EXHIBIT 1

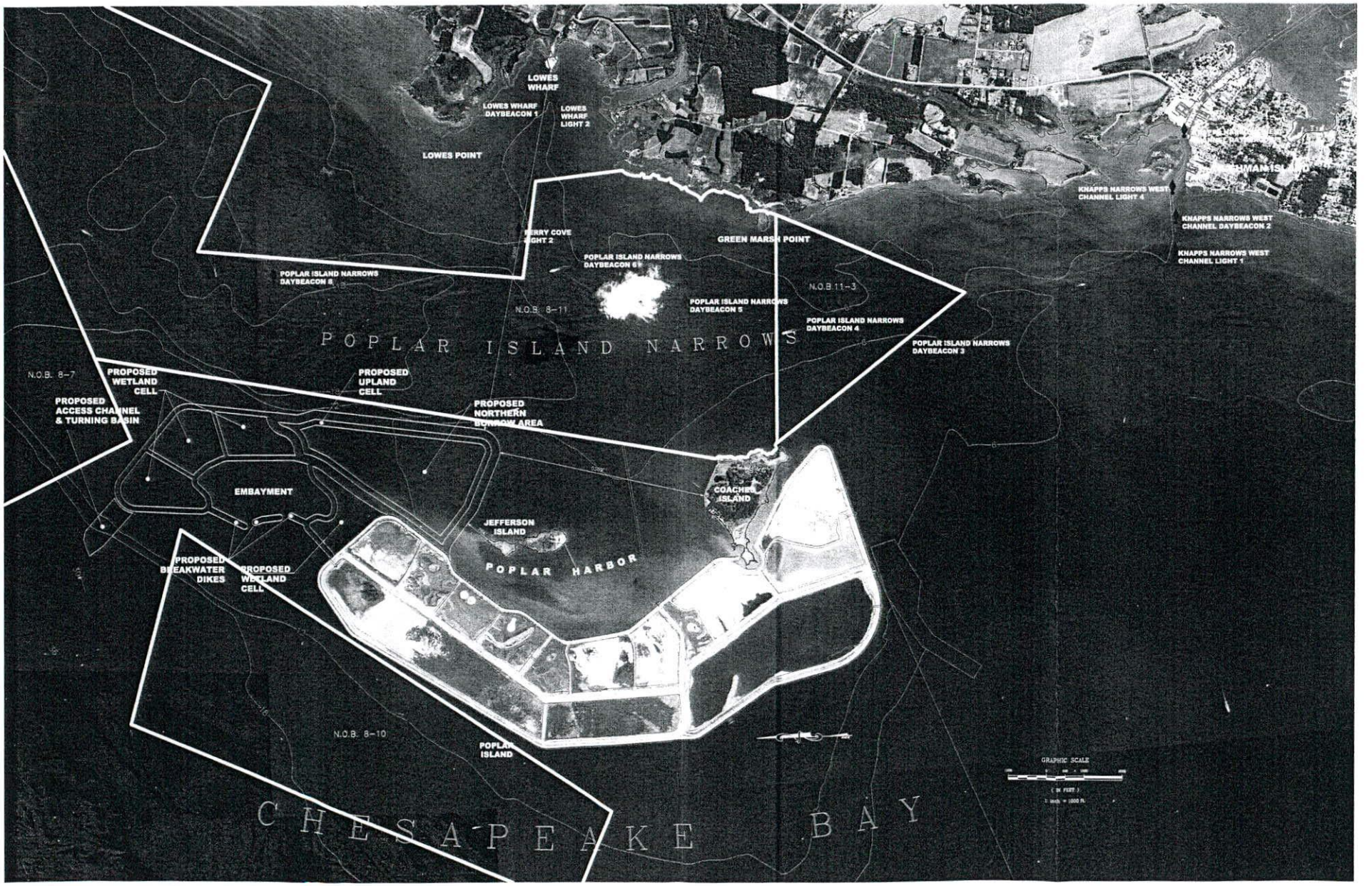
LOWES WHARF
LOWES WHARF DAYBEACON 1
LOWES WHARF LIGHT 2
LOWES POINT
KNAPPS NARROWS WEST CHANNEL LIGHT 4
KNAPPS NARROWS WEST CHANNEL DAYBEACON 2
KNAPPS NARROWS WEST CHANNEL LIGHT 1
GREEN MARSH POINT
POPLAR ISLAND NARROWS DAYBEACON 6
POPLAR ISLAND NARROWS DAYBEACON 8
N.O.B. 11-3
N.O.B. 8-11
POPLAR ISLAND NARROWS DAYBEACON 5
POPLAR ISLAND NARROWS DAYBEACON 4
POPLAR ISLAND NARROWS DAYBEACON 3
POPLAR ISLAND NARROWS
N.O.B. 8-7
PROPOSED WETLAND CELL
PROPOSED UPLAND CELL
PROPOSED ACCESS CHANNEL & TURNING BASIN
PROPOSED NORTHERN BONDOW AREA
EMBAYMENT
COACHER ISLAND
JEFFERSON ISLAND
POPLAR HARBOR
PROPOSED BREAKWATER DIKES
PROPOSED WETLAND CELL
N.O.B. 8-10
POPLAR ISLAND
GRAPHIC SCALE
CHESAPEAKE BAY

EXHIBIT 2

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Charles C. Deegan
Chairman

Ren Serey
Executive Director

STATE OF MARYLAND
CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS

1804 West Street, Suite 100, Annapolis, Maryland 21401
(410) 260-3460 Fax: (410) 974-5338
www.dnr.state.md.us/criticalarea/

January 20, 2016

Sheila C. McDonald, Esq., Executive Secretary
Maryland Board of Public Works
80 Calvert St
Annapolis, MD 21401

RE: Tidal Wetlands Case No. 15-0131
Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island

Dear Ms. McDonald:

At its meeting of January 6, 2016, the Critical Area Commission for the Chesapeake and Atlantic Coastal Bays approved the proposed 575-acre expansion of the Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island. A condition placed on the approval required the Maryland Port Administration to provide Chairman Charles Deegan with information regarding the preservation of the 12 previously constructed submerged rock islands in the northeast corner of Poplar Island and the status of Site 123 as an alternative site for the placement of dredged material and that he, in turn, forward the information to the Board of Public Works for its consideration.

Enclosed, please find the information provided by the Port for the Board's consideration in their deliberations on the Tidal Wetlands Case referenced above. If you have any questions or concerns, please contact me at leeanne.chandler@maryland.gov or 410-260-3477. Thank you.

Sincerely,

LeeAnne Chandler

LeeAnne Chandler
Science Advisor

cc: William Morgante, BPW, Wetlands Administrator
Ren Serey, Executive Director

Larry Hogan
Governor
Boyd K. Rutherford
Lieutenant Governor

Maryland Port Commission
Pete K. Rahn
Chairman

Brenda Dandy
Donald C. Fry
Dr. Donté L. Hickman, Sr.
David M. Richardson
Walter Tilley, Jr.
Theodore G. Venetoulis

James J. White
Executive Director

January 20, 2016

Ms. LeeAnne Chandler
Maryland Critical Area Commission
Chesapeake and Atlantic Coastal Bays
1804 West Street Suite 100
Annapolis, Maryland 21401

Re: Response to Condition number three (3) of the Critical Area Commission Approval Letter dated January 7, 2016.

Dear Ms. Chandler:

Per the Commission's request, please find included an explanation of why Site 123 (correction of the designation of Site 192 in the Commission's Approval Letter dated January 7, 2016), Artificial Island Creation at the mouth of the Patapsco River, was not chosen as a beneficial use site. Please also find attached a drawing of the planned relocation of the displaced rock reef structures due to the construction of Poplar Island Expansion; the Army Corps of Engineers plans to replace the rock reef structures from the northeastern side of Poplar Island to the northwestern side of the Expansion.

Background

Maryland's Dredged Material Management Master Plan (The Master Plan, 1990) was established to plan and manage for twenty years of placement within the Chesapeake Bay. Since 1990, the program has evolved; but it still develops a long-term dredging and dredged material placement plan for the Port, including the identification of potential new placement sites. Maryland's Dredged Material Management Program (DMMP) incorporates input from numerous stakeholders and the process is organized around an Executive Committee, a Management Committee, a Citizens' Advisory Committee, and numerous ad hoc working groups. Representatives from federal agencies including the U.S. Army Corps of Engineers Philadelphia District, U.S. Army Corps of Engineers Baltimore District, U.S. Environmental Protection Agency Region III, U.S. Fish and Wildlife Service, National Marine Fisheries Service and the NOAA Chesapeake Bay office, state and local agencies including the MPA, Maryland Geological Survey, Maryland Department of Natural Resources, Maryland Department of the Environment, as well as organizations such as the Maryland Watermen's Association, the Upper Bay Charter Captains Association, Ducks Unlimited, Chesapeake Bay Foundation, and Maryland Saltwater Sport Fisherman's Association were formed into an advisory group, called the Bay

Enhancement Working Group (BEWG). The DMMP Committees and working groups continuously identify, study, review, and prioritize potential placement sites.

In addition to the state's DMMP, the federal Dredged Material Management Plan (Federal DMMP and Tiered Environmental Impact Statement (EIS)) (2005) addresses the requirements of all applicable environmental statutes for all placement options considered including the requirements of the National Environmental Policy Act (NEPA), Section 404 of the Clean Water Act, Section 103 of the Marine Protection, Research and Sanctuaries Act, and the Coastal Zone Management Act.

The MPA has been working in conjunction with the Baltimore District of the U.S. Army Corps of Engineers (Corps) to study options for the beneficial use of dredged material to restore existing island habitat in the Chesapeake Bay. MPA and the Corps currently have one island habitat restoration project under construction at the Poplar Island Environmental Restoration Project (PIERP) located off of the eastern shore of Talbot County. Due to the need for additional dredged material placement capacity, the MPA and the Corps have sought additional beneficial use island restoration opportunities in the Chesapeake Bay. As a result, the Corps developed a Tiered EIS that recommends PIERP expansion and Mid-Chesapeake Bay Island (James and Barren Islands) restoration as the best potential project candidates to beneficially use dredged material to restore island habitat.

The General Reevaluation Report and Supplemental Environmental Impact Statement for the Poplar Island Environmental Research Project (PIERP SEIS) was developed by the Corps in partnership with MPA, and finalized in 2005. The PIERP SEIS recommends expanding PIERP by restoring an additional 575 acres of island habitat. The area will consist of 206 acres of wetland habitat, a 110 acre embayment and 259 acres of upland habitat.

Site 123

The Master Plan (1990) analyzed 162 potential sites, including modifying existing sites, upland sites, land creation, open water sites, shoreline stabilization/wetland creation, reuse of dredged material, borrow pit fill and cover, and ocean placement. One site, known as Site 123, an Artificial Island Creation site, was considered at the mouth of the Patapsco River for Baltimore Harbor Inner and Outer Channels (excluding the C&D and Approach Channels in the mainstem of the Bay). In order to rank the sites to determine which incurred the highest benefit there were two screening phases. Phase I consisted of a geographical limit to potential placement sites. Phase II screening included costs and environmental factors which reduced the initial 162 site list to 31 sites. Phase II screening factors included water resources, physical features, ecology, costs, and social/public welfare. During the ranking process, Site 123 scored one of the lowest combined scores of 22 with the highest being 44. Favorable features of Site 123 included few resources affected because of an already degraded system, large capacity, close to channels being dredged, and already a dredged material receiving area. Unfavorable features included: close to

residential area where opposition existed, if not designed properly there could be negative effects on flow due to the location within the river and may confine freshwater, and small boat traffic may be adversely affected.

During the 2005 federal DMMP/Tiered EIS development, the BEWG, which participates in the screening and ranking of the placement options, agreed that alternatives that were illegal or faced significant public opposition should not be included in suites of alternatives being considered to meet the 20-year placement needs of the Port of Baltimore. The BEWG felt that those alternatives, although not illegal, faced such stiff opposition from the public and/or regulators that they could not succeed in providing sufficient placement within the 20 years covered by the DMMP. For example, in 2002, 2003 and 2004 legislation was introduced in the Maryland General Assembly specifically prohibiting the use of dredged material for artificial island creation. Although the legislation was unsuccessful and never enacted, it indicated that if such an alternative as the artificial island creation of Site 123 was recommended, there would likely be strong public opposition and a significant degree of acceptability risk. For all of these reasons, Site 123 was removed from further consideration.

Consistency with Maryland Statute

Furthermore, current Maryland law, as established by the Dredge Material Management Act of 2001, only allows for the placement of dredged material in open water for one of five authorized "beneficial use" purposes. While restoration of islands is included in the definition of beneficial use, the creation of islands is not. (Md. Code Ann., Environment Article § 5-1101)

Rock Reef Structures

Sixteen (16) total rock reef structures were placed around the northern portion of Poplar Island; eight (8) on the northwest side adjacent to the upland cells and eight (8) on the northeast side of the island adjacent to the wetland cells (see attached 2015 Master Plan). Poplar Island Expansion will cause the displacement of the eight northeastern rock reefs. The Corps plans to relocate these rock reef structures on the northwestern side of Poplar Island Expansion (see attached figure).

Please call me at (410) 385-4465 if you have any questions or concerns.

Sincerely,

Chris Correale

Chris Correale
Director, Harbor Development
Maryland Port Administration

Enclosure
cc: Holly Miller, Shawn Kiernan, Kristen Weiss, MPA

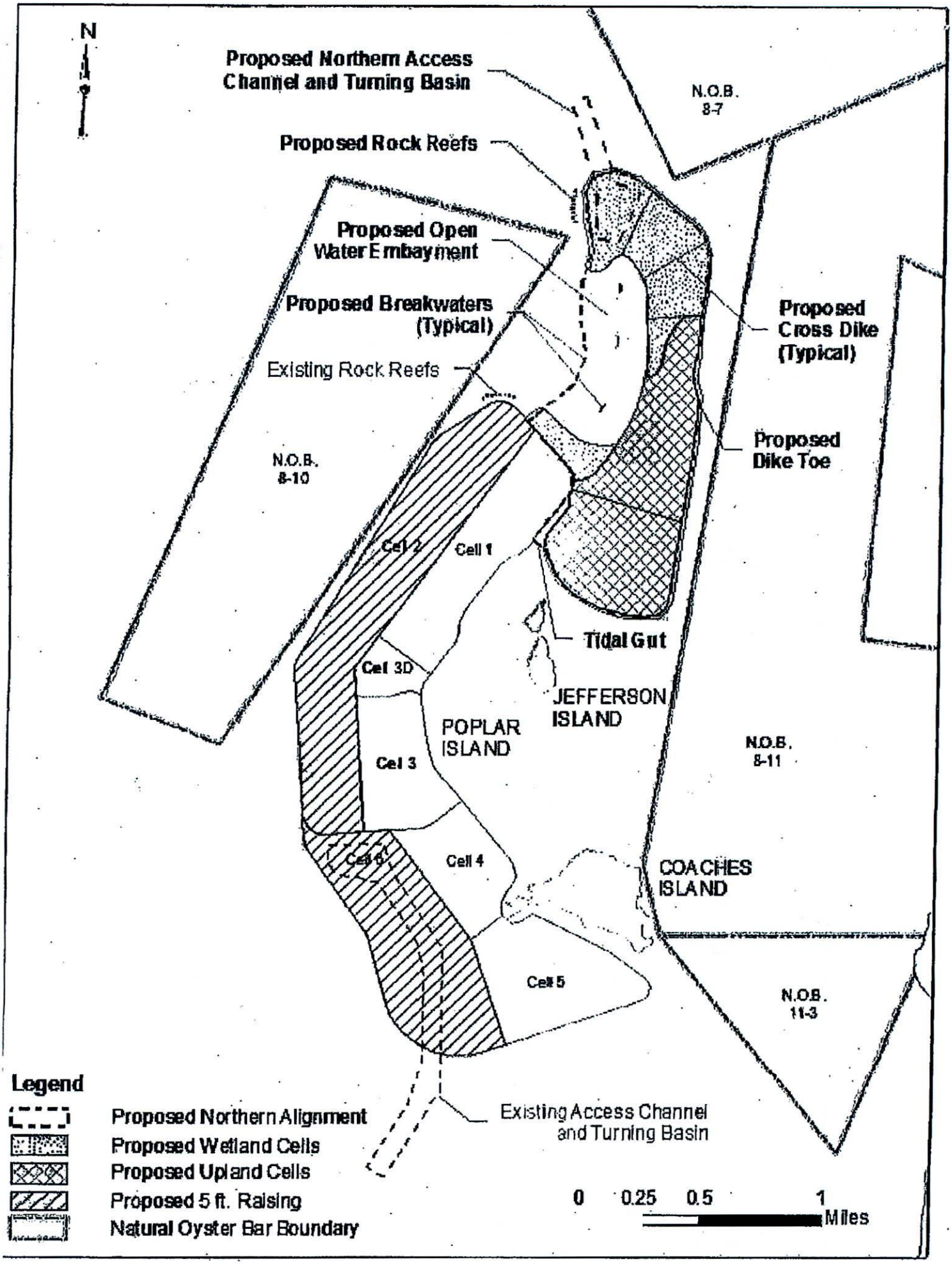
N
Proposed Northern Access Channel and Turning Basin
Proposed Rock Reefs
Proposed Open Water Embayment
Proposed Breakwaters (Typical)
Existing Rock Reefs
N.O.B. 8-7
N.O.B. 8-10
N.O.B. 8-11
N.O.B. 11-3
Proposed Cross Dike (Typical)
Proposed Dike Toe
Cell 1
Cell 2
Cell 3D
Cell 3
Cell 4
Cell 5
Cell 6
Tidal Gut
JEFFERSON ISLAND
POPLAR ISLAND
COACHES ISLAND
Existing Access Channel and Turning Basin
Legend
Proposed Northern Alignment
Proposed Wetland Cells
Proposed Upland Cells
Proposed 5 ft. Raising
Natural Oyster Bar Boundary
0 0.25 0.5 1
Miles

EXHIBIT 3

Larry Hogan
Governor
Boyd K. Rutherford
Lieutenant Governor

Maryland Port Commission
Pete K. Rahn
Chairman

Brenda Dandy
Donald C. Fry
Dr. Donté L. Hickman, Sr.
David M. Richardson
Walter Tilley, Jr.
Theodore G. Venetoulis

James J. White
Executive Director

September 18, 2015

Mary Phipps-Dickerson
Maryland Department of the Environment
Tidal Wetlands Division
1800 Washington Blvd
Baltimore, MD 21230

RE: AI Number 75545
Tidal Wetland License Application Number 15-WL-0131

Dear Ms. Phipps-Dickerson,

Per your request, the Maryland Port Administration (MPA) is providing responses to the comments and questions that were posed during the public notice period held from June 15, 2015 through July 15, 2015 and at the Public Hearings held on July 7, 2015 and July 8, 2015. Please find responses below:

1. **Water quality:**
   a. **Concerns that the dredged material brought to Poplar Island will contain contaminants that will leave the site and negatively impact surface or groundwater.**

Response:
Dredged material brought to Poplar Island comes from the Bay Channels outside of Baltimore Harbor (defined as the area west of the North Point-Rock Point Line). The U.S. Army Corps of Engineers (USACE) tests the dredged material every three years to ensure it is clean and suitable for habitat development (the data is available upon request). Testing of the dredged material includes:

- Chemical concentrations of semivolatile organic compounds (SVOCs), metals (including mercury), chlorinated pesticides, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCBs) congeners, dioxin/furan congeners, butyltins, cyanide, total sulfides, chromium reducible sulfur (CRS)
- Effluent elutriates, which simulate the potential release of dissolved chemical constituents during the dewatering process from a containment facility are conducted to characterize the chemical properties of the effluent that would potentially be discharged from a placement facility.
- Acid volatile sulfides/simultaneously extracted metals (AVS/SEM) (sediment only), hexavalent chromium (sediments only), ammonia, total Kjeldahl nitrogen (TKN), total phosphorus, nitrate+nitrite, and total organic carbon (TOC) are tested in sediment, site water, and elutriate samples.

Extensive interior water quality monitoring conducted prior to discharge and exterior monitoring samples are collected just offsite within Poplar Harbor act as safeguards which help to ensure any impacts on surrounding surface and groundwater are minimized. The normal operation of Poplar

Island requires that an extensive list of water quality parameters must be met prior to the discharge of water from the site. Along with turbidity and pH, onsite ponded water is tested for metals concentrations before discharge occurs to ensure water is within the State Water Quality Standards (SWQS) for metals concentrations and meets all other water quality parameter limits, as defined within the Maryland Department of the Environment (MDE) issued Water Quality Certificate (a copy is available upon request). If all permit limits are not met, onsite ponded water is held within the containment ponds.

As described within the site's MDE-approved discharge monitoring plan (copy available upon request), exterior samples (collected 25 yards from a discharging spillway) are collected on a quarterly basis. These results are compared to a reference site located outside of Poplar Harbor to show any impacts, or lack thereof, that discharge from Poplar Island has on the surrounding water quality.

b. How many times has the current site discharged water above maximum contaminant levels? What were the contaminants?

Response:
The MPA monitors water quality in accordance with the MDE approved Discharge Monitoring Plan. While the SWQS are established for the end of the pipe concentrations, meaning after the water has been discharged, Poplar has multiple sampling locations for each discharging spillway; one before the impounded water leaves the site, one 25 yards off the spillway and a water quality reference site outside Poplar Harbor. The 25 yard exterior and reference samples are conducted quarterly to attempt to show any impacts, or lack thereof, that discharge from Poplar Island has on the surrounding water quality. Of the over 4,800 samples collected at spillway structures on Poplar Island since 2001, 284 have had contaminants (priority pollutant metals) results that were above the SWQS. All of these samples were collected from inside of the site and the amount of discharge varied greatly.

As explained above, more significant to the question is the number of contaminated exterior samples collected within Poplar Harbor approximately 25 yards from the discharge point. Since monitoring associated with dredged material inflow began in 2001, there have been 27 samples collected on the exterior of the site during discharge which exceeded SWQS; all reported exterior sample exceedances were for copper (Cu). The SWQS for dissolved Cu is 6.1 ppb. The highest reported sample was 14.0 ppb, but most samples were less than 10.0 ppb. Results before 2007 are believed to have been skewed high due to salt water interference during analysis of metals concentrations, and all except for one of the exterior sample exceedances were collected prior to 2007. Starting in 2007, the Maryland Environmental Service (MES) contracted a laboratory that uses reaction cell technology to analyze metals samples. Reaction cell technology is used to remove the high interference and skewed results noted when testing saline water. Since initiation of reaction cell technology to analyze metals samples; only one exterior sample was reported to have elevated Cu above SWQS.

c. Could contaminants leak from the cells and contaminate nearby potable wells?

Response:
There are only two known nearby potable wells that may be impacted by potential contamination. A well drilling report for Jefferson Island completed by the Maryland Geological Survey (MGS) in 1983 (available upon request) indicates that there are significant clay layers present at 3-8 feet,

22 – 70 feet, 90 – 115 feet, and 220 - 260 feet. These layers serve to isolate the aquifer (known as the Aquia Formation Aquifer) from potential surface contamination.

Driller logs included with the Jefferson Island MDE Water Management Administration approved permit to drill well (available upon request), shows that there was a well drilled in December 2001 that replaced an existing well. The well was screened at 310-320 feet below the surface which puts it within the isolated Aquia Formation Aquifer. A Coaches Island well application was submitted to MDE Water Management Administration in August 1983, but was apparently never drilled, as the application notes "cancelled never drilled" (available upon request). Finally, Poplar Island wells, also permitted by MDE, specify that water will be drawn from the Aquia Formation Aquifer.

d. Will water discharged from Poplar Island cause the water off of Jefferson Island be unsafe for swimming?

Response:
No. There have been no contaminants results above SWQS from water collected at the site's exterior monitoring points (25 yards off of a discharging spillway) during times of site discharge since 2009. Results before 2007 are believed to have been skewed high due to salt water interference during analysis of metals concentrations. After this time, reaction cell technology was implemented at the laboratory conducting analysis to remove salt water interferences. Quarterly monitoring of the exterior monitoring points and the reference site outside of Poplar Harbor show no significant difference in water quality associated with the exterior of the site and the reference location.

e. What procedures are proposed for monitoring for high turbidity levels during construction? Is there a plan for how to respond if turbidity levels are higher than acceptable?

Response:
Turbidity monitoring conducted during Phase I and Phase II of the original Poplar Island project construction indicated that turbidity levels quickly diminish to background levels, except during periods of sustained high winds. However, turbidity levels were consistent with reference locations outside of the established mixing zone.

Turbidity monitoring within the mixing zone will also be conducted during construction of the Poplar Expansion project. Should turbidity levels increase beyond the approved water quality limits, construction will be halted until results come back into compliance. Additionally, a sediment and erosion control plan for the Poplar Expansion project will be approved by MDE in advance of construction initiation, and the project construction sequence for perimeter dikes progresses such that stone toe dikes are built 200 ft out in front of sand placement, thereby acting as a turbidity curtain.

During construction for the original Poplar Island, the Maryland Geological Survey (MGS) conducted pre - and post-construction side-scan sonar monitoring of the project's adjacent oyster beds and reported that bottom conditions were similar before and after, with no evidence of sediment accumulation. Similarly, MGS will conduct pre - and post-monitoring of the project's adjacent oyster beds using side-scan sonar to document any observed increase in siltation due to dike construction.

f. Will incoming dredge material be sampled to evaluate the level of contaminants?

Response:
Yes, the dredged material is tested every three years as noted in the response to question 1a. above.

2. **Erosion – Sedimentation Problems:**

a. Will the expansion lead to increased erosion of Jefferson Island or the mainland waterfront properties? If so, will any assistance be provided to prevent or address the increased erosion?

Response:
Poplar Island works as a barrier island, similar to Assateague Island. Jefferson Island and the shoreline of the Eastern Bay are primarily in the lee of Poplar Island based on the primary wind fetches of west, northwest, southwest and south. Because of this, Poplar Island is expected to reduce wave heights that are impacting Jefferson Island and the Eastern Bay shoreline in the lee of Poplar Island. The USACE completed hydrodynamic model simulations for this project's General Re-evaluation Report (GRR) and Supplemental Environmental Impact Statement (SEIS) (dated September 2005). The model results show that wave reduction is produced in the lee of Poplar Island which, in turn, reduces the erosion forces to Jefferson Island and the Eastern Bay shoreline. Therefore, no adverse effects or increased erosion to Jefferson Island or the Eastern Bay shoreline are anticipated as a result of the Poplar Island Expansion project. As increased erosion is not expected, assistance is not anticipated to be needed.

Beneficial effects of the expansion include a reduction in erosion to Jefferson Island and Coaches Island and a resulting decrease in sedimentation in Poplar Harbor. This reduction in sedimentation will help increase water clarity in Poplar Harbor and surrounding Jefferson Island creating beneficial habitat for submerged aquatic vegetation.

b. Will the expansion lead to increased siltation of the federal channel and entrance to Lowes Wharf Marina?

Response:
Sediment transport modeling conducted as part of the 2005 GRR/SEIS indicated that construction of the expansion would create an area of increased quiescence east of the project, which would result in decreased deposition within the deeper areas east of the project within Poplar Island Narrows (including the federal channel and Lowe's Wharf). Based on these modeling results, construction of the expansion should not lead to increased siltation of the federal channel and the entrance to Lowe's Wharf.

3. **Impact to residences, businesses and boaters:**

a. What is the impact to adjacent residential and business property owners who will experience a significantly reduced bay view? Can the expansion be revised to minimize this impact?

Response:
Anticipated visual impacts were evaluated in detail during preparation of the GRR/ SEIS by using field reconnaissance and GIS. The GRR/SEIS determined that the visual impact to adjacent residential or businesses on the Eastern Shore only impacted 15 -16 parcels, and the impact was largely imperceptible because it only had a small impact on the long water views of the parcels.

The GRR/ SEIS determined that the proposed expansion would have more of an impact on the bay view of residences on Jefferson Island because the proposed upland dike would be in the foreground views. The study found that the Jefferson Island view would go from 71% water and 29% land to 51% water and 49% land.

The proposed expansion site position and alignment cannot be revised. Alternative positioning and alignments for the expansion site were investigated during the development of the GRR/ SEIS, but were also further investigated during multiple supplemental studies that were conducted from 2006 – 2009. The proposed expansion site was selected and confirmed as the best alternative based on foundation conditions, availability of quality borrow materials within the proposed footprint (to mitigate impacts to natural bay bottom), avoidance of cultural and environmental resources, and optimization of dredged material capacity.

b. What is the impact on watermen and recreational boaters having to travel farther to the north and increasing the length of boating routes to access Lowes Wharf Marina?

Response:
Boaters utilizing the area around the project during construction will be impacted by barge traffic, noise, and visual disturbances. Boats lingering will have short term effects however those wishing to minimize these impacts may utilize various alternative boating areas in the vicinity of the island particularly in Eastern Bay and the Miles River. Signs will be posted to assure the safety of the boaters due to any submerged hazards. The impact to traveling a half a mile longer around the expansion project is believed to incur loss of time and a potential to minimally increase fuel costs.

c. Are odor problems expected? Are there plans to manage the odors?

Response:
Odor problems did not exist during the first phases of the original Poplar Island project construction (Phase I or Phase II) therefore no odor problems are expected with the lateral expansion.

d. What impact is expected from the increased traffic from barges as well as the recreational and educational tours that are proposed?

Response:
The SEIS estimated 175 tours per year based off of the current Poplar Island tour schedule and tours are not expected to increase with the expansion. Using an approximately ten year average, the site has hosted 79 general tours, 62 student tours, and 6 birding tours (birding tours recorded for an average of 7 years) per year. This average is under the estimated number for the original project totaling 147 tours per year. The 2015 tour schedule is on the same trajectory to host approximately 150 tours.

Recreational opportunities include recreational fisheries enhancements, interpretive nature trails, or other passive recreation opportunities. The Talbot County Commissioners have addressed additional recreational benefits in keeping with the project's environmental restoration focus. Recreation will only be implemented in as far as they do not adversely impact the ecosystem restoration purpose. Beneficial impacts to the land and water use occur through increased tourism to the area.

For Talbot County, the economic analysis showed that of the projected $340 million for the project spending over 12 years, approximately $142.9 million or approximately $11.9 million annually will be spent in direct costs (generated by the project itself) in the vicinity of the island restoration site on construction, habitat development and long-term maintenance and monitoring. Some of this spending could leak outside the county due to the narrow economic base of the county however; this spending is estimated to generate approximately 87 direct full time jobs if the entire amount was spent in the county. Due to the potential to leak, a portion of the jobs could be spread to nearby counties. Indirect costs are those that were generated to businesses that supply materials and goods to the project. This spending is estimated to leak outside the county. The total number of jobs estimate to be brought to the county is estimated at 184 full time employees. After review of the total direct, indirect and induced spending the economic effect of the project on the county is estimated to be approximately $19 million.

Boaters utilizing the area around the project during construction will be impacted by barge traffic, noise, and visual disturbances. Boats lingering will have short term effects, however for those wishing to minimize these impacts there are various alternative boating areas in the vicinity of the island particularly in Eastern Bay and the Miles River. Signs will be posted indicating any submerged hazards to assure safety of the boaters.

4. **Increase in disease or vectors:**
   a. **Would the expansion lead to an increase in the number of birds at the islands that would cause damage to the trees or spread disease?**

Response:
Poplar Island follows a Wildlife Disease Coordination Plan that was drafted and implemented in coordination with the U.S. Fish and Wildlife Service (USFWS) and the Maryland Department of Natural Resources (DNR) representatives. The plan outlines steps to be taken to identify when onsite disease-related mortality events occur and the response procedures to be followed including the processing of carcasses for disease analysis, care for live sick birds, and evaluation for the need for public notice. All steps are implemented and overseen by onsite representatives from the USFWS.

Although several disease events have been identified on Poplar Island, all identified diseases are naturally occurring and commonly found within wetland environments and/or within large bird populations. The near constant presence of scientists and other observers has led to a situation where Poplar Island's wild bird populations are more highly monitored than would be the case on other wild lands and nature preserves, therefore disease events are identified more frequently than other areas that attract such large numbers of birds. During migration periods, Poplar Island (an important stop-over of the Atlantic Flyway; the bird migration route that follows the Atlantic Coast) attracts many thousands of federally protected birds on their annual migrations. For instance, a record numbers of waterfowl were recorded in late December 2013 and early January 2014, when approximately 37,000 waterfowl were counted in Cell 6 (a 245 acre holding pond on the southwest of the site) alone. The proposed expansion is expected to increase the site's usage by birds, and thereby increase hunting potential in the area.

Damage to trees caused by certain birds cannot be directly associated with the construction of Poplar Island, but rather natural migration. Double-crested cormorants are known to damage trees. Poplar Island's resident cormorant colony is federally protected and monitored annually by USFWS. The size of the colony of cormorants on Poplar Island will continue to be managed by USFWS.

b. Is the expansion expected to increase the mosquito population in the area?

Response:
There is the potential that salt-marsh mosquito populations will increase due to the increase in potential mosquito habitat with the additional creation of 207 acres of wetlands. Onsite staff is the most directly affected by abundant mosquito populations and reduction in their population is considered a goal for the site staff's health and comfort as well as the greater community.

In February 2008 the Poplar Island Project Team met with Talbot County government officials and a concerned Talbot County resident to discuss the possible effects mosquitoes from Poplar Island might be having on nearby mainland communities. The meeting attendees agreed that a proactive approach to mosquito control needed to be undertaken at Poplar Island and noted that this approach would greatly reduce any possible mosquito problems. Therefore a Mosquito Monitoring Plan was implemented in April 2008 and continued through the 2011 mosquito season in order to collect background information to better inform control and management decisions. Lessons learned from this monitoring included identifying the types of mosquitoes most abundant on Poplar Island, the habitats they find most attractive, and identifying site management techniques that could limit the mosquito population. The four years of mosquito population data indicates that populations on Poplar Island are generally similar from year to year, with occasional weather related increases in populations during the later part of the summer. Increases in populations at Poplar Island appear to coincide with increases noted at similar habitats monitored throughout the region, according to Maryland Department of Agriculture (MDA) data.

Onsite monitoring has shown that Poplar Island has four main mosquito species, although seven species have been identified. Two of the salt-marsh mosquitoes, *Culex salinarius* and *Anopheles crucians/bradleyi*, are primarily crepuscular (active at twilight) and nighttime active species (although the *Anopheles sp.* also actively bites on overcast days) with flight ranges of 1-2 miles. The other two more common salt-marsh species, *Ochlerotatus sollicitans* and *Ochlerotatus taeniorhynchus*, are aggressive biters during daytime, crepuscular hours, and at night. These two species have flight ranges of 10 or more miles and could have an effect on communities on the mainland near Poplar Island. Of the seven species which have been identified onsite at Poplar Island, *C. salinarius* and *A. vexans* are vectors for West Nile Virus.

Larval monitoring showed that cracks in dredged material during the site's crust management phase (where sediments are kept dry before the next material inflow) are not a common breeding area for non-tidal wetland mosquitoes, as had been expected, but rather shallow trenches and standing water within spillway structures serve as the most commonly used breeding areas. Flushing of these areas serves to limit adult mosquito production.

Whereas the 2008 through 2011 mosquito monitoring plans were used to collect background information to better inform control and management decisions, the Mosquito Monitoring Plans implemented after 2011 serve as tools to identify times when mosquito population control is necessary. The MDA Mosquito Control Program conducts nuisance adult mosquito control at Poplar Island. Naled, an organophosphate class pesticide that only targets adult mosquitoes, is applied by MDA if the agreed upon threshold is met. The threshold is an average adult landing rate count of 12 biting mosquitoes per minute. Since 2002, MDA has conducted 13 aerial applications at Poplar Island.

c. Would assistance be provided to adjacent islands if an increase in birds or mosquitoes was causing a nuisance?

Response:
As has been done in years past, the Poplar Island Project Team will coordinate with Talbot County or State or Federal government agencies to respond if it is found that the project is negatively impacting the adjacent properties by increasing mosquitoes or birds populations.

d. Would the incidence of botulism infected ducks and seagulls increase? Would there be an increased risk to public health?

Response:
Avian botulism is naturally occurring within wetland environments. As stated within the U.S. Geological Survey (USGS) Field Manual for Wildlife Diseases, spores from type C (the toxin type associated with Poplar Island outbreaks) is widely distributed and can be found in tissues of most wetland insects, mollusks and crustacean and many vertebrates, including healthy birds. In 2012, during the period when Poplar Island had its large avian botulism related mortality event, another 56 suspected and confirmed botulism related bird mortality events were reported by the USGS Wildlife Health Center Lab from across the country. The number of affected birds ranged from four to over 2,500. Avian botulism was also identified from carcasses retrieved from Poplar Island in 2013 and 2014, although on a much smaller scale than 2012.

Therefore, predictions cannot be made whether another large scale botulism event will occur at Poplar Island or the Expansion project. However, the current Wildlife Disease Coordination Plan assures that all practical site management techniques will be implemented to minimize risk. This document is reviewed and revised by federal and state agency representatives as needed to ensure the risk of another large scale botulism related mortality event is minimized. Additionally, the risk to public health is considered very low due to the type of toxin identified. In all cases, the toxin which caused the botulism outbreak on Poplar Island has been identified as type C which poses the most minimal risk to human health.

e. Is there a plan to monitor for Microcystis? Is there an action plan if it is present?

Response:
Yes, current monitoring and response protocols would be expanded to include the project Expansion. A harmful algal bloom (HAB) consisting of the potentially toxic algal species, *Microcystis aeruginosa*, was observed in Poplar Island's Cell 6 in August 2012. The algal event lasted through October with the concentration of microcystin, the associated toxin, consistently above the 10 ppb 'no contact threshold' provided by the MDE Water Quality Protection and Restoration Program. Since the microcystin concentrations in the cell were high, there were concerns over the health of humans and wildlife that came into contact with the ponded water and MDE-initiated limits on the discharge of water containing the HAB.

During the 2012 event, there were a number of Federal, State, and Local agencies, as well as research experts that were alerted and/or consulted for guidance on identifying the risks to humans, wildlife, and the environment as well as on understanding regulations that could impact normal site operations at Poplar Island. A Standard Operating Procedure was developed as a guide for MES on proper response procedures following another positive identification of an HAB at the Poplar Island facility. Since the 2012 HAB event, the MES Environmental staff conducts weekly water quality monitoring of Cell 6, May through October of each year. Monthly

algae monitoring is conducted April through October of each year at all water ponded in front of a spillway. Additionally, the MES Environmental staff makes regular visual observations of all water onsite (not just at spillway structures) looking for any signs of an HAB.

If a suspicious algae bloom is identified, a sample is collected following proper safety protocol by the MES Environmental staff. The MES staff then analyzes the pigment make-up of the sample using a handheld fluorometer in order to determine the proportion of the bloom comprised of the potentially toxic blue-green cyanobacteria. Generally, a ratio of phycocyanin (PC) to chlorophyll-a of less than 1:10 with a PC concentration of 100 or more is indicative of a blue-green cyanobacteria bloom. If these thresholds are met, a sample is delivered to MDE for HAB confirmation through species and ELISA analysis. While awaiting results, onsite staff will be advised of the potential HAB and all water handling and discharge of the suspicious ponded water will be put on hold. If a HAB is not identified by the MDE analysis, no further action is necessary and the water handling and discharge restrictions are lifted. However, if a HAB is identified and the associated microcystin toxin is observed in a concentration above the limits outlined by the World Health Organization and the Maryland Department of Health and Mental Hygiene, water will continue to be held and MDE and DNR will be consulted on guidelines for when discharge can resume.

5. **Construction questions:**

   a. **Can the impact to view be reduced by changing the type of vegetation proposed to be built on the dike?**

Response:
Due to the proposed project alignment it is highly unlikely that a reduction in the height of tree species chosen would reduce the impacts to the viewshed. Only grasses and other herbaceous species will be permitted to be grown on the dikes and these species top out at approximately 72 inches.

The upland cell dikes of the Poplar Expansion project are the cause of most of Jefferson Island's reduction in water view, as they will be approximately 15 feet higher than Jefferson and Coaches Island. Alternative project alignments that could possibly reduce the immediate foreground water view impacts for Jefferson Island were considered, however these alternatives alignments were found to be geotechnically unsound. The current proposed project alignment was chosen based on foundation conditions, availability of quality borrow material within the proposed footprint (to mitigate impacts to natural bay bottom), avoidance of cultural and environmental resources, and optimization of dredged material capacity

   b. **Could the cells be lined to prevent contaminants from seeping through the dike and bottom?**

Response:
The MPA monitors exterior water and sediment quality to assure that all levels of potential contaminants remain the same as prior to the construction of Poplar Island, and this monitoring will be extended to include the Expansion project as well. Approximately ten years worth of sediment data have shown there are no significant changes to the exterior water and sediment quality. All wells within the vicinity are below the Aquia formation and therefore are protected by multiple levels of clay that serve to isolate the aquifer from potential contamination. Additionally, the USACE determines locations for Dredged Material Containment Facilities

(DMCFs) or habitat restoration sites to be located in areas with minimal impacts. Based on this information, it has been determined that a liner is not needed.

c. **What can be done to reduce or minimize the noise level generated by building and raising the dikes as well as moving tugs and barges, running generators, and operating pumps? Are there obstacles to reducing the noise during the night hours?**

Response:
Noise impacts are evaluated from the edges of the project and therefore are considered to be an over estimation for the duration of the project. Even so, the first two years of the Expansion project construction, noise levels are expected to be high. Expected peak noise of 90 dBA would attenuated at 50 ft to 70 – 75 dBA by the time it reaches the shores of Jefferson Island, and while above background levels for a rural setting, the levels are consistent with what might be associated with proximity to a major road. Noise will not be noticeable simultaneously to the entire set of potentially affected residents and boaters.

Tugs, barges, and operational pumps are all activities associated with inflow, and therefore will persist for the duration of the project development, although activities are expected to be seasonal (September – March). The noise level of barges (82 dBA), generators (81 dBA), and pumps (71 dBA) have a combined general sound of 85 dBA at 50 ft if all equipment is operated with the same vicinity. The activities associated with inflow, site maintenance, and habitat development will use these types of equipment and generate the described noise levels but it will be in a diminished frequency as the project continues. Noise will be periodic or relatively short in duration and not expected to interfere with recreational or residential activities.

The loudest noises with will be the result of rock placement and mandatory safety warning alarms (85-100 dBA). These practices generally occur in the day and are shorter in duration. Night time noises would attenuate to night time background levels within 6,000 ft and both Coaches and Jefferson are within that zone. However, nighttime noises will come from inflow operations and the positioning of the northern access channel is such that operations would be some 8,000 ft from Jefferson and 13,000 ft from Coaches.

Noise issues associated with muffler configurations on crew vessels that travel to and from the work site would also be of concern. Appropriate muffler systems can be provided and added as a requirement to the scope of any contract. The distance from the main local population should be adequate enough to naturally mitigate noise concerns from that perspective.

d. **Explain the change in goals from the original project as an island restoration by proposing to restore historic footprint, but now expanding beyond that footprint.**

Response:
While the original project was restored to the 1847 footprint, research has indicated that the landmass known as Poplar Island was considerably larger, approximately 2000 acres in the 1600's. Borings collected within the area to be included in the Expansion footprint indicate that the area would have been part of the historic Poplar Island.

Although the entire project likely does not fall exactly within the "historic footprint" the Expansion will provide additional benefits to the original project goals, most specifically additional protection of Poplar Harbor.

6. General questions:

a. How long will monitoring be conducted?

Response:
Monitoring will be conducted until the project is considered complete sometime after 2040.

b. Who will be responsible for project beyond the life for dredge disposal?

Response:
Poplar Island will become the property of the State of Maryland.

c. What financial assurance is proposed to assure the site will be properly managed?

Response:
Construction of the project is governed by a project cooperation agreement between the State of Maryland (through the Maryland Department of Transportation/MPA) and the federal government (through USACE, Baltimore District). Congress and the State must appropriate construction funds for the project and has consistently done so without interruption since the project began two decades ago. Once project construction has been completed, the State of Maryland will be responsible for the continued operation and maintenance of the project, which would be funded through the State appropriations process.

d. What alternative sites were considered?

Response:
Poplar Island is a State and Federal government cost share project. The Federal Dredged Material Management Plan (DMMP) and Tiered Environmental Impact Statement from 2005 investigated numerous alternative dredged material placement options including island restorations at several locations throughout the Chesapeake Bay, as well as other dredged material management options. The Federal Base Plan is open water placement, however per the State of Maryland Regulations; open water placement is not permitted. Therefore the federal government prioritizes the expansion of existing projects. The Mid-Bay Islands (James and Barren Islands) were also reviewed; however Poplar Island is located closer to dredging activities and was therefore selected as the preferred option. The SEIS/GRR for the Poplar Island Expansion looked at alternatives concerning no action, vertical expansion only of the existing Poplar Island, lateral expansion, and both vertical and lateral expansion.

e. Is there a plan for handling a breach?

Response:
No formal breach response plan has been developed; however the USACE has considered multiple potential breach scenarios, such as upland to wetland cell release or wetland cell breaches caused by overtopping during storms, including tropical storms and hurricanes. Plans vary according to scenario, with preemptive action to reduce water loading (head) differentials and to breach at specific locations to mitigate impacts when a breach appears imminent.

To reduce the risk of an uncontrolled dike breach, USACE developed two-fold criteria for emergency discharges of water ponded as a result of dredged material inflow. The criterion is based on observed dike instability as well as ponded water trigger elevations independent of observation of dike instability. Each criterion includes MDE notification and initiation of

increased water quality monitoring. This plan has been submitted to MDE, and although they will not grant approval of discharge of water not meeting WQC limits, they agree that a plan should be in place to ensure there is not a loss of dredged material from the site due to dike failure. All monitoring and response results are submitted in a final emergency discharge report to MDE.

Should you have any questions about the information provided in this response or need clarification or additional information, please do not hesitate to contact me at (410) 385-4748 or hmiller2@marylandports.com.

Sincerely,

Holly L. Miller
Office of Harbor Development

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