

**WATER MANAGEMENT ADMINISTRATION
TIDAL WETLANDS DIVISION**

Wetland Report and Recommendation

State Wetlands Case No:

15-WL-0131



Applicant: Maryland Port Administration
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Date Application Received: February 24, 2015

Public Notice Required? Yes

Comment Period Closing Date: July 15, 2015

Maryland Coordinates: 124015 x 455159

Book Map Coordinates: Talbot Co. **ADC Map Num:** 10 Ed: 8 Coord: 1B

Location of Proposed Work: The proposed project is located within the tidal waters of the Chesapeake Bay adjacent to the northern end of the Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island. Poplar Island is located approximately 16 miles south of the Bay Bridge and 1.2 miles west from the mainland of Talbot County, Maryland.

Purpose of Proposed Work: The purpose of the project is to create a beneficial use dredged material placement site for approximately 28 million cubic yards of clean dredged material that will provide remote island wetland and upland habitat for a variety of wildlife. The clean dredged material will be sourced from the various Baltimore Harbor approach navigation channels.

Description of Authorized Work: The proposed project will expand Poplar Island by creating 575 acres of mixed habitat as depicted on the attached revised plans dated May 17, 2015 and described below:

1. Mechanically dredge a maximum of 5.6 million cubic yards of clean dredged material onto barges and hydraulically off load the material from the barges to an existing undeveloped cell identified as Cell 1D on Poplar Island and a newly-constructed wetland Cell identified as Cell 7 located within the proposed Poplar Island Expansion, to include:
 - a) create an approximate 220 acres (9.58 million square feet) borrow pit to a depth of 35.48 feet at mean low water;
 - b) create an approximate 21 acres (914,760 square feet) access channel to a depth of 25.48 feet at mean low water;
 - c) remediate an approximate 20.1 acres (875,556 square feet) dike and breakwater foundation to a depth of 21.48 feet at mean low water;
2. Periodic maintenance dredging;
3. Construct three 2,153-foot long by 160-foot wide stone breakwaters;

4. Construct 24,647 feet of armored dredge material containment dikes with a width of 240 feet;
5. Emplace four 100-foot long and 24-foot wide tidal spillway and breach features;
6. Emplace one 15-foot long by 60-foot wide temporary upland spillway feature;
7. Create approximately 259 acres (11,282,040 square feet) of upland habitat, 206 acres (8,973,360 square feet) of tidal wetland habitat and 110 acres (4,791,600 square feet) of protected open water embayment; and
8. Emplace a 400-foot long by 60-foot wide temporary steel sheet pile bulkhead with backfill.

Requires Water Quality Certification?: Yes, WQC will be issued by MDE.

Qualifies for Maryland State Programmatic General Permit?: No, a United States Army Corps of Engineers alternate review and issuance of an authorization will be required.

Area of Vegetated Wetland Impacts: 0 square feet

Area of Wetlands Created: 206 acres (8,973,360 square feet) of wetland and 110 acres (4,791,600 square feet) of open water embayment.

Was the Applicant's Original Project Modified?: No

Department Comment: Poplar Island was historically populated; however by 1993 it had eroded to four small remnant islands totaling approximately 5 acres. In the 1990's the Maryland Port Administration and the Army Corps of Engineers proposed to rebuild the island to the 1847 footprint of approximately 1,140 acres by constructing stone and sand dikes, creating containment cells and filling the resultant cells with material dredged from the navigation channels, located in the Chesapeake Bay, leading to the Port of Baltimore. In cooperation with numerous State and federal agencies the restored island, named the Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island, would create various habitats that could support a diverse mix of wildlife. The project was authorized by wetland license 96-WL-0728 on August 14, 1996 with an expiration date of August 14, 2026 due to the long term requirements of the project. Maryland Environmental Service was contracted to manage the project and beginning in 2001 dredged material was placed in the created cells and the first two phases completed in 2002. The original restoration goals were to reconstruct the island to the 1847 footprint creating approximately 50 percent upland and 50 percent wetland habitat allowing 38 million cubic yards of dredged material to be placed at the site. In addition to serving as a location for dredged material placement, Poplar Island has provided unique opportunities for research in habitat restoration and beneficial use of dredge material. Public tours are given regularly, and volunteer groups participate in events such as planting marsh vegetation, cataloging numbers and species of birds found on the island, or fostering diamondback terrapin hatchlings for release. Educational outings are provided for students from elementary school through graduate school. The Poplar Island restoration project has been considered a success in providing valuable habitat as well as a needed repository for dredged material; however the current project site is quickly reaching maximum capacity. The current proposed project, known as Phase III, will expand the Poplar Island footprint to 1,715 acres by constructing 24,647 linear feet of new dikes and 2,153 linear feet of segmented breakwaters. The expansion is proposed to create 575 total acres which will include a 110 acre open-water embayment, 206 acres of wetland habitat, and 259 acres of upland habitat, while providing the ability to accept an additional 28 million cubic yards of dredged material.

Design and Method of Construction

The final design and location of the project was determined after exploring and researching other alternatives which included the restoration of other eroding islands in the Chesapeake Bay or locating suitable upland dredge disposal areas capable of containing the anticipated volume of material. James and Barren Islands were reviewed for restoration using dredged material; however Poplar Island is located closer to the dredging

activities, consequently it was considered the preferred option. The Environmental Impact Study included analysis of no action, vertical expansion of the current Poplar Island footprint, lateral expansion, and both vertical and lateral expansion. The project is funded through State and federal cost share programs and the final design was selected based on requirements and priorities of the governing regulations and management plans.

The proposed expansion project is located between three Natural Oyster Bars (NOBs) in an area of the Chesapeake Bay that has 10 to 20-foot deep sand deposits with some areas of clay and silt on the bottom. Several site alignments were evaluated and the final design was selected to avoid the nearby NOBs and areas of weak clay and silt bottom soils. The final proposed footprint was unable to avoid all those weak areas, thus four locations will be remediated by dredging 8 to 10 feet below the bottom and removing approximately 0.362 million cubic yards of silt and clay from the bottom and replacing with sand. The initial sand to be used for remediating the dike foundation and the construction of the dikes is proposed to be hydraulically dredged from the subaqueous Northwest Borrow Area and the access channel and turning basin. The Northeast Borrow Area is approximately 220 acres located within the expansion footprint and expected to generate up to 5 million cubic yards of sandy material to be used in dike construction. The 1000-foot long by 600-foot wide access channel and 1000-foot long by 1500-foot wide turning basing are proposed at the northwest end of the expansion area to facilitate barge docking and offloading activities. The access channel and turning basin area is proposed to be dredged to 25.48 feet deep at mean low water resulting in the removal of 0.24 million cubic yards of material. Approximately 50% of this dredged material will be suitable for use as dike backfill with the remaining unsuitable material being placed in Cell 2; the sandy material will be pumped to containment cells located at existing cell 1D and proposed Cell 7 where it will be held until needed. Excess water will be discharged through spillway structures located at the eastern boundary of each cell. Turbidity will be monitored along the mixing zone boundary.

The proposed dike elevations, stone sizing, and placement were based on models of wave action and water levels in order to reduce the potential for breaches caused by overtopping. The perimeter dike will be constructed with a 3:1 slope to differing heights by placing a stone toe dike section on geotextile material. The toe stone dike will be constructed a minimum of 200 hundred linear feet ahead of any sand filling, acting as a breakwater to provide protection during the placement and grading of the sand. The stockpiled sand will be brought to the fill area, via trucks, where it will be unloaded, spread, and graded. Bedding stone and varying sizes of armor stone will then be placed along the dike slopes. This same procedure was used during the dike construction on the existing island during Phase I and II resulting in good turbidity control and minimal impacts to the surrounding bay bottom. Maryland Geological Survey conducted pre and post construction surveys of the nearby natural oyster bars for Phases I and II and found no evidence that sediment had migrated into the NOBs as a result of the construction. Maryland Geological Survey will conduct pre and post construction surveys for the proposed Phase III expansion.

The completed upland perimeter dikes will be approximately 25.48 feet in elevation at mean low water, the wetland cell perimeter dikes will be 9.98 feet in elevation at mean low water and the surrounding upland dikes will be built to an elevation of 10.98 feet at mean low water. Interior dikes are proposed to be constructed of sand with a 3:1 slope to an elevation of approximately 9.98 feet at mean low water. Sections of interior dikes will be revised according to the goals within a particular cell. A crushed stone road is planned at the 9.98 to 10.98 elevation on the perimeter dikes. The perimeter dikes will initially be built to a lower level and increased in height when required as the cells are developed.

Three breakwater segments are proposed to form a protected embayment. They will be constructed to 9.98 feet in elevation at mean low water and armored on the sides. A proposal to place a 1-foot thick layer of sand along the top of the breakwaters is under consideration to provide isolated nesting habitat. If the decision is made to include this sandy layer, the final breakwater elevation would be 10.98 feet at mean low water.

A 400-foot long by 60-foot wide temporary steel bulkhead may be installed to facilitate the delivery of armor stone, large equipment and other materials needed for the project. If the bulkhead is constructed, it will be removed near completion of the project and replaced with armor stone.

As the perimeter dikes are completed, the cells will initially contain water in equilibrium with the exterior water level. Dredged material coming from the outer approach channels to the Baltimore Harbor will be placed in water tight barges and transported to Poplar Island. Once a barge reaches the island, the dredged material will be offloaded into a cell by adding water to the dredged material in the barge to create slurry and pumping the slurry into a cell through a 36-inch diameter pipe. The dredge material slurry will displace the interior water, which will be discharged from the cell through the spillways. When the elevation of dredged material within a cell exceeds the exterior tidal range, the material will consolidate. As this consolidation occurs, displaced water will evaporate or flow into trenches excavated around the perimeter of the cell and be discharged through the spillways. All discharges will be conducted according to the requirements of the Water Quality Certification.

Once the dredged material stabilizes, the sediments will be graded and analyzed to determine whether they are ready for planting. Approximately 45 percent of the expansion (270 acres) will be constructed as shrub and forested uplands and 55 percent will be constructed as wetlands with 165 acres in high and low marsh, mudflats, channels, hummocks, ponds and isolated habitat islands, and 110 acres of open water embayment which will be enclosed within the proposed breakwaters. Various wetland and upland plants will be selected to create a diverse habitat with more specific plans being developed as the cells reach capacity. The specific designs will be reviewed and approved by the Poplar Island Working Group.

Management and Monitoring

Due to the need for flexibility, previous authorizations have not specified every activity or type of construction that would occur on the island. Instead, Poplar Island activities are governed by an Adaptive Management Plan. This plan allows cooperative decision making to address unexpected conditions by setting goals and assessing whether the goals were met and, if not, how management should be changed to obtain the goals. Monitoring of the site is directed by the established goals as well as requirements of the Wetland License and Water Quality Certification. Scientists, managers, and professionals from numerous federal, State, county, and private agencies comprise the Poplar Island Working Group which meets regularly to receive updates and provide input regarding work being conducted on the island. During Phase I and II, many aspects of Poplar Island were monitored by agencies and universities, such as Maryland Environmental Service, EA Science and Engineering, Ohio University, University of Maryland Center for Environmental Science, United States Fish and Wildlife Service, and United States Geological Survey. Subjects being monitored and investigated include bird utilization, discharge monitoring, exterior nutrient monitoring, exterior sediment collection, harmful algae bloom monitoring and response, mosquito monitoring, mass balance monitoring, nutrient monitoring, wetland cell monitoring, habitat island vegetation monitoring, bird mortality monitoring, osprey monitoring, diamondback terrapin monitoring, deer and muskrat surveys, submerged aquatic vegetation, and wetland vegetation surveys, and wetland use by wildlife. A discharge monitoring plan has been developed for the site and it is updated and submitted for review on yearly basis. The Maryland Port Administration will oversee monitoring during the construction of Phase III, and monitoring plans will be developed to incorporate the expanded area.

Wetland cells that were created in earlier phases experienced quick growth of vegetation and have been opened to tidal influence. Poplar Island has been identified as valuable habitat and attracts a variety of wildlife. Monitoring plans are in place to determine what wildlife is making use of the island and whether management of certain populations is required. Bird species found on the island include the double breasted cormorant, little blue heron, tri-colored heron, black-crowned night heron, cattle egret, snowy egret, glossy ibis, osprey, common gallinule, American coot, Virginia rail, American oystercatcher, common tern, least

tern, killdeer, willet, black-necked stilt, and bank swallow. Diamondback terrapins use the island to lay their eggs, and sea turtles have been spotted in the area. When terrapin hatchlings are found, they are tagged, and some are distributed to be fostered in classrooms before being released back at the island. Occasionally deer and fox swim to the island, but they are not encouraged to stay. Island activities are governed by the many time of year restrictions associated with wildlife identified as utilizing the site.

Application Review

A presentation describing the proposed Phase III, Poplar Island Expansion was given at the Joint Evaluation Committee Meeting on January 28, 2015. A Joint Application for the expansion was submitted to the Maryland Department of the Environment on February 24, 2015. Preliminary plans were forwarded to Maryland Department of the Environment, Sediment, Stormwater, & Dam Safety Program for review. The Sediment and Erosion Control Plan will be completed after the finalized plans are submitted. The Dam Safety Division reviewed the preliminary plans and did not identify any deficiencies.

As required by § 5-204 (b) of the Environment Article, the Department drafted and issued a public notice by posting the public notice on its WEB site from June 15, 2015 to July 15, 2015 and publishing the public notice for the proposed project in The Baltimore Sun, Washington Post, Daily Times, and Star Democrat. In addition, the public notice was provided to adjacent property owners listed on Attachment A.

Public hearings were held on July 7, 2015, at 10:00 AM at the Easton Branch of the Talbot County Free Library, 100 W. Dover Street, Easton, Maryland 21601, and on July 8, 2015, at 10:00 AM at the Maryland Environmental Service building, 259 Najoles Road, Millersville, Maryland 21108. Supporting information was made available at the following website: <http://www.mpasafepassage.org/news.html> and at the main branch of the Anne Arundel, Baltimore, Baltimore City, Calvert, Cecil, Dorchester, Harford, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, and Wicomico County libraries. Interested citizens spoke at the July 7, 2015 hearing, however no members of the public attended the July 8, 2015 hearing. Comments that were received during the public comment period or voiced at the Public Hearings included:

1. Water quality:

- a. Concerns that the dredged materials brought to Poplar Island will contain contaminants that will leave the site and negatively impact surface or groundwater.
- b. Questions about how many times the current site discharged water above maximum contaminant levels (mcl) and which contaminants were above mcl.
- c. Whether contaminants leak from the cells and contaminate nearby potable wells
- d. Will water discharged from Poplar Island cause the water off of Jefferson Island be unsafe for swimming?
- 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?
- f. Will incoming dredge material be sampled to evaluate the level of contaminants?

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

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?
- 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?

- c. Are odor problems expected? Are there plans to manage the odors?
 - d. What impact is expected from the increased traffic from barges as well as the recreational and educational tours that are proposed?
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?
 - b. Is the expansion expected to increase the mosquito population in the area?
 - c. Would assistance be provided to adjacent islands if an increase in birds or mosquitoes was causing a nuisance?
 - d. Would the incidence of botulism infected birds increase? Would there be an increased risk to public health?
 - e. Is there a plan to monitor for Microcystis? Is there an action plan if it is present?
5. Construction questions:
- a. Can the impact to view be reduced by changing the type of vegetation proposed to be built on the dike?
 - b. Could the cells be lined to prevent contaminants from seeping through the dyke and bottom?
 - 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?
 - d. Explain the change in goals from the original project which proposed to restore Poplar Island to a documented historic footprint as an island restoration to the current island expansion beyond that footprint.
6. General questions:
- a. How long will monitoring be conducted?
 - b. Who will be responsible for project beyond the life for dredge disposal?
 - c. What financial assurance is proposed to assure the site will be properly managed?
 - d. What alternative sites were considered?
 - e. Is there a plan for handling a breach?

These concerns were forwarded to the applicant and their response letter is attached as Attachment B. A copy of the response was provided to people who expressed concerns or provided comments at the hearing or in written form; Attachment C. MDE reviewed the numerous concerns and comments and determined that most were addressed with supporting information from monitoring conducted during previous phases or modeling results used to develop the proposed design. However there are two concerns or comments that were unable to be directly addressed by the applicant, but MDE feels can be addressed through Special Conditions placed within the authorization. One such concern was that the nearby private islands and nearby properties on the mainland, due to the type, size, and location of the project, will experience an increase in noise levels from activities involved in moving tugs, offloading barges, construction equipment, and operating pumps. The maximum allowed dBA for an industrial site under State law is 75dBA at the property line. In order to address the noise concern, Special Condition Q has been recommended to reduce noise generating activities during the evening hours using the 75dBA limit. Another concern regarding the possible contaminants contained in dredged material received for use in Poplar Island and the frequency of sampling for such contaminants. Currently samples are taken every 3 years at the location where the dredging occurs, but the MDE is recommending Special Condition R which requires sampling occur prior to initial placement from the location dredging occurs.

There is one comment that was unable to be addressed by the applicant due to the location and size of the proposed project. The two private islands directly adjacent to the current and proposed project will experience a reduction of their current view area. Jefferson Island's open water view will be significantly

reduced due to the close proximity of Jefferson Island to the proposed Poplar Island expansion project area. Coach's Island will also experience a reduction in open water view, but to a lesser degree than Jefferson Island. Project engineers determined that the current proposed design could not be altered to minimize the impacts to the view area because of the location of the Natural Oyster Bars and the extensive areas of weak bottom; the current design fails to completely avoid the weak bottom. While MDE recognizes that authorization to expand the current footprint of Poplar Island will result in some unavoidable impacts to neighboring properties, MDE is recommending conditioning the authorization to minimize those impacts such as noise during nighttime operations, developing emergency plans for a breach, and extensive monitoring of cell discharges for adherence to the State's water quality regulations. The unavoidable impact resulting in a reduced view area cannot be minimized or eliminated because of the location of the project. The Department has considered the view impact on neighboring properties and has concluded that the benefits of the project to the citizens of the State outweigh the impacts on the reduction in view to neighboring properties. The benefits of the proposed project to the citizens of the State was summarized by the Maryland Port Administration in Attachment D. The project is required in order to maintain the safe operation of the navigational channels serving the Port of Baltimore and thus the benefits to local, regional, State, and national commerce exceed the unavoidable view reduction to neighboring properties.

A letter of support was sent to Bill Morgante, Wetlands Administrator with the Board of Public Works from Doug Myers, Maryland Senior Scientist, for the Chesapeake Bay Foundation, expressing his support of the proposed expansion. He described the project as the most environmentally beneficial use of dredged material to sustain commercial navigation in the Chesapeake Bay.

The Maryland Department of Natural Resources (DNR) reviewed the project and determined that the part of the proposed work is located within 1500 feet of three Natural Oyster Bars (NOB 8-7, 8-10, and 8-11). Since increased levels of turbidity have the potential to negatively impact oyster resources, time of year restrictions were requested for proposed dredging of areas of the northern access channel, sand borrow area, and areas of foundation remediation for dike and breakwater construction that will be within 1500 feet of the Natural Oyster Bar (NOB) boundaries. The following Time of Year Restrictions are recommended: 1) No hydraulic dredging should be performed during the period of June 1 through September 30 of any year within the 1500 linear foot buffer for the NOB; and 2) No mechanical dredging should be done during the periods of December 16 through March 14 and June 1 through September 30 of any year. DNR agreed to allow construction of the proposed dikes to occur within 1500 linear feet of an NOB during these time of year restriction periods if the construction occurs as described in MPA's submitted sequence of construction. DNR requested to be notified of any change to the sequence of dike construction so they can determine whether a time of year restriction would be required for the revised activities.

The Maryland Historical Trust reviewed the proposed project and determined that there are no historic properties affected by this undertaking.

The evaluation of this project has taken into account ecological, economic, recreational, developmental, and aesthetic considerations appropriate for this proposal as well as other requirements set forth in the Code of Maryland Regulations. To insure that impacts to resources are avoided and minimized to the maximum extent possible and to insure that all work is performed in accordance with critical area and local regulations, the Department has recommended a number of special conditions. Provided all general and special conditions are adhered to, the work proposed will not cause significant deleterious impacts to marsh vegetation, submerged aquatic vegetation, finfish, shellfish, or navigation.

Project Justification: Beneficial impacts from the proposed expansion are an increase to the capacity of the site to accept dredged material from the outer bay Baltimore Harbor approach navigation channels to preserve the Port of Baltimore's ability to remain a viable facility, provide remote island habitat for wildlife, and reduce erosive forces to nearby properties. In consideration of the site characteristics and the nature of

the proposed work, the Department concludes that the application represents a reasonable request to perform work in state tidal wetlands.

SPECIAL CONDITIONS:

- A. The Maryland Department of the Environment has determined that the proposed activities comply with, and will be conducted in a manner consistent with the State's Coastal Zone Management Program, as required by Section 307 of the Federal Coastal Zone Management Act of 1972, as amended.
- B. The Licensee shall comply with all Critical Area requirements and obtain all necessary authorizations from local jurisdiction. This License does not constitute authorization for disturbance in the 100-foot Critical Area Buffer. "Disturbance" in the Buffer means clearing, grading, construction activities, or removal of any size of tree or vegetation. Any anticipated Buffer disturbance requires prior written approval, before commencement of land disturbing activity, from local jurisdiction in the form of a Buffer Management Plan.
- C. If the authorized work is not performed by the property owner, all work performed under this Tidal Wetlands License shall be conducted by a marine contractor registered with the Maryland Department of the Environment in accordance with Chapter 286 of the 2010 Laws of Maryland. A list of registered marine contractors can be obtained by contacting the Department at 410-537-3249 or by e-mail at MDE.MCLB@maryland.gov.
- D. The Licensee shall perform all work in accordance with the Certification of Water Quality issued by the Maryland Department of the Environment, Tidal Wetlands Division.
- E. The Licensee shall not perform any hydraulic dredging of areas of the northern access channel, sand borrow area, and areas of foundation remediation for dike and breakwater construction that will be within 1500 feet of the Natural Oyster Bar(NOB) boundaries during the period of June 1 through September 30 of any year.
- F. The Licensee shall not perform any mechanical dredging of areas of the northern access channel, sand borrow area, and areas of foundation remediation for dike and breakwater construction that will be within 1500 feet of the Natural Oyster Bar(NOB) boundaries during the periods of December 16 through March 14 and June 1 through September 30 of any year.
- G. The Licensee shall construct the stone toe dike a minimum of 200 linear feet ahead of sand placement. If this procedure requires modification, Maryland Department of Natural Resources and Maryland Department of the Environment must be consulted to determine whether additional time of year restrictions would be required for the revised activities.
- H. Environmental Time of Year Restrictions established for Phase I and Phase II work conducted at the Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island shall remain in effect during construction of the expansion.
- I. Dredged material shall be placed in watertight barges and transported to Poplar Island.
- J. The Licensee shall perform all work in accordance with the required Soil Erosion and Sediment Control Plan as approved by the Maryland Department of the Environment.

- K. The Licensee shall monitor the suspended solids content in the discharge from the hydraulically dredged material placement facility, including the dikes. The suspended solids shall not exceed a monthly average of four hundred parts per million with a daily maximum of 800 parts per million.
- L. The Licensee shall monitor the turbidity in the surface water resulting from any discharge may not exceed 150 NTU at any time or 50 NTU as a monthly average outside the "mixing zone" as established in the monitoring plan specified above.
- M. Discharges from spillways shall have a velocity no greater than four feet per second in order to prevent erosion in the receiving waterway or wetland.
- N. Final design, construction, and management of upland, wetland, and open water embayment shall be approved by MDE and the Poplar Island Working Group and incorporated into the Adaptive Management Plan. The expansion project shall be developed with 45 percent of the expansion (total site?) being developed as upland habitat and 55 percent being wetland habitat, including the 110 acre embayment. The low marsh will predominantly consist of areas planted with *Spartina alterniflora*. Other low marsh features include, but are not limited to channels, ponds, and mudflats. The goal shall include 20% of wetland as high marsh (elevations above mean high water and periodically inundated by tidal action). The high marsh shall predominantly consist of *Spartina patens*; other high marsh features may include habitat islands and hummocks.
- O. The Licensee shall submit a detailed plan for monitoring water quality parameters associated with construction and operation of the dredged material containment facility to the Department of the Environment, Tidal Wetlands Division, prior to project commencement. The licensee shall receive written approval of the monitoring plan from the Tidal Wetlands Division prior to project commencement.
- P. Material dredged from within the Patapsco River inside the North Point – Rock Point line is not authorized to be deposited at Poplar Island due to the potential for contaminated sediments. These channels include a portion of the Brewerton Channel, Curtis Bay Channel, Fort McHenry Channel, East, West, and Ferry Bar Channels.
- Q. Activities during the hours of 7:00 pm to 7:00 am shall not exceed 75 dBA measured at the mean high water line on Poplar Island.
- R. A sample of any dredged material shall be collected prior to use at Poplar Island and resampled a minimum of at least every 3 years per the Poplar Island General Reevaluation Report (GRR) and Supplemental EIS (USACE/MPA 2005). The sample shall be tested per United States Environmental Protection Agency and United States Army Corps of Engineers guidelines for disposal of dredge material.

- S. The licensee shall develop an inadvertent breach response plan to outline actions to be taken in the event of a breach. The plan shall be provided to the Maryland Department of the Environment and approved prior to commencement of any activities authorized by this License.

DEPARTMENT OF THE ENVIRONMENT APPROVAL:



for Mary Phipps-Dickerson, Natural Resource Planner
Tidal Wetlands Division

11/9/2015

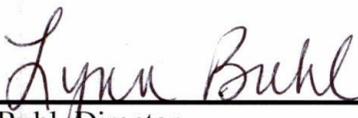
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for Robert Tabisz, Acting Division Chief
Tidal Wetlands Division

11/9/2015

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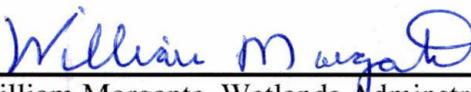


Lynn Buhl, Director
Water Management Administration

11/9/2015

DATE

WETLANDS ADMINISTRATION CONCURRENCE:



William Morgante, Wetlands Administrator
Board of Public Works

2/8/2016

DATE