy for Innovative and Beneficial Use of Dredged Material (Strategy) in Maryland's Dredged Material Management Program (DMMP), which was approved by the DMMP Executive Committee on June 4, 2014 and discussed in the Open Discussion portion of the November 27, 2018 IRC meeting by Mr. Matt Rowe. Ms. Fidler thanked Mr. Rowe, in his absence, for reminding the Committee of the Strategy and how it has been effective as a roadmap for MDOT MPA's progress over the past five years.

Ms. Fidler provided an overview and update of the Strategy, discussed progress made to date, and what MDOT MPA has yet to accomplish. Ms. Fidler stated that the Strategy lays out nine strategic action items, a short term goal to "implement several strategically selected small to medium quantity innovative and beneficial use projects with Harbor material to test and ameliorate regulatory, financial, and public acceptance limitations that currently exist . . . within the next two to five years", and a long term goal to "make innovative and beneficial use of dredged material to recover or save capacity in DMCFs an implemented component of the DMMP in Maryland, in order to promote the long-term viability of the Port of Baltimore" by "recycling at least 500,000 cy annually."

Ms. Fidler reviewed each of the nine strategic action items, highlighted progress to date, and the items that MDOT MPA are working to accomplish.

- 1) Prepare for and engage MDE and the Maryland Department of Natural Resources (DNR) as well as other relevant permitting agencies in discussions about reevaluating regulatory policy for dredged material, with the goal of facilitating greater innovative and beneficial uses of Harbor material in appropriate projects.
 - Ms. Fidler stated that the Interagency Regulatory Workgroup (Workgroup) convened in 2015 to complete this action item and issued the final report in 2017. One major accomplishment of the Workgroup was the release of the MDE Innovative Use and Beneficial Use of Dredged Material Guidance Document and Technical Screening Criteria.
 - Continuing on the progress of the Workgroup, MDE is working to develop a Certificate of Suitability which will be MDE's official approval process for innovative reuse projects and will assist sites receiving material with liability issues.
 - Once the Certificate of Suitability has been established and implemented, the Workgroup may reevaluate regulatory policies that pertain to dredged material and consider drafting a new statewide policy or legislation, as appropriate, with the goal of facilitating greater innovative and beneficial uses of Harbor material in appropriate projects.
- 2) Collaborate on plans to expand Cox Creek.
 - Ms. Fidler stated that MDOT MPA is currently working on optimizing capacity through the expansion of the Cox Creek facility. In addition to the expansion, MDOT MPA is working to effectively utilize the limited on-site space to dry and stockpile material for innovative reuse activities.
- 3) Review sediment quality data for harbor maintenance material to identify potential channel locations of "better" quality material that would be more appropriate for innovative or beneficial use.
 - Ms. Fidler stated that MDOT MPA has expanded their robust database using information obtained through the confined aquatic disposal (CAD) pilot project and Maryland Geological Survey (MGS)'s extensive sediment characterization of Harbor channel dredged material. The majority of Cox Creek material has been classified as Category 2 material, according to the MDE fill material guidelines, and primarily consists of fine silts and clays.

- To further assist with the characterization of material entering the Cox Creek DMCF, MDOT MPA has developed a new application process with screening criteria and technical limits for material seeking placement at the Cox Creek or Masonville DMCF.
- 4) Implement as many short-term demonstration projects as possible.
- Ms. Fidler reiterated Ms. Keene's update regarding the 10,500cy of material that has been used innovatively in demonstration projects.
 - Ms. Fidler informed the Committee of additional goals to be performed for this action item. The first includes monitoring and collecting data from the Quarantine Road Landfill and Hawkins Point demonstration projects; this will enable MDOT MPA to determine if the demonstration projects were successful. Second, design and implement a medium-scale brownfield reclamation project. Third, coordinate with MDOT SHA to develop a topsoil and/or embankment fill pilot project. Fourth, perform a beneficial use demonstration project using Harbor channel dredged material within the Baltimore Harbor. Lastly, develop a project with a clear focus on climate change resiliency.
- 5) Develop an analysis of the economic value of regained placement capacity as well as the value of the environmental benefits of innovatively or beneficially using dredged material in order to create more realistic cost/benefit analysis.
- Ms. Fidler reminded the Committee of Ms. Wainger and Ms. Elizabeth Price's presentation at the May 23, 2017 IRC meeting regarding the UMCES model to determine the value of reclaimed capacity at Cox Creek DMCF depending on the innovative reuse technology utilized. This model can be used moving forward to assess various innovative reuse scenarios by plugging in the different volumes, costs, etc.
 - Ms. Fidler stated that the economic analysis of the environmental benefits associated with innovative reuse is underway.
- 6) Explore potential alternative means of funding and financing for IR and ensure that incentives are considered.
- Progress has been made towards exploring alternative means of funding. Specifically, the submittal of several Maryland project proposals to WRDA 2016 Section 1122, although no Maryland project was selected. Additionally, the IRC has appointed a new member from the Department of Commerce.
 - To further this action item, MDOT MPA will continue to review and consider a potential business plan(s) for the implementation of a long-term, broad-scale innovative reuse program as well as continue to review and research alternative funding and grant opportunities for MDOT MPA and potential partners.
- 7) Investigate opportunities designed to foster research and innovation.
- Ms. Fidler stated that the Fleming Park project is a perfect example of this action item. Additional examples of this action item include the Dwd Partnership, UMD studies, and Morgan State University research.
 - Ms. Fidler added that an additional item to explore is the Maryland Industrial Partnerships (MIPs) Program through UMD, which was included in the updated Strategy and is still relevant today.
- 8) Develop a contracting strategy that can be used to implement targeted innovative or beneficial use projects. To address MDOT MPA's inability to provide an absolute guarantee of dredged material quantities over time, identify qualified or conditional guarantees, or arrangements in lieu of a guarantee, that might be possible.
- Ms. Fidler stated that this action item remains under review and consideration as MDOT MPA is faced with constraints regarding long-term, large-volume commitments due to their relationship with the USACE and maintenance dredging projects being dependent upon congressional authorization/appropriations for funding.

- 9) Continue to engage in the current public-private partnership project (P3) process as a means for effecting capacity recovery in the Cox Creek DMCF and to seek additional opportunities for P3s in the operation and management of DMCFs as well as the innovative and beneficial use of dredged material.
- Ms. Fidler stated that this action item remains under review and consideration.

Ms. Fidler described key takeaways regarding the Strategy for the Committee. The first was the refinement of the long-term goal. Ms. Fidler explained that 500,000cy/year of recovered capacity in the DMCF equates to approximately 250,000cy/year of dewatered sediment due to volume reduction during the drying process. Second, the significant and diverse private sector interest demonstrates that a variety and combination of solutions for innovative reuse will most successfully enable MDOT MPA to meet or exceed the long-term goal. Third, Ms. Fidler explained that successful large-volume long-term innovative reuse projects require sufficient space for processing and distribution. To allow for this, MDOT MPA is actively working to acquire additional property adjacent to Cox Creek. Lastly, the Strategy continues to serve as the roadmap to the future and will be revised either once MDOT MPA has finished implementing the 2014 action items or when deemed necessary.

Mr. Myers asked if a cost prohibitive radius for dredged material hauling has been generated. Ms. Fidler responded that UMCES calculated that the maximum feasible hauling radius for dried dredged material is approximately 30 – 50 miles due to costs. Mr. Terranova asked if the Strategy had been updated previously. Ms. Fidler responded that the Strategy is in its first iteration and stated that the DMMP Committees hold MDOT MPA accountable for the completion of the Strategy action items. Mr. Myers recommended inserting hyperlinks for the various completed reports into the Strategy status overview document. *MDOT MPA will implement this suggestion.*

Group Discussion

Poplar Island Expansion

Ms. Correale stated that the Poplar Island expansion is proceeding extremely well. The expansion is estimated to increase the dredged material capacity of the existing Poplar Island site by approximately 28 million cubic yards (mcy).

Mid-Bay

Ms. Correale stated that the Mid-Chesapeake Bay Island Restoration Project (Mid-Bay) has received 85% of the funding necessary to begin the design portion of the project. The estimated dredged material capacity for Mid-Bay is between 90 and 95 mcy.

Conowingo

Mr. Petzrick informed the Committee that the Conowingo dredging contract was awarded on February 25, 2019 and requested that the Committee be aware of the beneficial end use that the awarded contractor develops.

Upcoming Meetings

Mr. Pattison informed the Committee that the next IRC meeting will be held on May 28, 2019.

Meeting adjourned at 7:00pm