

Dredged Material Management Program Mid-Year Progress Report on Recommendations for 2019

The Maryland Department of Transportation Maryland Port Administration (MDOT MPA) presents this Mid-Year Progress Report to the Management Committee to describe the work performed to date and status of implementation of the Dredged Material Management Program (DMMP) Annual Report recommendations for 2019.

1. Continue with the implementation of the HMI North Cell Habitat Development Plan including sediment liming, construction of the deep pool, and vegetation establishment.

Implementation of the HMI North Cell Habitat Development Plan continues.¹ Specifically, excavation of the North Cell deep pool to increase water storage is underway as weather permits; vegetation test strips, initially planted in the North Cell in 2017, were reseeded in 2018 with annual and perennial grasses and woody vegetation with moderate tolerance to salinity, low pH, and a wide range of soil moistures. Monitoring of the vegetation will continue throughout the 2019 growing season and this information will be used to inform North Cell planting plans. As discharge of the North Cell continues, sediment liming is conducted on the newly exposed sediments.

MPA, MES and DNR continue to work together to develop the preferred habitat type in the North Cell. Recently, in response to a request from Maryland Department of Natural Resources (DNR), Maryland Environmental Service (MES), on behalf of MDOT MPA, contracted with an engineering firm to conduct a new hydraulic study to evaluate pond size and depth so the North Cell composition could better achieve a productive mix of water, upland, and transitional habitat. The hydraulic study will be completed this summer.

Anticipated future work also includes design of a permanent deep pool in the South Cell and new spillway designs for the South and North Cells.

2. Work with the federal government to support sufficient funding and beneficial policies for the Corps' dredging program serving the Port of Baltimore, emphasizing the necessary funding needed for the Poplar Island Expansion and Mid-Bay site design. Engage in continued coordination efforts with the Corps at the District, Region, and Headquarters levels, the Assistant Secretary of the Army for Civil Works, and the OMB on dredging and dredged material management funding requirements, approvals, and planning to meet the current and long-term needs of the Port of Baltimore.

¹ A Water Resource Analysis Study was completed in 2015 to determine a low maintenance habitat design for the entire facility that includes sustainable rain-fed pond features.

MDOT MPA continues to participate in the Corps planning and budget development process to positively affect project appropriations and work plans to support the navigation and dredged material placement needs for the Port of Baltimore.

Poplar Island Expansion and Dredging-

The Corps received \$21M for the Poplar Island Ecosystem Restoration project, which includes the expansion, in fiscal year 2019 (FY19). Funding supports construction, including inflow of dredged material for wetlands and island cell development. All Poplar Island expansion work is expected to be completed by July 2020. Once the expansion is complete, placement for the Maryland Approach channels should exist through the 2032/2033 maintenance dredging cycle.

In addition, the combined FY19 appropriations and work plan funds provided the Corps with \$28.595M for operations and maintenance activities for the Baltimore Harbor and Channels and \$18.135M for C&D Canal operations and maintenance work. The President's FY 2020 Budget included \$17.3M for Poplar Island, \$20.4 M for Baltimore Harbor and Channels and \$22.255M for the C&D Canal.

Mid-Bay Island Ecosystem Restoration - Although there was no project funding for the Mid-Bay Island Ecosystem Restoration in the FY19 congressional appropriations, the Corps received \$4.259M in the FY19 work plan to continue Preconstruction Engineering and Design (PED). These funds, combined with \$644,000 designated in FY18 work plan, provide a total of \$4.9M of federal funds for design of the Mid-Bay project. The ASA-CW submitted the Corps' Chief of Engineers' February 5, 2018, Supplemental Chief's Report (SCR), with a recommendation in support of the Mid-Bay project, to the OMB in October 2018 and OMB cleared the project for approval in late June 2019. Therefore, the ASA-CW can proceed to sign the Record of Decision (ROD). Signing of the ROD, pursuant to the National Environmental Policy Act, will now pave the way for the Corps Baltimore District to execute a Design Agreement with MDOT MPA and expend these funds.

Funding for the Mid-Bay project was not included in the FY20 President's Budget, despite MDOT MPA efforts. The next allocation of federal funding would need to be part of the Corps' FY20 work plan. As MDOT MPA and the Maryland Congressional Delegation advocate for OMB to clear the project for budgeting and approve the Corps to expend FY18 and FY19 work plan funding for PED, it will also continue to advocate for inclusion of PED completion funding in the President's FY21 budget.

3. Work with the Corps, directly and through AAPA, to ensure that the Corps' implementation of WRRDA 2014 and WRDA 2016 and 2018 is in line with Maryland's understanding of the intent of the legislation.

Past MDOT MPA efforts with the Corps and the AAPA were successful in passage of a key provision, Section 1330, in America's Water Infrastructure Act of 2018 (WRDA 2018). Section 1330 extends the construction authorization for Corps projects from seven to ten years beyond the initial project authorization date. As a result, the Mid-Bay project cannot be deauthorized because of lack of federal construction funding until June 2024. While this needed change provides an

additional buffer of time to avoid deauthorization of Mid-Bay, MDOT MPA will continue to aggressively seek construction funding in the President's budget to obviate deauthorization of Mid-Bay in the future. MDOT MPA will also work with AAPA and the Maryland Congressional delegation to develop additional provisions for WRDA 2020 that further protects the Mid-Bay construction authorization and benefit the Port of Baltimore.

Section 2106 of WRRDA 2014 authorizes the Secretary of the Army, subject to the availability of funds, to provide funds to donor ports and energy transfer ports to be used for certain purposes. Uses of these funds include maintenance dredging of non-Federal berthing areas and access channels; placement of material dredged from berthing areas and access channels; maintenance dredging and placement of legacy-contaminated sediment and sediment unsuitable for open water placement, if such dredging and placement would benefit commercial navigation at the harbor and such sediment is located in and affects the maintenance of a Federal navigation project; necessary engineering, design, and supervision and administration, including hydrographic surveys; dredged material testing and monitoring; permitting; and environmental documentation.

Per the definition provided in WRRDA 2014, the Port of Baltimore qualified as an energy transfer port and has been working to identify and implement projects that qualify for use of these funds including, but not limited to performing hydrographic surveys, geotechnical and chemical analysis for identified dredging projects, maintenance dredging for the MPA-owned berths component of the Seagirt Berth 3 deepening and improvement project and conducting berth stability analysis studies to establish appropriate dredging offsets from berths.

Earlier this year, MDOT MPA attended the AAPA Harbors & Navigation Committee conference, Environment Committee conference, the AAPA Spring Conference and Government Relations Fly-In to engage with ports, key Congressional leaders and staff on AAPA's WRDA 2020 strategies and the Harbor Maintenance Tax legislative proposal. MDOT MPA is active in supporting these initiatives and works in coordination with AAPA in our outreach to the Maryland Congressional Delegation. MPA will host this year's Fall AAPA Harbors & Navigation Committee conference at the Port of Baltimore.

4. Work closely with the Corps' Baltimore and Philadelphia Districts in implementing their updated Dredged Material Management Plans so that the plans and schedules are approved, fully coordinated, and available funding is optimized.

The Baltimore and Philadelphia District offices continue to work closely with MDOT MPA in implementing the twenty-year plan Dredged Material Management Plan for the Baltimore Harbor and Channels project, which was last updated in October 2017. This plan serves as an important roadmap for timely and quality project delivery for the Port of Baltimore over the next 20 years. MPA's annual long-range capacity planning and review efforts are coordinated closely with the Corps' implementation of their 20-year DMMPs in order to ensure sustainable capacity and leveraging of resources where most effective to maintain channels, berths, safety and efficiencies for the Port.

5. Work with the Corps and Virginia agencies to address questions related to overwintering female crabs and the Virginia channels dredged material placement sites.

The Corps is working closely with MDOT MPA and the Virginia and Federal resource agencies to address issues resulting from the National Marine Fisheries Service's comments on the Essential Fish Habitat Assessment for the Baltimore Harbor and Channels 50-foot Project General Reevaluation Report. The Virginia Marine Resources Commissions (VMRC) requested that the Wolf Trap Alternate Open Water Placement Site no longer be used for dredged material placement since it is located within a designated blue crab sanctuary and is utilized by female blue crabs to overwinter. VMRC and the Virginia Institute of Marine Science identified a Northern Expansion of the Wolf Trap Alternate site as a temporary replacement. The Corps is working to advance all necessary environmental reviews, permitting and public notice requirements as expeditiously as possible, so that the Northern Expansion could be available for dredged material placement from the York Spit Channel this winter.

VMRC also requested that long-term dredged material management from the York Spit Channel include beneficial use in Virginia waters. To respond to and address this request, the Baltimore District is planning to initiate a DMMP Update for the Virginia Channels, which will further evaluate feasibility of potential dredged material management alternatives including beneficial use for Virginia channels material. MDOT MPA continues to monitor the progress of these efforts to ensure a positive outcome that enables the FY 20 dredging of the York Spit Channel and contributes to a long-term solution for dredged material placement.

6. Focus on planning beyond the 20-year time frame as MDOT MPA continues to develop its DMMP, including identification of refined data and updated information needed to inform and support long-term sustainable dredged material management options including considerations related to climate resiliency.

To provide strong analysis of project funding needs and construction timeframes, MDOT MPA updates planning estimates for placement capacity needs annually at the end of each state fiscal year. This drives reassessment of the adequacy of existing and planned dredged material management capacity. As the Cox Creek site is expanded and dikes at Masonville are raised, additional operations and maintenance requirements will be considered to ensure capacity optimization. As such, in 2018, MDOT MPA developed operations manuals for the sites with capacity optimization as a key component. These manuals will be reviewed on an annual basis and updated as appropriate.

The MPA provides placement capacity for sediments that are dredged to maintain channels to authorized depths, and works collaboratively with the USACE-Baltimore, and private applicants/entities that work on dredging and placement activities. To that end, before material can be placed at an MDOT MPA DMCF a Right of Entry (ROE), including sediment sampling and testing, must be completed and submitted to MDOT MPA for review and approval. Sediment quality information for material that is requested to be placed at the MDOT MPA DMCFs is important because it provides a record of the quality of material in MDOT MPA sites and facilitates the management and future reuse potential of the material. To better understand the quality of material placed at MDOT MPA owned DMCFs, in 2019 the ROE application and screening process for placement was updated. The new application can be found on the MDOT MPA Green Ports website: <https://mpa.maryland.gov/greenport/Pages/dredging.aspx>

On January 23-24 2019, MDOT MPA convened global experts and practitioners in a workshop entitled *Use of Dredged Material to Protect Low-Lying Areas of the Chesapeake Bay* to gain an understanding of areas of vulnerability in the Bay and the state of technology for using dredged material to protect these areas and increase resiliency. The University of Maryland Center for Environmental Science (UMCES) hosted the workshop and will release a report of findings and recommendations later this summer. MDOT MPA is committed to collaboration with the scientific community and sister state agencies to continue to identify data and recommendations that supports a long-term sustainable dredged material management plan that incorporates opportunities to address climate resiliency.

In addition, MDOT MPA continues to focus on implementation of the 2014 Updated Innovative Reuse Strategy which includes two specific action items related to long-term dredged material management and identifying solutions for climate change: Innovative Reuse Strategy – Action Item 4 – Implement on a demonstration basis as many short-term projects as possible. For example:

- (e) - Seek demonstration areas in the harbor to restore or create wetlands as well as to restore eroded shorelines using Harbor material and engage with DNR and MDE about implementation of such projects.
- (g) - Identify projects where Harbor dredged material could be innovatively or beneficially used to enhance climate change resilience.

Specifically, at this time MDOT MPA is providing technical assistance and support to the Turner Station Conservation Teams' effort to advance the Fleming Park shoreline restoration innovative reuse and beneficial use project, which was conceptually designed during the 2017 *Design with Dredge* collaborative research internship with Mahan Rykiel and Associates. In addition, MDOT MPA is working with the Baltimore Development Corporation on the possibility of reusing up to 23,000cy of material removed from Cox Creek DMCF in a brownfields restoration that will restore an overgrown, debris-laden shoreline and provide enhanced green space along the Middle Branch of the Patapsco River.

7. Continue to review and evaluate the 2011 Harbor Team recommendations and advance where feasible. Based on additional studies and more recent stakeholder feedback, the recommendations to be pursued in 2019 include:

• Implement the Cox Creek Expanded (CCE) Project on MDOT MPA owned property.

Extensive geotechnical investigations and coordination with Maryland Department of Environment (MDE) began in early 2016 to design and construct a strong and stable foundation (base dike) for the expansion of the CC DMCF. The design for the base dike was completed in January 2018, the construction permit application was approved by MDE, and the project was awarded in late summer 2018. Construction of the base dike is underway with a current completion in spring 2021. The concept design plans for the +60' Mean Lower Low Water (MLLW) dike were completed in April 2018. The final +60' MLLW dike design plans are scheduled to be completed this summer and will then be reviewed by the MDE Dam Safety Division.

The level of contamination on the upland property is consistent with many legacy industrial parcels undergoing redevelopment. MDOT MPA continues to coordinate with the US EPA and MDE

Land Management Administration on the upland soil remediation, including work to characterize and address the extent of areas with elevated metals, PCBs, and historic petroleum waste products, as well as several underground storage tanks. The remediation, disposal, and demolition of Building 201 began in fall 2018 and is scheduled to be complete this fall. The superstructure has been demolished and is currently being removed from site and disposed of under an EPA-approved plan. Slab demolition and soil remediation are scheduled to occur this summer.

The Cox Creek Citizens Oversight Committee provided MDOT MPA a prioritized list of recommended community enhancements to be considered after required mitigation is complete.

- **Pursue acquisition of the Cristal USA property for CCE Stage 2.**

MDOT MPA continues to perform due diligence related to negotiations for potential acquisition of the Cristal property, accounting for costs associated with potential site remediation. MDOT MPA has met with MDE to discuss a path forward for closing the existing MDE Consent Order if MDOT MPA were to acquire the property. In 2019, MDOT MPA intends to continue acquisition discussions with TRONOX, the company which acquired Cristal in April 2019.

- **Begin evaluating the potential future of CAD as a dredged material management option.**

To ensure the completed CAD site was both environmentally and structurally sound, the post-placement consolidation monitoring was extended through December 2018, allowing for a full 22 months of post-placement consolidation monitoring. The Consolidation Monitoring Report and Addendum results show consolidation of placed dredged material and provide evidence that the CAD site is actively confining the material. With the success of the CAD Pilot Project, MDOT MPA is investigating the feasibility of constructing another CAD site within the Patapsco River. The initial screening process has begun to narrow the search of potential CAD site locations, assessing accessibility, presence of infrastructure or utility crossings, and sediment characterization and quality.

- **Assess innovative reuses of dredged material with a goal of reclaiming at least 500,000 cubic yards per year from the Cox Creek DMCF by 2023.**

Strong coordination and collaboration with key partners and stakeholders have resulted in implementation of several innovative reuse demonstration projects and opportunities for additional demonstration projects. As of January 2019, 10,500 cubic yards (cy) of dredged material has been reclaimed from the Cox Creek DMCF and moved off-site for use in small volume demonstration projects. At the MDOT MPA Hawkins Point site, 4,500 cy is being used as engineered fill. In partnership with the City of Baltimore, 6,000 cy is being used as alternative daily cover at the Quarantine Road Sanitary Landfill.

In 2019, MDOT MPA initiated planning and preliminary habitat design of a conceptual-level pilot project in the HMI North Cell that originated from the 2017 research and design internship *Design with Dredge* in collaboration with Mahan Rykiel and Associates, a local landscape architecture firm. The HMI North Cell Habitat Development pilot project aims to develop micro-landforms out of on-site dredged sediments to explore cost-effective and publicly engaging habitat restoration

strategies for HMI. Goals of the project include the creation of diverse habitat, optimizing project costs, and engaging and educating stakeholders. Implementation and construction of the habitat development project is expected by the end of 2019, which will be followed by three years of adaptive management and monitoring.

MDOT MPA continues to participate in the Sustainable Materials Management Maryland (SM³) group and has communicated dredged material availability and reuse potential. Participation in the SM³ group has generated interest in using dredged material as a blending component as part of a larger solution to improve resource recovery and sustainable materials management in Maryland. Additionally, MDOT MPA presented on the Innovative Reuse Program at a House Bill 171 (Yard Waste, Food Residuals, and Other Organic Material Diversion and Infrastructure Study) workgroup meeting, which resulted in the group integrating dredged material in the study's recommendations as a blend with other waste streams such as compost, poultry litter and anaerobic digestate.

Processing dredged material through blending is one option to enhance the material and increase its availability for a variety of end uses. MDOT MPA is currently engaged in two different dredged material blending studies that are being conducted by University of Maryland, College Park School of Engineering – topsoil and embankment fill blending studies. The topsoil study aims to develop a dredged material blend with properties that meet the MDOT SHA topsoil specifications and the embankment fill blending study is exploring the use of dredged material as potential highway embankment material. Both studies are expected to be complete by the end of 2019.

MDOT MPA continues to work collaboratively with MDE Land and Materials Administration to streamline projects using the MDE Innovative Reuse and Beneficial Use of Dredged Material Guidance Document and Technical Screening Criteria.

• Advance innovative and beneficial use by continuing to implement the 2014 Revised IR Strategy, with a focus on operational efficiencies within the Cox Creek DMCF to optimize capacity and promote sediment recycling and processing.

Implementation of the 2014 Revised Innovative and Beneficial Use Strategy continues to be an MDOT MPA priority in planning for sustainable dredged material management solutions and several of the Strategy's action items are advancing or complete. Currently, MDOT MPA and its Capacity Recovery Team (CRT) are finalizing a feasibility analysis report that wraps up a 10-month investigation of on-site operational efficiencies at Cox Creek DMCF to support increased, long-term sustainable capacity recovery at the Cox Creek DMCF as well as continuing to stockpile material for use in on-site construction and demonstration projects.

Dredged material reuse is being promoted through productive interagency coordination. For instance, MDOT State Highway Administration (SHA) updated its 920 Furnished Topsoil Specification to remove the words "dredge spoil" from the harmful materials provision, thereby allowing dredged material to be used in SHA topsoil applications, given the material meets the criteria defined in the specification.

Supplementary coordination with MDOT SHA is accomplished through the Recycled Materials Task Force (RMTF); MDOT MPA leads the RMTF Dredged Material Subcommittee. The mission of the Dredged Material Subcommittee is: To identify and address existing barriers prohibiting or hindering the acceptance of dredged material in MDOT SHA or MDOT SHA-related projects and to facilitate the approval of innovative and beneficial use of dredged material by and/or for MDOT SHA and other related projects.

MDOT MPA continues to investigate opportunities for small-to-medium scale, functional demonstration projects with internal and external partners, using dewatered dredged material.

8. Continue to increase the public's engagement, understanding, and support of Maryland's DMMP through strategic outreach and education to the communities, government agencies, non-government organizations, businesses, and schools near project sites. Incorporate stakeholder feedback and input into the DMMP planning process. Build upon existing partnerships and develop new partnerships with DMMP stakeholders. Grow awareness of and support for the dredging program, especially with younger audiences, through increased use of social media and other innovative communications tools.

MDOT MPA's remains committed to stakeholder engagement as demonstrated by the active participation of citizens in the DMMP and strong support of and consistent attendance at committee meetings, tours, and events. The 2018 Annual Meeting boasted the highest attendance on record, and success continues into 2019 with a record number of education and outreach events. On March 18, DMMP Committee Members were treated to an in-flow tour at the Masonville DMCF, a great immersion experience with representatives from each DMMP committee participating. Cox Creek COC members participated in a tour of the expanded site, and members were excited to see all the progress firsthand.

In an effort to develop new partnerships and garner support for the DMMP, MDOT MPA recently presented at two annual conferences including the Maryland Quality Initiative Conference (MDQI) and the Society of Wetland Scientists Conference to provide an overview of the Port's dredging program and highlight the achievements of the Innovative Reuse Program. Additionally, MDOT MPA attended and presented on the CAD pilot project at the Western Dredging Association (WEDA) Conference; WEDA is a non-profit technical professional organization committed to the exchange of knowledge in the fields related to dredging, navigation, marine engineering and construction. MDOT MPA will continue to serve as an active WEDA member on behalf of the Port of Baltimore to enhance stakeholder diversity and cultivate new industry partners.

MDOT MPA is empowering the next generation of environmental and community stewards through its outreach and education programs by providing a network of outdoor classrooms and support for education programs at each of the Port's environmental restoration sites and DMCFs. Since 2010, there have been over 56,000 student interactions through in-class programs, presentations, and field experiences. To date this year, the outreach team has participated in over 127 environmental education and DMMP outreach related tours and events, and 113 terrapins were raised in the classrooms for release at Poplar Island.

This year marks a decade of dedication at Masonville Cove, where MDOT MPA and its partners have served over 35,000 students through programs, welcomed approximately 10,000 visitors, and

hosted 4,000 volunteers who have donated over 20,000 hours. Masonville Cove is also home to Captain Trash Wheel, part of the romp of trash wheels in Baltimore, and has removed 9 tons of floatable debris helping reduce trash in the waters surrounding Baltimore. Over 230 bird species have been recorded at Masonville Cove, now including the only pair of nesting bald eagles in Baltimore. To celebrate these accomplishments, thank our partners and meet new supporters MDOT MPA and the Masonville Cove partners are hosting a series of celebratory events at Masonville Cove throughout 2019 such as: extended first Thursday evening hours; Movie Night, Yoga Night and a kayaking event for community members. To encourage diversity in participation at these events, flyers and announcements are also being published in Spanish.

In an effort to build on existing relationships, generate new partnerships and extend our reach and impact, the MDOT MPA team held a 1st birthday celebration for Captain Trash Wheel in conjunction with the National Aquarium's annual Bio Blitz event at Masonville Cove, participated in the annual Maryland Association of Environmental Outdoor Education (MAEOE) Youth Summit, presented at several conferences as discussed in earlier sections of this report and recently participated in:

1. B'More Wild Fest – MDOT MPA provided free shuttle service from the festival at Middle Branch park to/from Masonville Cove, where specialized wildlife activities and events were hosted;
2. Dundalk Chamber of Commerce Business Showcase – MDOT MPA was featured as one of six speakers and provided a Port of Baltimore overview and update;
3. Pasadena Shop Local event: MDOT MPA supported this event by staffing a table with Port of Baltimore activities, giveaways and general information;
4. Curtis Bay Community Festival – MDOT MPA provided a Green Port table at this community event with Port-related games, prizes and general information;
5. AIA Baltimore *Design with Dredge* Lunch & Learn- in support of Mahan Rykiel and Associates MDOT MPA attended this presentation, shared information about the Port and the dredging program and developed several new partnerships;

In addition, later this year MDOT MPA will host the first-ever joint Harbor Team and Citizens Advisory Committee (CAC) meeting on August 7, 2019. The meeting will be held at the MedStar Harbor Hospital, located nearby to Masonville Cove, where we will receive a tour of the hospital's recently installed best management practice (BMPs) to address stormwater.

MDOT MPA has significantly improved its social media presence and creativity this year for Captain Trash Wheel and other DMMP related activities. Engagement increased 45% for Instagram, 23% for Facebook, and 52% for Twitter.