SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM
INNOVATIVE REUSE COMMITTEE (IRC) MEETING
May 12, 2026, 5:30 PM In-Person and Virtual Meeting

Attendees:
Anchor QEA: Billie-Jo Gauley*
Arcadis: Albert Buell, Amanda Kohler
Baltimore County Department of Environmental Protection and Sustainability: David Riter
Baltimore Port Alliance: Rupert Denney
BTS Bioenergy: Matt de la Houssaye
Carlexson Consulting: Mindy Strevig*
Cox Creek Citizens Oversight Committee: Gary Gakenheimer
CSI Enviro nmental, LLC: Craig Hebert, Craig Stevens
Community Members: Mofiyinfoluwa Ajao, Evelyn Hoon
EA Engineering, Science, and Technology: Frank Barranco, Kandice Sermon*
GEI Consultants: Nancy Straub*
Haley & Aldrich: Dan Hoa dley
Maryland Department of Natural Resources: Maggie Cavey
Maryland Environmental Service: Saeka Foreman, Dallas Henson, Madeline Morrell
Maryland Port Administration (MPA): Rachael Gilde, Katrina Jones, Kelvin Moulden, Joe Ross
Northeast Maryland Waste Disposal Authority: Andrew Kays
Northgate Environmental Management: Deni Chambers*, Jacob Lacy, Sam Merrill*
The Nature Conservancy: Austin Bamford
Remline: Michelle Puszcz*
Rummel, Klepper and Kahl (RK&K): Sari Rothrock, Ed Tinney
Sierra Club: Ben Cushing
Tradepoint Atlantic: Peter Haid
University of Maryland: Ahmet Aydilek, Allen Davis, Nazia Rahmat, Divyansh Raunek
University of Maryland Center for Environmental Science: Elizabeth Price*

*Denotes attendees who participated virtually

1.0 Welcome and Introductions **Sari Rothrock and Ed Tinney, RKK**

Ms. Rothrock and Mr. Tinney welcomed attendees and reviewed the meeting agenda. Mr. Tinney led introductions of in-person attendees, followed by Ms. Rothrock, who introduced the virtual attendees. Attendees were provided with the summary of the February 10, 2026, IRC meeting and were asked to review and provide comments by May 15, 2026.

2.0 Innovative Reuse Program Updates **Rachael Gilde, MPA**
Kelvin Moulden, MPA

Ms. Gilde provided a recap of the last IRC Committee meeting held in February 2026, which included a presentation by HarborRock on the outcomes of their Research & Development (R&D) project. The results of a small group breakout session designed for IRC attendees to provide MPA with recommendations on how the IRC should evolve, the best way to provide participants with IR/BU

news, and audiences to reach out to for advancing IR/BU were also summarized, noting that the items highlighted were not an inclusive list or ranked by priority or importance.

Table: Feedback Summary from February 2026 IRC Breakout Sessions

Question	Answer	Response Tally
How should the IRC evolve?	Shift to a beneficial use (BU) focus / R&D and pilot projects with a BU focus	17
	Provide updates on progress at the Cox Creek Sediment Technology and Reuse (STAR) facility	12
	Focus on consistency and quantity of material	7
What's the best way to provide attendees with IR/BU news?	Continue quarterly in-person meetings with interaction	10
	Recorded webinars	9
	Site visits	8
Which audiences and venues should MPA reach out to for advancing IR/BU?	Students/universities with programs in landscape architecture, engineering, or science	11
	Engineers/engineering community	9
	Communities	8

Ms. Gilde stated that MPA will review these results against the Innovative Reuse and Beneficial Use (IRBU) Strategy document, funding availability, and agency priorities. The goal is to have a Visioning Concept by the end of the year to illustrate how the IRC will continue to evolve.

Mr. Moulden provided updates on several initiatives:

- **Baltimore Harbor Capacity Planning:** Over a 20-year period, Baltimore Harbor is expected to require 23.1 million cubic yards (mcy) of capacity. The Masonville and Cox Creek Dredged Material Containment Facilities (DMCFs) are projected to provide 21.7 mcy of remaining capacity, including planned expansions, but excluding Innovative Reuse (IR) projects, resulting in an estimated capacity deficit of approximately 1.4 mcy.

  To support the rolling 20-year capacity plan, MPA is advancing toward large-scale capacity recovery over the next five years. Material recovery from the Cox Creek DMCF is projected to begin in fiscal year 2026 (FY26), with an initial annual goal of 50,000 cy, scaling up to 450,000 cy by FY30, when an IR facility is anticipated to be operational.

- **STAR Facility Remediation:** In 2022, MPA acquired the Cox Creek Sediment Technology and Reuse (STAR) Facility with the goal of supporting large-scale IR operations. The property is separated into five Operable Units (OUs), which are at varying stages in the remediation process. The Upland Area OU is planned to be the first completed, which is anticipated for 2026, and the area available for the construction of a large-scale IR facility . Remedial Action Plans (RAPs) have been approved by the Maryland Department of the Environment (MDE) for all five OUs.

- **Cox Creek STAR Facility – Request for Information (RFI):** In September 2025, MPA issued an RFI seeking input from the private sector on their ideas, capabilities, and the feasibility of implementing large-scale repurposing of dredged material from the Cox Creek DMCF at the STAR Facility. The RFI closed on December 19, 2025, and responses are currently being evaluated for technical and operational feasibility.

- **Capacity Recovery Efforts:**
    - **Cox Creek DMCF Waterside Cell:** MES on behalf of MPA has initiated the excavation of material from the Cox Creek DMCF waterside cell. The material is being layered on interior dike slopes to dewater in advance of stockpiling for potential IR projects. To date, 3,494 cy of material has been recovered from the DMCF.

      Additionally, sand identified during the Shallow Creek dredging project was diverted and stockpiled on site, resulting in an additional 608 cy of recovered material. In total, approximately 4,000 cy has been recovered toward the 50,000 goal.

      An RFP was issued in April 2026 to support continued recovery efforts with a focus on using the North/South Cross Dike to recover and dewater 50,000 cy of material. The project is currently in the procurement process, with a notice of intent to award recently issued.

    - **STAR Dewatering Field:** MPA is planning to establish a dewatering field directly adjacent to the Cox Creek DMCF on the Cox Creek STAR Facility property. The current plan is to use geotubes within the footprint of this area, which is approximately seven acres and capable of processing 15,000 cy per cycle, with each cycle having an estimated timeframe of four to six months. The geotubes will be hydraulically filled with material from the Cox Creek DMCF. Once the material can pass a paint filter test (a test conducted to determine if material contains free liquid), the material will be excavated from the geotubes and stockpiled for use.

    - **STAR Auxiliary Stockpiles:** MPA is currently working through the permitting process for three stockpile areas located on the Cox Creek STAR property. These stockpile areas will store dewatered material in advance of reuse. The total capacity of the stockpile areas will be approximately 32,000 cy.

    - **Geotube Pilot Project:** MPA is evaluating and comparing the dewatering performance of commercially available geotextile fabrics and flocculants. Phase I of this effort, which involved planning, is complete. Phase II involved a bench-scale treatability study to identify the most effective combination for dewatering DMCF material. Results of this phase are under review. Phase III, which is planned to involve a full-scale pilot study conducted along the Cox Creek north/south cross dike, is currently pending due to scheduling constraints from other ongoing initiatives.

- **Colgate Creek Dredging Project and Innovative Reuse Program:** Mr. Moulden stated that, as a part of the Colgate Creek dredging project, material was dredged, transported by barge to the Cox Creek DMCF, and hydraulically unloaded into geotubes. The geotubes have since been opened, and material is currently being removed from the geotubes and placed along DMCF slopes to aid in final dewatering in advance of hauling.

  One potential reuse opportunity under consideration for the Colgate Creek material is at the Masonville DMCF. The material would be stockpiled onsite and used as structural fill for dike-raising and/or as topsoil for the Mechanically Stabilized Earth (MSE) wall.

- **Potential BU Opportunity at Masonville Cove:** Dredged material from Cox Creek could potentially be used at the Masonville Cove campus for shoreline stabilization initiatives. This effort may benefit from access to Colgate Creek material once stockpiled at the Masonville Kurt Iron Slip. However, material from the Shallow Creek project may be more suitable due to its higher sand content.

Questions and answers with the IRC followed:

Speaker	Question	Speaker	Answer
Mr. Kays	Will dewatered and stockpiled material be tarped, or is a certain level of precipitation infiltration anticipated?	Mr. Moulden	There are no plans to tarp the material after it has been excavated from the geotubes and stockpiled.
Mr. Haid	Is the RFI intended for the treatment of dredge material once it has been stockpiled?	Mr. Moulden	The RFI was intended to solicit feedback from industry on their capabilities and the feasibility of large-scale IR operations and to assess MPA's potential to enter into agreements with private entities to advance these efforts. The RFP includes recovery of 50,000 cy of stockpiled dredged material in FY26, with an option to recover an additional 100,000 cy to support the FY27 goal.
Mr. Denney	How does the 50,000 cy recovery goal relate to the storage capacity of the identified stockpile and dewatering areas?	Mr. Moulden	The 50,000 cy represents the FY26 capacity recovery goal for the Cox Creek DMCF. While capacity recovery is a key focus, adequate storage space is needed to stage material until reuse opportunities are identified and implemented. Although the recovery target and available stockpile capacity are not directly correlated, both are necessary to support ongoing recovery efforts.
Mr. Kays	Is the Maryland Department of the Environment (MDE) requiring stabilization or erosion and sediment control (ESC) measures for the stockpiles?	Mr. Moulden	Yes, MDE is requiring ESC controls associated with the stockpiles.

Speaker	Question	Speaker	Answer
Mr. Denney	As part of the potential Masonville Cove BU project, how is material anticipated to be transported from the Cox Creek DMCF to the Masonville Kurt Iron Slip and subsequently to the project site within the Cove? Mr. Denney also emphasized the importance of community outreach and coordination if the project includes hauling activities, noting prior community feedback on similar projects in the area.	Mr. Moulden	The material will be hauled from the Cox Creek DMCF to the Masonville DMCF using on-road trucks. Once at Masonville, off-road trucks may be used to transport the material from the stockpile area to the project site, provided on-site road conditions can accommodate them.
Mr. Barranco	If the geotube pilot program is successful, is the intent to implement geotube use at a larger scale at the STAR Facility, and is this primarily due to the expedited rate at which geotubes can dewater the material?	Mr. Moulden	Yes, the plan is to use geotubes at the STAR property. The current geotube project was conducted within the Cox Creek upland area; however, that area will not be available in the near term. As a result, future dewatering efforts will need to efficiently utilize the available space at the STAR property.

3.0 R&D Outcomes: University of Maryland **Dr. Ahmet H. Aydilek, UMD**
Dr. Allen P. Davis, UMD

Dr. Aydilek presented the results of the University of Maryland R&D project, investigating the use of dredged material from the Baltimore Harbor in vegetated earthen berms (VEB). A VEB is a stormwater control structure built along a gentle slope to slow, intercept, and temporarily retain runoff while filtering pollutants. Teaming partners included MPA, Anchor QEA, and the University of Maryland Research Team.

The project was completed in phases between 2022 and 2026. Project phases included sourcing and analyzing dredged material, conducting screening and blend selection, simulating runoff in mesocosms, monitoring water quality and slope stability, and reporting findings. The work combined laboratory testing, modeling, and field-scale evaluation to assess the feasibility and performance of the proposed stormwater management approach.

Samples of dredged material were homogenized for classification prior to testing. The dredged material had low hydraulic conductivity, making permeability the main challenge for its use as VEB material. Sand, recycled glass aggregate (RGA), and wheat straw were evaluated as additives to improve drainage, with the study team finding that wheat straw enhanced pore formation, while a sand/RGA

blend increased permeability. Five blended material combinations were screened to identify the most effective mixes for further study and performance evaluation. Preliminary tests were completed to evaluate leaching, vegetation growth, and hydraulic performance. Results showed that blends containing 0.5% wheat straw improved salt flushing and supported vegetation growth comparable to topsoil, while combining 0.5% wheat straw with 5% sand or RGA provided the best overall hydraulic performance for the primary study.

After selecting the preferred blends, chemical testing showed salt levels around ±60 parts per million (ppm), below the Maryland Department of Transportation (MDOT) State Highway Administration (SHA) limit of 500 ppm, while arsenic remained below MDE Category 2 limits, and Toxicity Characteristic Leaching Procedure (TCLP) tests confirmed the material is non-hazardous. Hydraulic testing indicated that the dredged material with 0.5% wheat straw blend had the highest conductivity, reduced flow resistance, and the best water availability, supporting improved vegetation growth. Seepage and stability modeling were completed on a standardized berm. Several cycles of drying phase modeling were tested to understand seepage from storms and the subsequent drying process. Stability checks were also conducted. The drying phase analysis found that meeting the MDE three-day infiltration requirement depended primarily on achieving sufficient water retention and a topsoil-like subgrade hydraulic conductivity, rather than on blend type.

During testing, erosion was observed when water flowed over the surface. The team determined that denser vegetation, like Bermuda grass, would slow the flow. Water quality during storm events was monitored for metals, salt levels, and nutrients. During these tests, copper initially had higher readings downstream (partly influenced by incoming water), but copper levels generally decreased over time as conditions stabilized. Salinity was reduced with wheat straw. Phosphorus levels remained within acceptable limits for most samples, with little difference between the blends. Green coverage reached the 85% target by day 56 in the mesocosm study. The wheat straw and dredged material blend had a higher available water content, which is critical for a higher percentage of grass coverage.

During additional testing, the 0.5% wheat straw blend reached the vegetation target by day 63 compared to day 56 for the MDOT SHA topsoil control, with the small delay attributed to cooler greenhouse conditions rather than material performance, and both samples showed consistent copper levels in discharge, confirming reliable water quality results across tests. Laboratory testing confirmed the material is non-hazardous, with arsenic and all regulated parameters below Category 2 limits and TCLP results well within EPA thresholds. Although copper briefly exceeded aquatic limits during initial runoff events, it stabilized afterward, and the overall material properties support its suitability for VEB construction.

The dredged material with 0.5% wheat straw has strong potential for use as VEB material. Challenges include water flow overtopping the VEB, which can be alleviated by incorporating denser vegetation, and the MDE 3-day infiltration, which requires a subgrade with high hydraulic conductivity.

Questions and answers with the IRC followed:

Speaker	Question	Speaker	Answer
Mr. Haid	Has MDE provided guidance regarding copper leaching?	Dr. Davis	These findings have not yet been submitted to MDE. Stormwater typically contains elevated copper levels that stabilize following the initial flush.
Mr. Denney	Does wheat straw decompose over time, and what impact does this have on berm performance?	Dr. Aydilek	The wheat straw will eventually decompose, but the vegetative root material will promote hydraulic conductivity once established.
Mr. de la Houssaye	Was the impact on salinity significant?	Dr. Aydilek	This occurred as the amendment created additional pathways, facilitating salt flushing, consistent with findings from similar non-dredged material studies.
Mr. Denney	Can IR/BU material be used as subgrade material in a VEB?	Dr. Aydilek	This approach was evaluated, where IR/BU material would be used as a subgrade foundation and later excavated. While technically feasible, it would result in increased costs.
Mr. Denney	Could this approach be applied as a compensatory mitigation measure for development projects?	Mr. Moulden	Potentially, depending on the geotechnical conditions and the consistency of the material. The intended end use must also be considered in determining what processing or treatment may be required to produce a usable IR/BU material.
		Mr. Swift	The suitability of the material for use in mitigation applications would need to be evaluated by MDE.
Mr. Kays	How did the performance of the berms vary across seasons?	Dr. Davis	Variance by season was not noted as the study was conducted over 12 weeks. Following the initial flush, levels stabilized.

4.0 20th Anniversary of the IRC **Rachael Gilde, MPA**

Ms. Gilde noted that 2026 marks the 20th anniversary of the IRC. To commemorate the milestone, attendees were provided with a special dessert and participated in a group photo featuring an assortment of R&D products developed from dredged material over the years.

5.0 Cox Creek DMCF Site Tour

Attendees were invited to take a tour of the Cox Creek DMCF.

6.0 Announcements and Adjourn

Ms. Rothrock alerted the group that the next IRC meeting will be held on August 11, 2026.