

**FINAL DRAFT**  
**SUMMARY OF THE DREDGED MATERIAL MANAGEMENT PROGRAM**  
**MANAGEMENT COMMITTEE MEETING**  
**September 25, 2019, 10:00 AM**  
**World Trade Center**  
**20<sup>th</sup> Floor, Stanton Room**  
**Baltimore, Maryland**

***Attendees:***

*Angie Ashley Consulting:* Angie Ashley

*Association of Maryland Pilots (AMP):* Eric Nielsen

*Citizens Advisory Committee (Chair):* Adam Lindquist

*Ecologix Group:* Steve Pattison

*Maryland Department of Natural Resources (DNR):* Bruce Michael

*Maryland Environmental Service (MES):* Tammy Banta, Olivia Gullede, Jeff Halka, April King,  
Melissa Slatnick

*Maryland Department of Transportation:* Eddie Lukemire

*Maryland Department of Transportation Maryland Port Administration (MDOT MPA):* Sergio  
Adantor, Kristen Fidler, Jennifer Guthrie, Katrina Jones, Kristen Keene, Holly Miller, Amanda  
Peñafiel, Gannon Price, John Vasina

*University of Maryland Center for Environmental Science (UMCES):* Dr. Peter Goodwin, William  
Nardin, Kane Samuel, Mario Tamburri

*US Army Corps of Engineers, Baltimore District (CENAB):* Kevin Brennan, Thomas Laczko,  
Graham McAllister, Jeremiah Spiga, Ray Tracy

*US Army Corps of Engineers, Philadelphia District (CENAP):* Gavin Kaiser

*US Fish and Wildlife Service:* Chris Guy

**Action Items:**

1. Ms. Fidler stated that MDOT MPA will send out the Mid-Bay project factsheet to all attendees to ensure all information shared is consistent.
2. Mr. Halka will send the link for the Geological Society of America conference to MDOT MPA to be distributed to DMMP Management meeting attendees.

**Statements for the Record:**

There were no statements for the record.

**1.0 Introductions, Approval of Meeting Summary** **Ms. Kristen Fidler, MDOT MPA**

Ms. Fidler welcomed the attendees and called the meeting to order. Attendees were asked to introduce themselves and state whom they represent. Ms. Fidler requested comments on or changes to the summary from the June 26, 2019 Dredged Material Management Program (DMMP) Management Committee meeting. A motion to accept the meeting summary passed unanimously.

**2.0 Citizens Advisory Committee Report** **Mr. Adam Lindquist, CAC Chair**

Mr. Lindquist stated that the first joint DMMP Harbor Team/Citizens Advisory Committee (CAC) was held on August 7 at MedStar Harbor Hospital. There was positive feedback from all attendees and a joint meeting will likely occur annually moving forward.

The CAC is hosting a waterside tour of the Baltimore Port and harbor onboard the vessel *Mary Lynn* on September 25. Each DMMP committee will be represented on the tour.

The next Masonville CAC meeting will be October 1, which will include new committee member representatives from Baltimore Green Space, Furbish Company, and MedStar Harbor Hospital.

The next Cox Creek Citizens Oversight Committee (COC) meeting will be October 16 in the new Cox Creek Operations and Maintenance (O&M) building. The meeting will begin with a site tour of the Cox Creek Dredged Material Containment Facility (DMCF) and the work that is ongoing to expand the DMCF.

At the September 17 Hart-Miller Island (HMI) COC meeting, site visitation for 2019 was discussed. As of mid-July, over 32,000 people visited the Department of Natural Resource (DNR) HMI state park, including approximately 920 people picnicking, 20,000 boaters, and 2,000 swimmers.

#### Upcoming Events:

At Masonville Cove, two separate Urban Wildlife Refuge Day celebrations will be held on September 26 and 29. The September 26 event will include Benjamin Franklin High School students onsite, monarch tagging, and important community members. On September 29, the Urban Wildlife Refuge Day celebration will feature free kayak tours as part of the Decade of Dedication series. The HMI 5-mile run will occur October 12. An open house at Cox Creek will occur October 26 from 10AM to 2PM to celebrate the opening of the new O&M building.

### **3.0 Workshop on the Use of Dredged Material to Protect Low-Lying Areas of the Chesapeake Bay**

**Mr. Mario Tamburri, UMCES**

**Mr. William Nardin, UMCES**

Mr. Tamburri stated that the Use of Dredged Material to Protect Low-Lying Areas of the Chesapeake Bay workshop, held January 23-24, 2019 in Annapolis, was a collaboration between Maritime Environmental Resource Center (MERC) and the Maryland Department of Transportation Maryland Port Administration (MDOT MPA). The focus of MERC is to facilitate the development and adoption of green port and green ship innovations.

A steering committee was established in 2018 to create workshop goals, an agenda, and a list of invited participants. The steering committee included: Don Boesch (University of Maryland Center for Environmental Science [UMCES]), Chris Correale (MDOT MPA), Kristen Fidler (MDOT MPA), William Nardin (UMCES), Robert Pace (EcoLogix Group), Danielle Szimanski (Corp of Engineers, North Atlantic, Baltimore District [CENAB]), Mario Tamburri (MERC/UMCES), Bram Van Prooijen (Delft University of Technology, The Netherlands), and Lisa Wainger (UMCES). The committee established the following workshop goals:

- Identify the problems associated with inundation, sea-level rise, and areas of vulnerability in the Chesapeake Bay
- Understand current magnitude, type, and spatial extent of dredging activities and programs conducted in the Chesapeake Bay
- Understand the current state of technology and potential applications of dredged material to protect low-lying areas
- Identify the range of impacts, constraints, and opportunities for restoration and protection

- Build consensus on a strategy forward for future targeted research, development and applied projects

Over 40 participants from local, state, and federal agencies, academia, non-government organizations, and private sectors attended the January 2019 workshop. Mr. Nardin stated that there were attendees from around the world which allowed for many ideas and interesting discussions. The following important and recurrent themes were developed from the workshop:

- Dredged material plays an important role in addressing eroding shorelines and coastal wetlands; however, it is one of many tools to consider in a broad sediment management strategy.
- Solutions should be sustainable, resilient and adaptive to not only solve low-lying area issues but to garner support and funding for the projects.
- An increased effort is needed to understand sediment transport and to conserve sediment as a resource (a useful material).
- When developing solutions, an emphasis is needed on regional sediment management.
- While large-scale solutions are needed to adequately address problems, proof of success via local/small-scale projects is valuable.
- Radically different, unconstrained planning approaches will be needed to develop projects that can solve future problems.
- Sediment transport transcends jurisdictional boundaries, therefore other states in the Chesapeake Bay should be included when developing regional sediment management strategy.
- Partnerships are critical.

The discussion produced four major recommendations:

- Form a standing working group for follow-up and implementation.
- Develop a web-based public information sharing platform to promote collaboration and engagement regarding the use of dredged material to protect low-lying areas.
- Identify and implement near-term pilot projects using existing tools to garner project support/funding.
- Develop large-scale regional sediment management strategy.

Mr. Tamburri stated that the final report for the workshop was released in July 2019 and can be found at the following site:

[http://www.maritime-enviro.org/Downloads/Reports/Other\\_Publications/MERC\\_Dredge\\_Material\\_Workshop.pdf](http://www.maritime-enviro.org/Downloads/Reports/Other_Publications/MERC_Dredge_Material_Workshop.pdf).

Ms. Fidler stated that MDOT MPA has investigated reestablishing a prior committee to become the standing working group from the first workshop recommendation. A planning call is scheduled for September 27 to discuss the working group. The goal would be for the working group to first meet in January 2020. Mr. Guy stated that US Fish and Wildlife Service (USFWS) would be interested in sending representation to the working group meetings.

#### **4.0 Innovative & Beneficial Reuse Progress Report**

**Ms. Kristen Keene, MDOT MPA**

Ms. Keene stated that the ongoing and upcoming innovative reuse (IR) demonstration projects include alternative daily landfill cover, engineered fill, and HMI habitat development. Construction for the Ridgley's Cove demonstration project is anticipated to start winter 2020 and will utilize blended dredged material as remedial capping and vegetative substrate.

The House Bill (HB) 171 – Yard Waste, Food Residuals, and other Organic Materials Diversion and Infrastructure Study final report was completed in July 2019. The Programmatic Recommendation #4 -

Collaborate on research and development - states that “State agency partners, including the Department, Maryland Department of Transportation Maryland Port Administration (MPA), Maryland Environmental Service (MES), and [Maryland Department of Agriculture] MDA, should identify research and development opportunities around the use of dredged materials, compost, and digestate for different uses and to conduct an analysis to identify existing markets for these materials.” This helps support the ongoing IR efforts and the future of the MDOT MPA IR Program.

The 2019 DMMP Annual Report is currently being developed. Two potential 2020 recommendations that may be included in the report for consideration by the Management Committee will be related to dredged material and climate change and revising the IR strategy. While the 2014 revised IR strategy has and continues to serve as a roadmap for the IR Program, there have been many accomplishments and changes in the last five years. For instance, several demonstration IR projects have been performed, Maryland Department of the Environment (MDE) released the IR Guidance Document, additional interagency coordination has been established, and Governor Hogan issued the Waste Reduction and Resource Recovery Executive Order. The following questions will be used to guide the IR strategy updates:

- Are there outstanding research & development needs for dredged material end uses?
- Are there other agencies, businesses, environmental advocacy groups, citizens and/or private sector representatives you feel MDOT MPA should be engaging with?
- Are there existing regulatory barriers or impediments that could be updated to help facilitate dredged material reuse?
- How can we build on the progress we have made to-date promoting the innovative and beneficial use of dredged material; are there additional education and outreach needs?
- How can the beneficial use of dredged material be expanded to address Maryland’s coastal resiliency needs?

These questions were presented to the IR Committee at the August meeting. MDOT MPA is hoping to have an open facilitated discussion at the November IR Committee meeting to get feedback regarding IR strategy updates.

#### Recent and Upcoming Meetings

US Army Corps of Engineers (USACE) and MDOT held a Coastal Storm Risk Management feasibility study public meeting at MDE on September 23. The main goal of the study is to identify areas in the greater Baltimore-metro area vulnerable to coastal storms and other impacts related to climate change. The deliverable from this study will include a menu of solutions, including recommendations for climate resiliency measures, that could be implemented.

October 16-18 is the Western Dredging Association Eastern Chapter Meeting where MDOT MPA, DNR, Mahan Rykiel Associates, and the Chesapeake Bay Foundation will be presenting on a panel to discuss dredged material reuse and the Fleming Park project.

The DMMP Annual Meeting will be held November 8.

**5.0 Corps of Engineers, North Atlantic, Baltimore (CENAB) Mr. Kevin Brennan, CENAB  
Mr. Graham McAllister, CENAB**

#### Virginia Dredging Plans

Mr. McAllister stated that the CENAB currently has a solicitation out for the dredging of approximately 2.5 million cubic yards (mcy) of material from the York Spit channel. The solicitation will close September 27 and the bid is expected to be awarded by the end of October to facilitate maintenance

dredging via a hopper dredge over winter 2020. The material will be placed at the northern extension of the Wolf Trap alternate placement site rather than the federal standard placement in order to avoid potential impacts to overwintering female blue crabs. A public draft Environmental Assessment (EA) to place the material at the Wolf Trap alternate placement site, northern extension, was open over the summer and closed August 18. No public comments were received. CENAB worked with Virginia's Department of Historic Research on a programmatic agreement to avoid a potential ship wreck that was identified in a cultural research survey that was a part of the draft EA.

#### Maryland Channels

CENAB awarded a contract to the Great Lakes Dredge and Dock Company for \$26.4 million to dredge 2.1 mcy of material from the Brewerton Eastern Extension and Tolchester Channels in December. All material will be placed at Poplar Island.

Approximately 635,000 cy of material from the Brewerton Channel, the Brewerton Angle, and the northeast branch of the East Channel will be placed at the Masonville DMCF in February. CENAB continues to work with MDOT MPA to establish a tipping fee agreement to facilitate the placement at Masonville DMCF.

#### Poplar Island Expansion Project

Mr. Laczo stated that to date, approximately 34.4 mcy of dredged material has been placed at Poplar Island and approximately 372 acres of wetlands have been created. Work associated with the final dike construction contract for the expansion is underway and on schedule. The final expansion construction contract for two drainage structures was awarded September 3. All expansion construction work is scheduled for completion July 2020. Initial placement of dredged material in the expansion containment cells is scheduled for the 2020/2021 dredging cycle. The expansion site will allow placement through the 2032/2033 dredging cycle.

#### 50-Foot Widening Validation Study

Mr. Tracy stated that CENAB is in the process of closing out the former 50-foot Widening study, which was delayed due to the issues pertaining to the Wolf Trap Alternate Placement site. Upon request of MDOT MPA, a validation study will be initiated under the existing construction agreement between the Department of the Army and the State of Maryland for the Baltimore Harbor and Channels navigation project. The MDOT MPA's request to initiate the validation study is not expected until a viable placement site for the widening material from the Virginia channels is identified. The validation study will focus on evaluating 750 and 800-foot widths in Maryland channels and 900, 950, and 1000-foot widths in Virginia channels.

#### Mid-Chesapeake Bay Island Project (Mid-Bay)

Mr. Tracy stated that the district has been funded \$4.9 million to begin the design of the Mid-Bay project. The design agreement between the Department of the Army and the State of Maryland was executed on August 20, following signing of the Record of Decision for the feasibility phase. Currently, the CENAB is in the process of preparing scopes of work to perform field surveying and soil sampling/testing. Barren Island design is expected to take approximately 27 months and the design of James Island is expected to take 47 months starting August 2019. Construction of Barren Island is expected to commence fiscal year 2022.

Captain Nielson asked how the Mid-Bay project will be financed. Mr. Tracy stated that design funding is slightly short. For construction of the islands, CENAB will need to submit a budget report and the process should start as soon as possible.

#### **6.0 Corps of Engineers, North Atlantic, Philadelphia (CENAP) Mr. Gavin Kaiser, CENAP**

Mr. Kaiser thanked Jeff May (Corps of Engineers, North Atlantic, Philadelphia [CENAP]) for taking over as project manager while he was out.

Mr. Kaiser reported that there was a Pearce Creek Implementation Committee meeting on August 16, which resulted in positive feedback. Pearce Creek DMCF is receiving some grading to better manage storm water and to keep the area open and ready for future inflow material. The groundwater monitoring wells at Pearce Creek are continuing to be monitored with the next testing in mid-November. The annual groundwater monitoring report will be sent to MDE at the first of the year.

Bids were open September 23 for dredging of the Chesapeake & Delaware (C&D) Canal and the contract will be awarded by the end of the week of September 23. The dredging project will consist of approximately 500,000 cy of material and will be placed at Pearce Creek DMCF.

#### **7.0 Right of Entry Application Process for Acceptance of Dredged Material**

**Ms. Holly Miller, MDOT MPA**

Ms. Miller stated that MDOT MPA is responsible for managing placement capacity for the sediments dredged to maintain navigation channels. MDOT MPA collaborates with the CENAB, CENAP and private entities to better understand upcoming dredging needs and placement activities for efficient management of placement capacity. Sediment quality information for material that is dredged and placed in MDOT MPA facilities is important for the management of the DMCFs.

MDOT MPA has always had an application process for requesting placement capacity at MDOT MPA DMCFs. The Dredged Material Placement Right of Entry application formalizes the application process, which starts with a letter of request asking if an application will be accepted and if MDOT MPA has capacity for additional material at their sites. Other submittal information includes an application form with project information, a sampling and analysis plan, an operations plan with the logistics of dredging and offloading, copies of applicable regulatory permits, laboratory results of material testing, and a hydrographic survey for both pre- and post-dredging. The applicant must provide information on the dredging project including project location, volume of in-situ material to be dredged, how the project will be dredged, schedule, and proposed sampling plan and testing requirements. The Dredged Material Placement Right of Entry application process takes approximately three to six months, depending on the information the applicant provides and the timing of submittal by the applicant.

The key Dredged Material Placement Right of Entry application updates include: electronic applications; timeline for submittals and requirements; National Environmental Laboratory Accreditation Program certified laboratory requirements for sample analysis; minimum number of composite samples per project; physical/chemical data required to be within the last three years; new analytical testing requirements and target detection limits with web links within the application for guidance; electronic data submittal requirement; pre-construction meeting requirement; and a data screening process.

The data screening process is a comparison of a chemical concentration to a regulatory limit or numeric value that is representative of the baseline or existing facility conditions. The data screening process allows MDOT MPA to monitor material entering the DMCFs, identify materials with chemical

concentrations that statistically differ from or are similar to material previously placed in the DMCFs, assist with early identification of materials that are suitable for future IR practices, and allow for implementation of material management practices, if necessary. MDOT MPA only accepts non-hazardous material in their DMCF's, and the screening process helps MDOT MPA determine if an applicant has hazardous material. To assist in the data screening process, a baseline control limit (BCL) was calculated for the chemical constituents in the dredged material. The BCL represents a statistically derived upper concentration limit with the expectation that 95% of future data from the Baltimore Harbor will be below the BCL. The BCL for Baltimore Harbor DMCFs was determined using the USACE Baltimore Harbor channel sediment datasets. The MDOT MPA two-step data screening process for maintenance material starts with whether the toxicity characteristic leaching procedure (TCLP) results exceed the regulatory criteria. If sediment exceeds the TCLP criteria, the sediment cannot be placed in an MDOT MPA DMCF. If sediment does not exceed the TCLP criteria, step two compares the detected bulk sediment results to the BCL. If the bulk sediment results are less than or equal to the BCL then the sediment is suitable for placement at an MDOT MPA DMCF. If the bulk sediment results exceed the BCL, then the exceedances are investigated, and the material will either be excluded from placement at the discretion of MDOT MPA, or appropriate DMCF management practices can be implemented.

Mr. Kaiser inquired whether MDOT MPA has received any applicants for dredged material to be placed this year. Ms. Miller stated that MDOT MPA has received two applicants in 2019.

## **8.0 Blue Carbon and the DMMP**

**Dr. Peter Goodwin, UMCES**

Blue carbon and tidal wetland restoration as a technique for carbon sequestration is generating significant interest. Dr. Goodwin stated that there are many definitions of blue carbon, but the definition in the context of this discussion is “carbon accumulated in vegetated, tidally-influenced ecosystems such as tidal marshes, tidal forests, and inter-tidal to sub-tidal seagrass meadows.” Blue carbon ecosystems (BCE) are defined as “coastal wetland ecosystems with manageable and atmospherically significant carbon stocks and fluxes.”

Initially in Maryland, the blue carbon concept came from the Maryland Commission on Climate Change (MCCC) and MDE. Maryland has been trying to better understand their carbon budgets and one of the areas the MCCC's modelers felt was weak was the algorithm used to quantify carbon in coastal areas. MCCC asked the Scientific and Technical Working Group (STWG) to investigate and improve the existing algorithm. Additionally, in the last six months, there have been several publications from the Intergovernmental Panel on Climate Change (IPCC) describing how to produce these calculations.

As STWG investigated the blue carbon calculations, it was apparent that blue carbon is closely linked to other issues and topics of concern to the state of Maryland. These coastal areas provide multiple ecosystem services, and likely each of those services has a different funding source associated with the research into the benefits provided for that individual service. The STWG discussed the possibility of looking at these coastal areas on a larger scale instead of the individual programs/services. Mr. Michael added that historically, the focus on wetland creation and restoration has been based on nutrient sequestration and filtering in regard to the Chesapeake Bay programs and Maryland total maximum daily loads. Learning more about leveraging the potential carbon reductions in these ecosystems is a topic that should be studied more.

Dr. Goodwin stated that firm targets have been set by the MCCC for 2030, 2040, and 2050. There are pilot projects in place that are very important to study the methods to meet these targets and goals, however, these are long term studies which do not provide short term answers on the realistic benefits

from carbon sequestration from these coastal systems. Dr. Goodwin mentioned that outside of Maryland, there are projects that have been funded by private sector entities and that is another potential topic that could be investigated by the MCCC. Mr. Michael agreed that financing this effort is a challenge but mentioned that there is an opportunity to expand this effort outside of Maryland as climate change is currently being addressed in the broader Chesapeake Bay region as a whole through the established partnership between the six states, the District of Columbia, and local and federal government agencies.

Ms. Fidler asked if the expansion of this effort includes a workshop that focuses on the blue carbon concept. Dr. Goodwin replied that UMCES is responsible for running the blue carbon workshop, which is currently focused on calculating blue carbon in a system, but the topic is also interrelated with many other topics, so it may be worth linking blue carbon to other workshops and workgroups.

Ms. Fidler stated that if Poplar Island could be a location for data collection and analysis for this effort to update the blue carbon calculation, the results could make a case for additional benefits from the Mid-Bay project. Ms. Fidler stated that MDOT MPA is interested in helping with the workshops and sharing any information that is needed.

## **9.0 Harbor Development Updates**

**Ms. Kristen Fidler, MDOT MPA**

### Cox Creek:

Ms. Fidler stated that the first lift of the base dike widening at the Cox Creek DMCF has been completed to Section G of the dike. Ms. Fidler reminded attendees that the Cox Creek DMCF is currently closed to inflow for the 2019/2020 dredging cycle and all material has been diverted to Masonville DMCF. Cox Creek is expected to receive material in 2021. The 100% design plans and specifications to raise the dikes to +60' mean lower low water (MLLW) are almost complete. The demolition of Building 201 is almost complete, with the remaining building foundation being removed.

Construction on the new on-site O&M building is complete, with furniture and wi-fi installation remaining. The existing on-site office trailers will be removed from site once MES staff have fully moved into the O&M building.

MDOT MPA continues to communicate with owners of the land adjacent to Cox Creek, a company called Tronox. MDOT MPA has had communication with Tronox since early June 2019, and the next meeting is set for October 15. The past conversations have been positive in regard to MDOT MPA purchasing the property. MDOT MPA remains interested in acquiring the property for further sustainable capacity recovery at Cox Creek, specifically through innovative reuse of material.

### Masonville

Ms. Fidler stated that the Masonville DMCF is accepting inflow while under construction. The dikes are being raised to +18' MLLW which is expected to be complete by the end of December 2019. The designs for dike raising to +30' MLLW are ongoing. The third and final stage of the vertical expansion of the Masonville DMCF will include dike heights of +42' MLLW. The cross dike is being installed to remove the Kurt Iron Slip portion of the DMCF, which will become cargo storage for the Port of Baltimore's roll on-roll off cargo.

The Access Zone 3 completion report was submitted to MDE in June 2019. Upon MDE's acceptance of the report, the Consent Order can be closed out and the property can be put into a conservation easement with Maryland Environmental Trust.

### Pearce Creek

The final residence has been connected to the public water line. A community outreach meeting is scheduled for November 15.

### Mid-Bay Project

The USACE has received \$4.903 million for design of the project. The project management plan and design agreement between the USACE and MDOT MPA have been executed and the MDE permit to conduct geotechnical borings has been received.

MDOT MPA will be in need of support from all partners regarding receipt of federal construction funding. MDOT MPA expects to request federal fiscal year 2022 construction funds. Ms. Fidler explained that the Mid-Bay project is \$1.7 billion more than the federal standard, which is open water placement. In a letter, the Office of Management and Budget (OMB) expressed support for the beneficial reuse of dredged material, but stated that it is OMB's position that the excess cost of the project should be the responsibility of the non-federal sponsor, MDOT MPA. It is possible that USACE will be able to budget for construction funds. Captain Nielson stated that the same situation happened with Poplar Island and that the USACE and the Association of Maryland Pilots hope to use the same strategy to overcome obstacles.

Dr. Goodwin requested a fact sheet of the Mid-Bay project so that information shared will be consistent. Ms. Fidler stated that MDOT MPA will send out a Mid-Bay project fact sheet to all attendees.

Mr. Guy asked if OMB takes into account the economic benefits that the Mid-Bay projects offer when creating their budget. Ms. Fidler replied no, because they are comparing the cost of open water placement to the Mid-Bay project construction and design costs. Mr. Guy stated that USFWS may have someone who can do some resource economics to see the added economic value of the Mid-Bay project.

Mr. Kaiser asked for more information regarding an update on the Confined Aquatic Disposal (CAD) project. Ms. Fidler replied that MDOT MPA is currently investigating new locations for the second and third pilot project. Ms. Fidler stated that the CAD cells are a good opportunity for emergency placement.

## **10.0 Round table Discussion: Activities and Issues of Significance**

### **Ms. Kristen Fidler, MDOT MPA**

Mr. Halka stated that the Geological Society of America northeast and southeast sections are hosting their annual conference in March 2020 in Reston, Virginia. There are approximately 60 sessions over the course of three days including sessions regarding sea level rise, marshes, and climate resiliency related topics. Mr. Halka will send the link for the Geological Society of America conference to MDOT MPA to be distributed to meeting attendees. December 2019 is the deadline to turn in abstracts for the conference. The link to the conferences can be accessed here:

[https://www.geosociety.org/GSA/Events/Section\\_Meetings/GSA/Sections/Home.aspx?hkey=88411fd7-3278-41be-aa78-f451032e17f3](https://www.geosociety.org/GSA/Events/Section_Meetings/GSA/Sections/Home.aspx?hkey=88411fd7-3278-41be-aa78-f451032e17f3)

Mr. Bruce stated that summer 2019 had high hypoxia (oxygen deprivation) throughout the main channel of the Chesapeake Bay. All of July was very high in hypoxia and decreased to normal levels at the end of August. The Chesapeake Bay had extremely warm temperatures throughout July and August. High temperatures and high hypoxia are not good aquatic habitats for striped bass and other organisms. The Maryland portion of the Chesapeake Bay was not bad in regard to the overall Chesapeake Bay grade,

and due to the high temperatures, the southern part of the Bay had significantly high numbers of eel grass.

The next DMMP Management Committee meeting will be held on November 8. The DMMP Executive Committee meeting will be held on December 5. The DMMP Annual meeting will be held November 8 at the Sollers Point Multi-Purpose Center. Ms. Fidler stated that MDOT MPA is working to update the DMMP Annual Report to be more reader-friendly and engaging. Ms. Fidler thanked everyone for their attendance and the meeting was adjourned.