



## Catching up with the Innovative Reuse Program

Tuesday, February 28, 2023

5:30 pm – 7:00 pm

### MEETING NOTES

**Meeting Objectives:** To provide program and personnel updates and a sneak peek of the May and October 2023 meetings.

**Welcome and Introductions** – Sari Rothrock, RK&K

Ms. Rothrock welcomed participants to the workshop and reviewed the agenda, list of attendees (Appendix A), and the ground rules.

**New Roles** – Joe Ross, Rachael Gilde, and Darren Swift, MDOT MPA

The new Innovative Reuse and Beneficial Use (IRBU) program managers and support staff introduced themselves and spoke about their work and vision for the IRC. Mr. Ross is the engineering project manager for IRBU. He also supports the Swan Creek Nature Trail and Masonville Cove Connector projects. Ms. Gilde is an environmental project manager who will be focusing on outreach with the Innovative Reuse program. She also works with the Mid-Bay Ecosystem Restoration Project, Masonville Cove Connector, and Masonville Cove Strategy. Mr. Swift is the chief of Innovative Reuse Strategy and Partnerships.

The team laid out the vision and goals for the IRC in 2023, which includes:

- Coordinating briefings with the other Transportation Business Units to provide information on dredged material reuse opportunities.
- Investigating the possibility of dredged material qualifying as a sustainable or recycled material
- Engaging with DNR and MD Geological Survey to identify coastal resiliency opportunities.
- Developing technical fact sheets for past innovative reuse demonstrations
- Re-engaging with Baltimore City to use dredged material as Alternative Daily Cover and intermediate cover on a long-term basis.
- Pursuing the development of the Tronox property for innovative reuse activities.

**Innovative Reuse/Beneficial Use-Related Updates**– Joe Ross, MDOT MPA

Mr. Ross spoke about progress in 2022 and updates for 2023. In June 2022 the IRC met and learned about work from Belden Eco Products and Northgate Environmental, two contractors who were provided with research and development grants to investigate commercial uses for dredged material. Mr. Ross talked about the outcome of that work and reviewed the list of other contractors undertaking research who will likely be presenting on their research and progress to the IRC in the next year.

*Comment:* Instead of only reaching out to large firms that could use dredged material, consider speaking with engineering firms in Baltimore. The larger firms rely on what their engineering consultants recommend.

*Response:* MDOT MPA will be engaging with the Maryland Transportation Builders and Materials Association, which consists of contractors, engineers, and developers that could help us work with



government agencies and let them know that dredged material is viable and can meet material specifications. There are benefits to working with dredged material. It's tested so frequently for its physical and chemical properties that recipients know exactly what they're getting. Additionally, Maryland Quality Initiative Conference is a great place to do outreach to the target audience.

*Question:* Is there enough demand for Northgate to move the dredged material out of the Dredged Material Containment Facilities (DMCF)s?

*Answer:* Scalability was a large part of their process. Whether the demand exists locally remains to be seen. Northgate's product is a need-based item.

*Comment:* Consider reaching out to biologists the same way you'll be reaching out to engineers to educate them about the existence and properties of dredged material. Many engineers are engaged in living shoreline and resilience projects, but they are overengineering solutions. Dredged material is much more appropriate than the big rocks that are being put out. There are some unanswered questions. For example, we need to know more about the pH of the material which would impact the ability of oyster spat to set on it, and its cost compared to similar volumes of high silica concrete that is currently being used for reef balls. Reach out to biologists so they can think about the use of dredged material in the coastal resiliency space.

*Question:* Were shells part of the dredged material that made up the structure?

*Answer:* Shells were potentially part of the mixture.

*Comment:* Maryland Department of the Environment (MDE) had a project behind Conowingo Dam and the pilot project reports are complete and include an analysis of physical and chemical properties and a market analysis. Northgate was the contractor. It exists on the MDE webpage.

*Question:* Will there be competing needs? The sediment from Conowingo Dam against the dredged material from the Port?

*Answer:* There is a lot of coal in the sediments behind Conowingo Dam. The material is very different. The coal would need to be segregated out. The material could potentially compete with Bay material in a reuse market, but it is hard to say.

*Follow-up:* Conowingo Dam is not MPA's material. MPA has already accomplished a lot of IRBU work with this committee, so we have a head start.

#### **Swan Creek Nature Trail- Joe Ross, MDOT MPA**

Mr. Ross provided information about the Swan Creek Nature Trail (SNCT). SNCT is located on the southern side of the Cox Creek DMCF. The trail will be roughly two miles long and will feature boardwalks, nature-based design, living classroom spaces, and interpretive signage. Grant funding was awarded from the Recreational Trails Program. Dredged material will be incorporated. There will be a pedestrian bridge with a rock swale. Construction will begin in Fall 2023.

#### **Geotubes at Cox Creek – Darren Swift, MDOT MPA**

Mr. Swift spoke about the geotube work and the project's goals. MPA is investigating dewatering activities on a larger scale using geotube technology. Geotubes use a fabric like what is typically used for erosion and sediment control. Geotubes capture solids and sediments and allow water to freely flow through the



fabric pores. They are not filter bags. They rely on polymers to separate solids to create water outflow. Mr. Swift further described the geotube filling procedure. With this project, MPA is learning if geotubes are a viable solution to dewater large quantities of dredged material in a reasonable amount of time; if the process is cost effective compared to other methods of dewatering; and, if this is a viable option, how much space would be needed to meet MPA goals.

**Cox Creek Expansion and Dike Raising Updates**– Bertrand Djiki, MDOT MPA

Mr. Djiki provided an update about the Cox Creek Expansion. The goal is to build an upland cell to create more capacity. Cox Creek has continued to actively receive inflow projects during the expansion. The original site of the expansion had two spillways that would no longer work for MPA’s needs. The team had to employ an alternate design for discharge and water management. Upland demolition of the site for the expansion began in November 2015 and was completed in July 2022. Twenty-six buildings were demolished and approximately 124,000 tons of material were remediated and recycled. As part of the expansion the dike at the expansion site is being raised to +60 feet, which will provide a cumulative capacity of approximately 14.8 million cubic yards. The dike raising to +60 began in August 2021 and is scheduled to be complete in April 2024. Mr. Djiki showed the group photographs of the progress being made on the +60 dike construction. A slurry wall is also now currently under construction.

**Property Acquisition Update**- Darren Swift, MDOT MPA

MPA has been engaged with the property just north of Cox Creek DMCF called the Tronox Property. It is envisioned as the site of MPA’s future large-scale reuse work. The total remediation costs are estimated at \$75M over the next ten years. (MDOT MPA is not acquiring the Kemira outparcel, which is embedded in the Tronox site). The Tronox site was used to manufacture titanium dioxide. At the north part of the property, they were producing a lot of waste with an acid-based production. At the Batch Attack Lagoon, they would further process the products. Eventually the waste materials infiltrated the ground water in the area and contaminated it. On the Upland side of the property, the previous company had changed their manufacturing process to involve chloride processing, which did not produce the same waste materials as the acid-based production. Remediation of the site will be a cost share between MPA and the previous owner. The Upland area needs remediation work but not to the same level as the other parts of the property. Working with partners at MDE, MPA will be developing remedial action plans for the Upland Operable Unit (OU) from early 2023 until summer 2024. The hope is to complete remediation of the Upland OU in 2025.

**Grants, Financing and Climate Adaptation Opportunities**- Chris Overcash, EA Engineering

Mr. Overcash provided an update related to grants tracking and new opportunities. For climate impacts in coastal areas, there are three components: sea level rise, storm surge, and precipitation. Together these three create compound flooding. All three components are increasing over time due to climate change. There are grants available for many types of projects related to building coastal resilience to climate change.

MDOT MPA has had several recent grant wins. In fall 2022 MPA received a grant from the FEMA Building Resilience for Infrastructure in Communities (BRIC) for marine terminal coastal resiliency assessment and adaptation planning. In 2020 MPA received grants from US DOT to assist in the resilience upgrades to protect Dundalk Marine Terminal against severe weather, sea level rise, and other potential climate change impacts. In 2022 MPA was a partner on a grant that was awarded to Baltimore County by the





National Fish and Wildlife Foundation National Coastal Resilience Fund to undertake climate resilience planning in Turner Station.

There is presently a wide range of grant opportunities that are incorporating more funding than past years due to federal programs like the bipartisan infrastructure law and the Inflation Reduction Act, through which there are over 50 billion dollars in funds to bolster projects on coastal resilience. MDOT MPA is now tracking a wide range of opportunities. A key to successful grant pursuits is identifying key project stakeholders. Grant reviewers prioritize community-based projects.

The IR team is looking for potential project locations that could benefit MPA properties or local governments or communities by providing resilience for built or natural infrastructure using dredged material.

### Next Workshop

*Question:* How many companies were awarded grants to look into innovative reuse products? We've had presentations done by two. Will anyone else be presenting soon?

*Answer:* We have seven R&D contracts out. We've had two presentations. At our next meeting we'll have three presentations.

The next IRC meeting will be on May 23, and we will have presentations from three R&D contractors.

February 28, 2023 Innovative Reuse Committee Meeting

**Appendix A**  
Participant List

*Anchor QEA: Walt Dinicola*

*Baltimore County Department of Environmental Protection & Sustainability: David Riter*

*Baltimore Port Alliance: Rupert Denney*

*Chesapeake Bay Foundation: Doug Myers*

*Concrete Consultants Group: Stacy Kinchen*

*EA Engineering: Chris Overcash*

*Ecologix: Steve Pattison*

*GEI Consultants: Nancy Straub*

*Maryland Department of the Environment: Matt Rowe*

*Maryland Department of Natural Resources: Paul Petzrick, Maggie Cavey*

*Maryland Department of Transportation: John Denniston*

*Maryland Environmental Service: Dallas Henson*

*Maryland Port Administration: Bob Munroe, Bertrand Djiki, Darren Swift, Holly Miller, Joseph Ross, Katrina Jones, Rachael Gilde*

*Maryland State Highway Administration: Intikhab Haider*

*RK&K: Sari Rothrock*

*Terrapin Institute: attendee identified by affiliation name only*

*Tradeport Atlantic: Peter Haid*

*University of Maryland Center for Environmental Science: Elizabeth Price*

*No affiliation provided: Eric Baker*