

**SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM  
INNOVATIVE REUSE COMMITTEE MEETING  
October 17, 2023, 5:30 PM In Person and Virtual Meeting**

***Attendees:***

*Anchor QEA:* Mindy Strevig\*  
*Baltimore County Department of Environmental Protection & Sustainability:* David Riter  
*Baltimore Port Alliance:* Rupert Denney  
*Chesapeake Bay Foundation:* Doug Myers\*  
*Cox Creek COC Chair & Chestnut Hill Cove HOA:* Gary Gakenheimer  
*EA Engineering:* Frank Barranco\*  
*Ecologix:* Steve Pattison  
*Greenland Beach Community:* Russell Cardozo  
*Maryland Department of the Environment (MDE):* Matt Rowe\*  
*Maryland Department of Natural Resources:* Paul Petzrick\*, Maggie Cavey\*  
*Maryland Environmental Service (MES):* Dallas Henson, Christine Offerman\*  
*Maryland Port Administration (MPA):* Danielle Fisher, Rachael Gilde\*, Katrina Jones, Holly Miller, Joseph Ross, Darren Swift  
*Northeast Maryland Waste Disposal Authority (NMWDA):* Andrew Kays\*  
*Northgate Environmental Management (NGEM):* Sam Merrill\*  
*RK&K:* Sari Rothrock  
*Remline:* Michelle Puszcz\*  
*Seapath Group:* Akshay Adaikalavan\*  
*Stoney Beach Community:* John Garofolo  
*University of Maryland Center for Environmental Science:* Elizabeth Price\*

\*Denotes attendees that participated virtually

**1.0 Convene and Welcome**

**Ms. Sari Rothrock, RK&K**

Ms. Rothrock welcomed attendees and called the meeting to order. Ms. Rothrock led introductions, and invited attendees to state their involvement or interest in the Innovative Reuse Committee (IRC).

**2.0 Innovative Reuse & Beneficial Use Program**

**Darren Swift, MPA**

Mr. Swift started his presentation by providing an overview of the purpose of the IRC, which is to provide advice to the Maryland Port Administration (MPA) on the development of a strategy for reusing dredged material from the Baltimore Harbor. The goal is to create long-term, sustainable, innovative reuse and beneficial use (IRBU) programs and projects to address capacity recovery.

Mr. Swift provided updates on project requests for IRBU material, including the Stoney Beach Community Restoration Project and the Race Street Project. The Stoney Beach Community Restoration Project is requesting 1,200 cubic yards (cy) of sandy material for beach restoration. Some sandy material is currently located at MPA's Hawkins Point site. The sampling and analysis plan (SAP) has been submitted to MDE for review. Once reviewed, any comments will be addressed, and then material sampling and analysis can occur. The project is slated to start in March 2024. The Race Street Project, located at the old Honeywell site near I-95 and I-395, is a wetland revegetation project and

needs 500 cy of material. MDE approved the SAP for this project and sampling has occurred. The laboratory results are currently pending. Mr. Swift noted that there have been delays in receiving laboratory test results, due to increased demand.

Mr. Swift stated MPA has re-engaged with Baltimore City and the talks look promising for a possible long-term memorandum of understanding (MOU) to use dredged material as daily cover at the Quarantine Road Landfill. Baltimore City will explore their permit to determine the necessary steps for providing dredged material as alternative cover.

Mr. Swift gave an update on the [IRBU Web Tool](#), alerting the committee that the final presentations from Research and Development contractors for completed projects are available for download on the site. A frequently asked questions tab has been added and requests for IRBU material should be made through the form on the Web Tool.

Mr. Swift next presented on progress made on each of the IRC Goals that were established at the February 2023 IRC meeting.

- IRC Goal #1: *Coordinate briefings with the other Maryland Department of Transportation (MDOT) Modals to provide information on dredged material reuse opportunities.* Updates are regularly provided to the State Highway Administration (SHA) through the Recycled Materials Task Force. Updates are also provided to the MDOT Secretary's Office through the DMMP Management and Executive Committee meetings. This year, Mr. Swift presented to the Maryland Green Purchasing Committee which was created by the General Assembly and chaired by Maryland Department of General Services with the focus to encourage the use of recycled materials, including dredged material, through procurement specifications. Mr. Swift will continue to participate with the committee.
- IRC Goal #2: *Investigate the possibility of dredged material qualifying as a sustainable or recycled material.* Mr. Swift reiterated MPA's excitement for and participation in the Green Purchasing Committee related to this goal.
- IRC Goal #3: *Engage with DNR and Maryland Geological Survey to identify coastal resiliency opportunities.* MPA is participating in a regional sediment management plan workgroup hosted by DNR. MES and the United State Army Corps of Engineers also participate in the workgroup.
- IRC Goal #4: *Develop technical factsheets for past innovative reuse demonstrations.* Technical factsheets for past innovative reuse pilot projects are still in development. These projects include Quarantine Road Landfill, Ridgely's Cove, and the use of dredged material as engineered fill at Hawkins Point.
- IRC Goal #5: *Reengage with Baltimore City to use dredged material as alternative daily and intermediate cover on a long-term basis.* MPA and Baltimore City have initiated coordination. A meeting is scheduled for October 20, 2023 to review the specifics of a project MOU including costs and logistics.

- **IRC Goal #6:** *Pursue the development of the Cox Creek STAR Facility for IR activities.* A formal presentation is provided later in the agenda.

Mr. Swift asked the attendees for feedback relating to the vision and goals, as well as other topics the IRC should explore in the future.

Mr. Garofolo asked if there are barriers to implementing beneficial use projects across the Chesapeake Bay that can be resolved through legislation or funding. Mr. Swift responded that beneficial use projects require a regulatory process which can take some time. Before these projects can move forward, MDE must review items such as sampling and analysis plans as well as analytical results from sampling efforts. Mr. Swift also noted that a holistic investigation of Chesapeake Bay dredging and beneficial use projects is the aim of the DNR Regional Sediment Management Program given DNR efforts related to shallow draft and recreational dredging. As a follow up to the discussion, Ms. Cavey offered her contact information for questions and concerns as it relates to DNR beneficial use projects in the greater Chesapeake Bay.

Mr. Denney noted that the use of acronyms in MPA presentations can be difficult for nontechnical audiences. Mr. Garofolo recommended MPA to hold an educational event to inform potential end users of dredged material the regulatory process to receive approval from the regulatory agencies. He added that there is difficulty in understanding the reuse of dredged material process and the ability to access funding can restrict communities in implementing these projects. Mr. Swift stated that while MPA cannot provide funding for a community to pursue the process, MPA is available to support by ensuring all documentation for project consideration matches regulatory agencies requirements.

### **3.0 The Cox Creek STAR Facility**

**Darren Swift, MPA**

Mr. Swift provided a presentation introducing the Cox Creek Sediment Technology and Reuse (STAR) Facility. The property was purchased by MPA in December 2022 and is approximately 140 acres, of which 120 can be used for IR and maritime use. The property is adjacent to the Cox Creek Dredged Material Containment Facility (DMCF). The property has access to CSX rail, quick access to I-695 and I-95, and the possibility of maritime use in the future. Remediation work must be completed on the property before it can be fully developed, and remedial action plans will be submitted and implemented over the next ten years. Mr. Swift stated that the property is divided into five operable units: Upland, Settling Basins, Batch Attack Lagoon, Groundwater Containment System, and Waste Acid Neutralization Area. The Upland and Settling Basins have a combined acreage of 73 acres and will be the first areas to be remediated and open for IR activities. MPA would like to start large scale dewatering operations in the next two years depending on how much remediation work is needed. Mr. Swift stated that the short-term plans are to begin dewatering activities, using geotubes to dewater and create stockpile locations. Mr. Swift noted that MPA anticipates advertising a contract for private development to support IR activities in the next two years or sooner.

### **4.0 Research and Development Project Updates**

**Joe Ross, MPA**

Mr. Ross presented the results of the Research and Development (R&D) projects to date.

Belden Eco Products is a brick manufacturing company. As a part of the R&D project, dredged material was used to make a permeable brick paver product using a few different blends. Some blends incorporated fly ash and one blend in particular used 100% dredged material and was the best performing product and ultimately categorized for residential use. An abundance of information came from the project, and MPA was pleased to see dredged material used as a source for brick material.

The Northgate Environmental project developed concrete traffic barriers and modular shoreline protection structures. The modular shoreline protection structures were more successful than the concrete shoreline structures because traffic barriers need to obtain a high strength level, which is difficult to achieve.

CSI Environmental studied the feasibility of using dredged material to develop upland and shoreline berms from vegetated geotubes. The geotubes are currently placed at the BGE Spring Garden site in both the upland and shoreline areas and are being monitored.

The University of Maryland (UMD) proposed creating vegetative earth berms (VEBs) for storm protection from flooding, sea level rise, and high tides. To create the VEBs, UMD will combine dredged material, recycled concrete, gypsum, and compost in different ratios to determine the best mix. The mixes will be subjected to simulated rain events in a laboratory, where researchers will measure any chemical constituents released after the rain exposure (if any).

The Harford Industrial Minerals (HIM) project used the silts and clays of the dredged material to produce a lightweight aggregate (LWA). The findings show strength maxes out at 28 days. The lightweight aggregate could be used as a light/non-loadbearing concrete sidewalk.

The Fastrak Express project used dredged material to create re-engineered soil for sod. This project obtained a Category 1 (Residential Unrestricted Use) designation using a blend of 50 percent dredged material, 25 percent mushroom compost, and 25 percent sand.

Suscon Products is a sister company of HIM and used dredged material to make a concrete blend. Strength results were positive after 56 days. This product could be used for roadway and traffic structures. This product achieved a Category 2 (Non-Residential Restricted Use) designation and could be used in a commercial setting.

MPA has received three more proposals for R&D projects; following a review process, MPA anticipates the awarding of two of the three proposals. The RFP is now closed to new concept proposals.

Mr. Garofolo asked Mr. Ross to provide a grade for each of the research and development projects and how they compared to one another. Mr. Ross stated that each project has its own criteria for success

and that, as a result, the projects cannot be compared to one another. Moreover, as these are R&D projects, the lessons learned are equally valuable.

Mr. Myers asked about the potential application of the LWA for green roofs and whether there were any concerns for leaching under this application. Mr. Swift stated that LWA can be used in any way that traditional aggregates are used, including green roofs. Leachate testing was conducted on the LWA developed as a part of the study, and the material was designated as Category 1, which has an unrestricted use, and therefore would not have concerns for leaching.

Mr. Rowe asked if there is a decrease in carbon emissions using dredged material as a component of the R&D projects. Mr. Swift stated that lower greenhouse gases were associated with the brick project. Mr. Ross added that that the study found the material did not require as much heat during the firing process because the organics in the material helped with the firing curve.

### **5.0 FHWA Climate Challenge**

**Darren Swift, MPA**

Mr. Swift stated that MPA and University of Maryland applied for a Climate Challenge Grant, an opportunity to explore Life Cycle Analysis (LCA) and Environmental Product Declarations (EPD) for pavement materials. The grant would support work similar to that of UMD's R&D contract with the addition of LCA and EPD. The Federal Highway Administration (FHWA) was impressed with the uniqueness of the application and awarded the grant. FHWA will provide training and webinars for interested state Departments of Transportation to interact and share resources. The grant will run for two years, and the team just received the notice to proceed.

The team will be using dredged material from the Cox Creek DMCF and other recycled materials (including lime, quick lime, recycled concrete aggregate, gypsum, and compost) to conduct a constructability assessment of various blends. The constructability assessment will be done through mesocosm studies with small berms constructed with the dredged material and blends. The team will expose the berms to synthetic rainwater and then will investigate the resulting water quality. Recommendations will be provided on dredged material blends for use in vegetated earth berm applications based on geotechnical and environmental analysis and plant growth performance. The team will be conducting a thorough LCA to compare global warming potential, fossil depletion, and cumulative energy demand of earthen berms built with the dredged material and blends of recycled materials compared to control berms. LCAs provide a comprehensive approach for evaluating the total environmental burden of a product by examining all the inputs and outputs over the life cycle, from raw material production to end-of-life. The work for life cycle assessment will be performed under ISO 140404.

An EPD, which is used to communicate environmental impacts and quantify greenhouse gas emissions from materials and practices, will be performed under ISO 14025. This involves a third-party review before receiving a true EPD for using dredged material as a vegetative earth berm. Mr. Rowe asked whether the LCA will include analysis of thermal properties. Mr. Swift shared that the project is designed to determine whether water can pass through the berms and if vegetation can grow; thermal

properties are not included in the study. This effort will help advance the use of IR in state construction projects. The committee will be kept up to date on project progress.

### **6.0 DMMP Annual Meeting Planning**

**Rachael Gilde, MPA**

Ms. Gilde presented on the Dredged Material Management Program (DMMP) Annual Meeting. She reminded the IRC that the Annual Meeting aligns with the release of the DMMP Annual Report and provides an opportunity to celebrate the accomplishments of the year providing the space for reflection and goal setting for the upcoming year. Ms. Gilde shared a video recap of the 2022 Annual Meeting, which had a total of 133 attendees- 79 in-person and 54 virtual. It was held at MedStar Harbor Hospital and there was an exhibit hall for attendees to learn about projects.

Each year, the annual meeting includes a review of the DMMP Annual Report, a presentation about the State of the Port, a report of community collaboration, and a Keynote address. Ms. Gilde shared a list of all organizations, agencies, and companies that were represented at last year's annual meeting and asked for committee members to review and provide recommendations for new audiences that could be engaged. She also requested input on the meeting time and topics that might be of interest. Participants did not provide any additional recommendations for organizations to invite outside of the list provided or any preference for the time of meeting. Ms. Gilde stated that participants could also provide feedback on an emailed survey sent to committees and encouraged participants to provide input after the meeting. Ms. Gilde thanked those who provided input on the survey so far and invited attendees to email her at [rgilde@marylandports.com](mailto:rgilde@marylandports.com) with any additional input.

### **7.0 Roundtable and Announcements**

**Ms. Sari Rothrock**

Ms. Rothrock shared the Cox Creek Open House is on Saturday, October 26, 2023. Ms. Fisher added details about the Open House and invited members to come and tour the DMCF, learn more about the Swan Creek Nature Trail, and other projects.

The Annual Meeting is on Thursday, December 7<sup>th</sup> at MedStar Harbor Hospital.

Mr. Garofolo and Mr. Denney expressed an interest in incorporating more time for discussion in future IRC meetings. Mr. Swift thanked the committee for their input and stated that the team would work to build in more discussion time in the future.

### **8.0 Adjourn**

The next IRC meeting will be held February 27, 2024.