

**FINAL DRAFT  
SUMMARY FOR THE HARBOR TEAM MEETING  
April 25, 2019; 6:00 PM  
2200 Broening Highway, Baltimore, MD**

***Attendees:***

*Angie Ashley Consulting:* Angie Ashley  
*Baltimore City Planning Department:* Bruna Atilla  
*Baltimore County Environmental Protection and Sustainability:* David Riter  
*Baltimore Port Alliance:* Rupert Denney  
*Blue Water Baltimore:* Barbara Johnson  
*Chesapeake Bay Foundation:* Carmera Thomas  
*Dundalk Renaissance Corporation:* Tom Hickey  
*EcoLogix Group:* Steve Pattison  
*Fort Howard Community Association & 7<sup>th</sup> District Civic Council:* Scott Pappas  
*Living Classrooms Foundation:* Lorraine Warnick  
*Maryland Department of the Environment:* Tad Aburn, Jim Carsow, Mark Mank  
*Maryland Department of Transportation Maryland Port Administration (MDOT MPA):* Dave Bibo, Chandra Chithaluru, Kristen Fidler, Kristen Keene, Shawn Kiernan, Gannon Price, Bill Richardson, John Vasina  
*Maryland Environmental Service (MES):* Christine Offerman  
*Moffatt & Nichol:* Pete Kotulak  
*North Point Peninsula Council:* Fran Taylor  
*Patapsco/Back River Tributary Team:* Stuart Stainman  
*Ports America Chesapeake:* Solomon Egbe, Aamer Qureshi  
*Straughan Environmental:* Jeff Nelson  
*Terracon:* Nancy Straub  
*Tradepoint Atlantic:* Pete Haid  
*Turner Station Conservation Teams:* Gloria Nelson  
*University of Maryland Center for Environmental Science (UMCES):* Elizabeth Price  
*US Army Corps of Engineers (USACE):* Graham McAllister  
*Waterfront Partnership:* Adam Lindquist

**Action Items:**

- 1.) None.

**Statements for the Record:**

- 1.) None.

**1.0 Welcome & Introductions**

**Steve Pattison**

Mr. Pattison welcomed the attendees, and everyone introduced themselves.

**2.0 Approval of Summary from Last Meeting**

**Team**

The Harbor Team (HT) approved the January 24 meeting summary as written.

### **3.0 Tradepoint Atlantic Dredging**

**Pete Haid, TPA**

Mr. Haid stated that the Tradepoint Atlantic maintenance dredging project was originally announced at the April 2017 HT meeting. Tradepoint Atlantic will be dredging the turning basin and approach channel. Mr. Haid stated that the dredging is maintenance dredging within the existing channel to return to the original depth maintained by Bethlehem Steel, and that the dredging location is approximately a mile from the eastern and western points of the Sparrows Point property. The single crosshatches on the dredging design shown in the presentation denoted the planned dredging depth to -42 feet Mean Low Water (MLW); along the eastern and western side of the finger pier and eastern side of the approach channel the planned dredging depth is to -47 feet MLW. The project will take five years to be completed in order to meet Maryland Department of Transportation Maryland Port Administration (MDOT MPA) placement requirements.

The material being dredged has been tested for physical and chemical properties on several occasions. The material is 97% silt/clay and is consistent with the material throughout the Baltimore Harbor. Mr. Haid reminded the HT that the area to be dredged is not flat and shoaling has occurred in some areas. Mr. Hickey asked what the current depth of the project area is. Mr. Haid replied that the depths vary from -30 feet to -47 feet MLW. Mr. Haid stated that Phase 1 of the dredging project has been completed. Phase I included dredging designated areas to -40 feet MLW. Each Phase will remove approximately 200,000 cubic yards of material.

The permitting process for dredging the area was lengthy and involved many agencies. The process included applying for a permit, holding a meeting with the Maryland Department of the Environment (MDE), distributing a public notice, and holding a public hearing. Once public comments were responded to, MDE generated a report and recommendations which moved the application to the Board of Public Works (BPW) who approved and issued a Wetlands License. After the Wetlands License was received, MDE issued a Water Quality Certification. The Wetland License and Water Quality Certification was provided to the US Army Corps of Engineers (USACE) to issue a USACE dredging permit. The Wetlands License, Water Quality Certification, and USACE dredging permit were required to place material at a MDOT MPA dredged material containment facility (DMCF). Other agencies such as the US Environmental Protection Agency (EPA), National Oceanic and Atmospheric Administration (NOAA), National Marine and Fisheries Service (NMFS), Maryland Department of Natural Resources (DNR), and Maryland Historical Trust also reviewed the permit application.

Tradepoint Atlantic has committed to transparency and has put forth many efforts to communicate the project to the public. As mentioned before, the dredging project was announced at the April 2017 HT meeting. Tradepoint Atlantic met with the Chesapeake Bay Foundation, Blue Water Baltimore and many local communities, such as Turner Station and the North Point Peninsula Council. On-site open houses were also held as well as the required MDE public hearing. Several comments and concerns were received during the public hearing. Tradepoint Atlantic focused on two main recurring comments. The first comment inquired about the material being dredged and the second comment asked how the material behaves.

Tradepoint Atlantic committed to using an environmental bucket designed to lower the turbidity created when dredging and to sampling the material before dredging occurred. The BPW granted

the Wetland License for Phase 1 and two additional phases with special conditions. This included the use of an environmental bucket, providing a sampling plan that included an extensive list of analyses prior to dredging, submitting the sampling results to MDE for review and approval, posting the sampling results on the MDE website at a minimum 15 days prior to dredging, and MDOT MPA acceptance of the material for placement at their DMCFs.

Mr. Haid stated that a specific concern was raised that the material to be sampled and tested would not be representative of the material to be dredged. Following the MDE-approved sampling plan, Tradepoint Atlantic collected samples from the entire depth of the area that was to be dredged. For example, if three feet of material needs to be dredged, a sediment core sample three feet deep was collected and the material was composited to provide a representative sample. The sampling results indicated the material was Category 2 when compared to MDE screening criteria and would be an excellent candidate for innovative reuse.

To establish how the material behaves when it is dredged, Tradepoint Atlantic reached out to experts, contractors, consultants, and agencies, and performed “DREDGE” modeling which uses USACE equations to evaluate environmental effects from dredging. Tradepoint Atlantic also investigated current regulations including the Code of Maryland Regulations (COMAR) 26.24.04.06 and Maryland Water Quality Criterion. Tradepoint Atlantic performed preliminary estimates to determine the potential sediment plume that could be caused by mechanical dredging at the site and considered the background total suspended solids (TSS) concentrations that have been measured by DNR. The background TSS concentrations showed an average of 13 milligrams per liter (mg/L) at the water’s surface and an average of 19 mg/L near the bottom. The DREDGE modeling showed that at 100 feet from the dredging location, the TSS concentrations are at 100 mg/L, but at 200 feet from the dredging location the TSS concentrations have decreased to 20 mg/L, and by 700 ft the TSS concentrations have returned to background levels. The material dispersed and settled quickly. Modeling occurred within the turning basin and in open water, and the results were similar.

Extensive turbidity monitoring occurred during Phase 1 dredging. Tradepoint Atlantic established a reference sample location across the Patapsco River to identify background concentrations during dredging. The reference sample was taken daily for the first two weeks, and then once a week for the remainder of the dredging. The reference location turbidity averaged 6.3 Nephelometric Turbidity Units (NTU) and had a maximum of 9.2 NTU. Sentinel points were established around the dredging operation and the averages ranged from 6.8 NTU to 8.1 NTU, while the maximum turbidity ranged from 10.8 NTU to 13.9 NTU. Monitoring also occurred within the dredging operation area at approximately every 100 feet. At 300 feet from the dredging location, turbidity had returned to background concentrations. Sampling within the dredging operation area showed that the turbidity decreased more quickly than predicted by the DREDGE modeling. Mr. Pappas asked how long the turbidity monitoring was conducted. Mr. Haid replied that samples were taken once a week for approximately six weeks at all sampling locations within the dredging operation area. Mr. Haid stated that the actual turbidity results were lower than predicted, possibly due to the use of the environmental bucket. The environmental bucket differs from the traditional bucket because it cuts the dredged material flat and seals on the sides. The environmental bucket also seals on the top with flaps that prevent water from entering the bucket and stirring up the dredged material as it is being raised.

Mr. Haid summarized that Phase 1 has been completed and the dredging project has four remaining phases, the material is designated as Category 2 and usable for innovative reuse, and the turbidity created by the dredging using the environmental bucket is minimal. The current permit only allows for two additional phases and expires in May 2020. Tradepoint Atlantic has already begun to apply for a new permit to complete the project.

Mr. Riter asked about the method used to offload the material at the DMCF. Mr. Haid replied that hydraulic recirculation and pumping is used to place the material at the Masonville DMCF. Mr. Stainman asked how much material will be dredged. Mr. Haid replied that Tradepoint Atlantic has applied to dredge 1 million cubic yards (cy) of material; each phase consists of 200,000 cy of material. Mr. Pappas asked if the amount estimated for excavation was the total volume of material or the condensed amount of material once the material has been dried. Mr. Haid replied that the volume was determined by hydrographic surveys of the area to be dredged and accounts for the water content; the final volume of material, once dried, will be less. Ms. Fidler stated that DMCF capacity planning is calculated to account for water in the slurry and the dewatering process. Mr. Bibo stated that for one cubic yard of in-situ material there is a bulking factor of 1.3 once the material is stirred up; the same material dried at a DMCF occupies six-tenths of the space occupied in the channel. Mr. Taylor asked if any additional channel aids (i.e. buoys, channel markers) will be placed in the dredging area, and if so he suggested adding lights to the aids because they are a hazard at night. Mr. Haid will discuss the issue with their Marine Director.

#### **4.0 Innovative & Beneficial Use Progress Report** **Kristen Keene, MDOT MPA**

Ms. Keene provided an update to the HT regarding the MDOT MPA Innovative Reuse Program. Ms. Keene reminded the HT of Governor Hogan's 2017 Waste Reduction and Resource Recovery Executive Order. The executive order recognizes dredged material as a valuable resource with vast reuse potential, calls on state agencies to be leaders in the reuse of dredged material, and prompted the creation of the Sustainable Materials Management Maryland (SM<sup>3</sup>) workgroup. The SM<sup>3</sup> workgroup was spearheaded by MDE, but is a private sector led and supported coalition of businesses across various sectors in Maryland. Workgroup members are committed to working with state agencies to help meet the goals outlined in the Executive Order. The SM<sup>3</sup> workgroup has a diverse set of private sector representatives as well as senior level leadership from state agencies. The mission of SM<sup>3</sup> is to design and implement materials management initiatives and projects for Maryland that will:

- 1.) Foster new materials management businesses in Maryland;
- 2.) Conserve natural resources;
- 3.) Meet climate change goals for 2030 and beyond; and
- 4.) Embrace new and more effective measures of success.

Ms. Keene presented the Draft SM<sup>3</sup> 2019 Strategic Plan which will aid in the implementation of the Executive Order by creating Maryland's Waste Reduction and Resource Recovery Innovation Center (MWR<sup>3</sup> Innovation Center). The workgroup's goal is to establish one or multiple MWR<sup>3</sup> Innovation Centers throughout the state that can accommodate several municipalities and accept various waste streams to create materials and products that can be returned to the market. MDE, MDOT, Maryland Department of Agriculture, Maryland Department of Energy, and Maryland

Department of Commerce are the five state agencies included in the Executive Order. MPA falls under the overarching MDOT which will allow the reuse of dredged material to play a major role in the strategic plan. Key takeaways from the recent SM<sup>3</sup> meetings include the introduction of dredged material in the context of waste stream recovery and recognition of dredged material as one piece of a larger solution. Additionally, SM<sup>3</sup> workgroup members are assessing the state's regulatory framework to identify areas of legislation or policies which may need updating to provide consistency among the agencies and to facilitate SM<sup>3</sup> efforts. For instance, revision of the MDOT State Highway Administration Topsoil Specification to remove the words "dredge spoil" from the Harmful Materials Provision is a great example of a policy update that will aid in more sustainable materials management in Maryland. Lastly, the SM<sup>3</sup> meetings have provided MDOT MPA with opportunities for collaboration and demonstration projects.

Another workgroup with a diverse set of stakeholders, including private sector representation, is the House Bill (HB) 171 Yard Waste, Food Residuals, and Other Organic Materials Diversion and Infrastructure Study workgroup. HB 171 requires MDE, in consultation with others, to study and make recommendations regarding specified matters that relate to the diversion of yard waste, food residuals, and other organic materials from refuse disposal facilities, including the status of infrastructure in the State. The HB 171 workgroup has developed a series of legislative, regulatory, and programmatic recommendations. The HB 171 final report will include a recommendation related to the research and development of end use options for these organic waste diversion and recycling efforts; dredged material will be included as a potential feedstock for blending operations. The report will be finalized July 1, 2019 and submitted to Governor Hogan and the General Assembly. It is important that dredged material is included in the HB 171 report recommendations to support the notion that dredged material is a resource with value, not a waste product or dredged "spoil".

The SM<sup>3</sup> and HB 171 workgroups support the Port of Baltimore's Innovative Reuse Program by providing demonstration project opportunities, increasing engagement and collaboration with other state agencies and the private sector, and identifying end uses for dredged material. MDOT MPA recognizes that to reach the long-term goal of reclaiming 500,000 cy of placement capacity from the Cox Creek DMCF, a diverse portfolio of options is needed. To that end, research and development needs associated with dredged material applications are being discussed in these workgroups, which specifically aligns with the MDOT MPA revised Innovative Reuse Strategy Item #7 which states MDOT MPA will "investigate opportunities to foster research and innovation associated with dredged material reuse".

Mr. Pappas asked if any wastewater entities have participated in the HB 171 workgroup. Ms. Keene replied yes and stated that there are entities participating from the wastewater industry with a focus on biosolids and anaerobic digestion. Mr. Denney stated that dredged material could be mixed with numerous materials but asked if there would be significant competition in the market from the waste sector. Ms. Fidler stated that MDOT MPA is exploring large-scale business models, which will be driven by the Port of Baltimore acquiring ample space to process the material. MDOT MPA believes that healthy competition is beneficial and advancing the sustainable management and recovery of various waste streams, including dredged material, is critical to the overarching success and support of the Innovative Reuse Program.

Mr. Stainman asked how the Port of Baltimore's Innovative Reuse Program compares to other states. Ms. Fidler stated that the Port of Baltimore is a leader in terms of the Innovative Reuse and Beneficial Use Guidance Document, Governor Hogan's Executive Order and the strong level of support from State leadership. Ms. Keene elaborated that some states are not incorporating innovative reuse as a management option for dredged material and others have been successfully conducting innovative reuse in large volumes. Two factors that play a role in dredged material reuse as a management option are the amount of material being dredged annually, and if an area has capacity issues. Ms. Keene reminded the HT that other states have different regulations, and some are more streamlined, which could also play a role. Mr. Stainman asked if transportation costs are a factor in discussions with the SM<sup>3</sup> workgroup. Ms. Keene replied that transportation and associated costs are part of the discussions and, based on the existing information, the limiting distance for roadway transportation is approximately a 20 - 30-miles. Mr. Denney stated that a barge terminal should be put in place at Cox Creek DMCF to improve transportation costs and logistics.

## **5.0 Maryland Air Quality Overview**

**Tad Aburn, MDE**

Mr. Aburn provided a summary of the air quality throughout the state over the past 10 years. Mr. Aburn stated that Maryland has a long history of air pollution, but the past 10 years have been encouraging. The two toughest pollutants have been ozone and fine particles. The data presented was collected from the worst monitor of the 30 monitors around the state and showed a significant drop below the health-based standard for fine particles. Ozone is still the most difficult problem and the current levels are right above the health-based standard.

In 2005 a famous Massachusetts Institute of Technology (MIT) study listed Baltimore as having the riskiest air to breath anywhere east of the Mississippi River, primarily because of fine particles. In 2008 the EPA designated Baltimore as the worst ozone area outside of California and Texas. Since then dramatic progress has been made and Baltimore is not even present in the Top 25 lists anymore. EPA has now finalized a Clean Data Determination and new standards were created in 2018. All air quality standards are still being met except for ozone. The 2018 ozone standard of 70 parts per billion (ppb) is being met in most of Maryland, except for a band which follows the Interstate-95 corridor. All areas in Maryland are in attainment of the 2008 75 ppb threshold. Fine particles are the most dangerous air pollutant, and Maryland is currently attaining the daily and annual fine particle standards across the state. Air toxins such as benzene, toluene, ethylbenzene, etc. have shown a downward trend as well.

Over the past 10 years, MDE has worked to reduce emissions of many pollutants. Six of the most critical pollutants include nitrogen oxide, sulfur dioxide, carbon dioxide, mercury, diesel particulate and volatile organic compounds (VOCs). Since 2005, Maryland has implemented some of the country's most effective emission reduction programs for power plants, cars and trucks, other small sources (dry cleaners, gas stations, etc.), and areas of specific interest (i.e. communities). For nitrogen oxide, emissions have been reduced and the sources of the emissions have changed. Currently mobile (i.e. cars, trucks, etc.) is the dominant emissions source.

Regarding control programs, the Maryland Healthy Air Act of 2006 is one of the most important programs along with the Maryland Clean Cars Act of 2007. Multiple diesel truck initiatives have been implemented as well. The Maryland Healthy Air Act was widely supported by the

environmental community and industry. Approximately \$2.6 billion was invested by Maryland utilities; the efforts helped to dramatically clean the air. There was a 90% reduction of mercury required by 2012 and this reduction was exceeded by 2010. Other pollutants like hydrogen chloride were reduced by 83% and direct particulate matter by 60%. The Maryland Clean Cars Act requires Maryland cars to be the cleanest allowed by law and includes requirements to push manufacturers to develop and sell “Zero Emission” vehicles. The emission reduction efforts are put on new vehicles, not vehicles that are already on the road, which slows progress. Regarding reducing diesel emissions, Maryland has invested over \$10 million to clean up diesel vehicles since 2004, which includes replacing older port dray trucks, retrofitting public school busses, replacing engines on Baltimore Harbor vessels, installing stop/start devices on locomotives and retrofitting emergency vehicles.

The Port Partnership is a Clean Air Partnership between MDE, MDOT, the Port of Baltimore, and many local communities. The agencies and communities work together to identify, develop and implement new, cost-effective programs that reduce emissions and increase energy efficiency. So far over \$4 million has been invested to replace older dray trucks with new cleaner vehicles and on other emission reduction clean air projects. Approximately \$2.4 million is expected to be spent on further reductions through dray trucks, marine vessels, and cargo handling equipment. Other new projects will also be funded using the Volkswagen settlement funds. Maryland has approximately \$76 million for project proposals. Proposals for projects are due May 6<sup>th</sup>. The settlement requires projects that will support electric vehicle implementation, diesel replacement and retrofit efforts, and much more. MDE is very interested in implementing community-based projects. Mr. Aburn stated that the Port of Baltimore partnership has been very successful with a large investment into diesel clean-up technology. By working in partnership, MDE and MDOT MPA can be more effective in finding funding for the project, especially federal funding from the Diesel Emissions Reductions Act (DERA).

Maryland has been one of the most aggressive states in addressing climate change. A plan will be released within the next month and, if approved, it will achieve a 40% reduction of Green House Gas (GHG) emissions by 2030. Mr. Pappas asked when the current GHG standards were enacted. Mr. Aburn replied that the current GHG standards were enacted in 2006. MDE has achieved the first step of 25% reduction in GHG emissions and are on track to complete the 2020 goal early. MDE is looking for new GHG emissions reduction ideas that support the State’s economy and create new jobs. The Climate Change Commission is focusing on ensuring that climate change programs benefit environmental justice areas and other underserved populations. For example, the Regional Greenhouse Gas Initiative (RGGI) provides energy support to low income ratepayers. The EPA strengthened the health-based standards for ozone and sulfur dioxide and the Maryland General Assembly enhanced the GHG Reduction Act requirements, both of which MDE must assist the state in meeting. Approximately 70% of Maryland’s air pollution is produced by other states. Currently Maryland’s petition under Section 126 of the Clean Air Act targets 36 Electric Generating Units (EGUs) in Pennsylvania, West Virginia, Ohio, Kentucky and Indiana and requires the EGUs to comply with Maryland’s 2015 nitrogen oxide regulations. The EPA denied the petition, and MDE will take the petition to court within the next two months. There are also new regulations regarding Municipal Waste Combustors, which are the toughest regulations east of the Mississippi.

Mr. Hickey asked what kind of power plants were the 36 EGUs. Mr. Aburn replied that they were coal burning power plants. Mr. Hickey asked if natural gas was powering many of the plants. Mr. Aburn replied yes but stated that the power plants operate under a cap and trade program. Under the program, when the plants were running frequently, they were required to run the controls to curtail the pollution, however, now that the plants do not run as frequently, they are not required to use their pollution controls.

Mr. Aburn highlighted key issues ongoing at MDE. MDE looks at how to reduce GHG emissions and how to adapt to the change in climate, sea level rise and potential increase in risk to public health. While truck traffic will increase, MDE still believes there will be progress with air emission reduction due to newer vehicles and ongoing air quality programs. Mr. Aburn stated that the Howard Street Tunnel Project will benefit Baltimore area air quality and help relieve congestion and truck traffic in the area. Mr. Aburn recommended that individuals become involved with the local metropolitan planning organization process. Mr. Aburn stated that Maryland is the third or fourth most vulnerable state to sea level rise, and that Maryland has more coast than California. Multiple programs are investigating coastal buffers, and Mr. Aburn encouraged HT attendees to view the MDE website for more information. Regarding citizen science and monitoring partnerships, Johns Hopkins University has received a grant and will be conducting an extensive sensor project across Baltimore the next few years. MDE is working in partnership for this project which will track individuals throughout the day to determine where they encounter the most air pollution (indoors, outdoors, etc.) and investigate hot spots.

Finally, Mr. Aburn briefly discussed the Ozone Water-Land Environmental Transition Study (OWLETS). Ozone levels are highest over the Chesapeake Bay due to the decreased mixing height (i.e. the volume of air over the water). OWLETS is further investigating the high levels of ozone over the Chesapeake Bay and determine where it is coming from. Hart-Miller Island is being used as the center of the research.

Mr. Haid asked if MDE was working with PJM. Mr. Aburn replied yes and stated that a partnership is currently ongoing to regulate which energy sources are running on the hottest days of the year and encouraging the cleanest energy sources to run during those times. Mr. Haid stated that coal plant control units are not easily powered on and off and asked if the coal power plants are able to run without emission controls. Mr. Aburn replied that in Maryland power plants must run their emission controls constantly, but other states do not have those restrictions. Mr. Denney stated, having heard Mr. Aburn's OWLETS presentation, that meteorology affects the ozone in that area, rather than a pollution source. Mr. Aburn replied that there are a few factors which affect the higher ozone above the bay phenomenon; meteorology, the mixing height above the Chesapeake Bay, and the chemistry in the air above the bay which MDE is trying to investigate and understand. Mobile sources such as vehicles traveling along the Interstate-95 corridor, peaking energy units, and marine engines may influence the ozone over the Chesapeake Bay as well.

Mr. Stainman asked how advanced are MDE's methods for detecting methane leaks. Mr. Aburn stated that there are three new regulatory initiatives dealing with methane leaks. One regulation is focused on landfills, wastewater treatment plants, and natural gas to natural gas infrastructure. There has been an advancement in measuring and detecting technology so the timing between the



leak detection and repairs are improving dramatically. Mr. Haid asked if MDE was investigating infrared cameras to detect methane. Mr. Aburn replied yes.

## **6.0 MDOT MPA Air Quality Initiatives**

**Chandra Chithaluru, MDOT MPA**

Mr. Chithaluru informed the HT members about the efforts MDOT MPA Safety, Environmental, and Risk Management (SERM) Department strategizes to improve air quality. MDE and MDOT MPA partnered to form an air quality workgroup which meets monthly and has been able to communicate, investigate and reduce air impacts at the Port of Baltimore facilities. The workgroup also strategizes the best way to obtain funding for the various projects.

Regarding diesel emissions reductions, there are different engine tiers from Tier 0 to Tier 4. Tier 0 are engines which are from 1990 or prior, while Tier 4 engines have the most advanced diesel emissions reduction technologies integrated into the engines. A single Tier 1 engine emits the same amount of emissions as 25 Tier 4 engines. Since the Dray Truck Replacement Program was enacted in 2009, 188 dray trucks have been replaced; \$11 million in funding has been received from federal grants to provide rebates for truckers for a new truck replacement. Approximately 100 more dray trucks will be replaced over the next few years. Grant funds are also used to upgrade cargo handling equipment (CHE) and marine engines. The replacements of dray trucks, CHE, and marine engines have seen an approximate lifetime reduction of 3,500 tons of nitrous oxides. In 2018, MDOT MPA was awarded \$2.45 million from the DERA grant which should replace 30 pieces of CHE, 35 dray trucks, and four marine engines. An application has been submitted for 2019 for approximately \$2.5 million to replace a mixture of CHE and dray trucks. MDOT MPA is expecting approximately \$3.28 million to upgrade the MDOT MPA's diesel fleet and approximately \$2 million for the dray truck replacement program from the Volkswagen Settlement funds.

Between 2012-2016, the cargo has increased to the Port of Baltimore by 10%, while emissions have decreased on an average of 19%. SERM conducted an emissions study and investigated the profile of the Port equipment (i.e. dray trucks, CHE, marine engines) to determine if the modernization assisted in reducing emissions. In 2012, during the first emissions study, there was a total of 159 terminal tractors, which had increased to 184 terminal tractors in 2016. For example, in 2012, only 11 Tier 4 terminal tractors were available and used 4.7% of the time, but by 2016 there were 50 available and were used almost 50% of the time. Mr. Denney asked for an explanation of a terminal tractor. Mr. Chithaluru replied that a terminal tractor is a short flatbed with a smaller cab that moves containers from one place to another in the terminals. Mr. Chithaluru stated that SERM has also been investigating projected reductions based on modelings which incorporated growth percentage and modernization of equipment. If the trend of upgrading the equipment is continued, then nitrogen oxide emissions will be reduced even with 5% growth and Particulate Matter emissions were shown to be greatly reduced.

Reductions of emissions includes facility upgrades as well. As of 2018, lighting upgrades, heating, ventilation and air conditioning (HVAC) renovation, and other upgrades have reduced energy consumption by approximately 5,500 megawatt hours (Mwh) which is equivalent to approximately 4,000 metric tons of carbon dioxide emissions. All of these efforts are being done to reduce the footprint of the air impacts from by MDOT MPA terminals. SERM is also working on innovative projects such as the Algae to Energy fuel cell project and investigating the incorporation of the

fuel cells at maintenance shops. Additionally, prior to 2015 shipping lines were required to use fuel with 1% sulfur content within the Emission Control Area (ECA), which extends 200 nautical miles from shore. In January 2015 the sulfur limit in the fuel was reduced to 0.1% sulfur content, and due to the new standard, the sulfur emissions were reduced by approximately 90%.

Mr. Denney stated that the 188 dray trucks which have been upgraded move throughout the City of Baltimore and Baltimore County, therefore the communities also receive the benefit of emission reductions.

### **7.0 Harbor Development Update**

**Kristen Fidler, MDOT MPA**

Ms. Fidler stated that the Cox Creek Expansion (CCE) project is moving forward with significant progress. Building 201 will be completely removed by the end of summer 2019 and the Operations and Maintenance building will be fully constructed by fall 2019. MDOT MPA is working with the Cox Creek Citizens Oversight Committee regarding community enhancements as part of the mitigation for the CCE project construction. At Masonville DMCF, the dike raising to +18 ft Mean Lower Low Water is underway and will be completed by the end of 2019. Numerous inflows were ongoing while dike raising was occurring. The Living Classrooms Foundation, as well as the other partners at Masonville Cove, have activities and events planned to celebrate a Decade of Dedication at Masonville Cove. MDOT MPA is trying to increase the number of visitors to the site, but the efforts are limited by the presence of two nesting bald eagles who have taken up residence at the site. Events at Masonville Cove include extended hours on the first Thursday of every month, outdoor yoga, etc. The public notice for the permit application for dredging the Seagirt Berth 3 to -50 feet was posted on April 15<sup>th</sup>.

### **8.0 Upcoming Meetings**

**Steve Pattison**

Mr. Pattison stated that the next HT meeting is a combined meeting of the Harbor Team and the Dredged Material Management Program Citizens Advisory Committee and is scheduled for August 7<sup>th</sup>.

### **9.0 Adjourn**