

Environmental Assessment

Pirate's Wharf Park

Wicomico County, Maryland

Prepared For:

Wicomico County Parks and Recreation
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INTRODUCTION

Wicomico County Parks and Recreation has proposed the development of Pirate's Wharf Park on a 340.73-acre property along the Wicomico River consisting of water frontage, open farmlands, a 4-acre freshwater pond and wooded acreage across Whitehaven Road. See Figure 1-1. There are no permanent structures on the property.

This Environmental Assessment (EA) was prepared to evaluate the impacts of the proposed activities on the natural and physical environment. This EA provides a basis for determining whether the Proposed Action, including associated mitigation measures, would result in impacts that would support a Finding of No Significant Impact or would necessitate preparation of an Environmental Impact Statement.

1.1 PURPOSE AND NEED FOR ACTION

The proposed Pirate's Wharf is a new development intended to be used as a community park for the residents of Wicomico County and potential day visitors. The project would provide public access to the water along a portion of the Wicomico River.

1.2 PROJECT OBJECTIVES

The main objectives of the project are to provide public access to and along the Wicomico River; provide multiuse, low impact recreational activities and programming for County residents; and maintain natural features of the property. The proposed action will include fishing areas, a small boat ramp and/or a soft launch spot for kayaks and small water vessels. In addition, the project will include a picnic pavilion and public restrooms. The riverside, pond area, and wooded sections of the property will be connected by a trail system that will include interpretive signs and opportunities for educational programming and demonstration areas.

1.3 PROJECT AREA

The project area consists of approximately 340.73 acres in Quantico in Wicomico County, Maryland (See Figure 1-2: Vicinity Map of Pirate's Wharf). The project area is located along the Wicomico River and includes waterfrontage, open farmlands, a freshwater pond, and wooded acreage.

1.3 STATUTORY AND REGULATORY AUTHORITY

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and implementing regulations, 40 Code of Federal Regulations (CFR) Parts 1500-1508; NPS Director's Order 12, Conservation Planning, Environmental Impact Analysis, and Decision-making (NPS 2011) and its accompanying handbook (NPS 2015a); Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and implementing regulations, 36 CFR Part 800; and Section 7 of the Endangered Species Act (ESA). This NEPA process is being used to comply with NHPA Section 106 and ESA Section 7.

Funding for the land acquisition was provided by the State of Maryland, Program Open Space, which limits the use of the property to public recreation and open space. Funding was also provided by the Chesapeake Access Fund which requires public access to the Wicomico River.

1.4 SCOPING AND PUBLIC INVOLVEMENT

1.4.1 Public Involvement

1.4.1.1 Work Group

The Wicomico County Executive commissioned a 12-member work group to provide recommendations for potential development of the property. The work group included a cross section of stakeholders including members of the Natural Resources Conservation Advisory Committee (NRCAC), a local University Professor of Biological Sciences, the State Forester, a Coastal Compliance professional, local environmental education programmer, County employees, and three residents who reside near the property. The work group met four times over the course of four months including a site visit to the property. The collaborative work of the group included a survey of development priorities and resulted in a recommendation to the County Executive of the priorities and desired features to be included in potential development. The work groups progress was presented to the Wicomico County Recreation & Parks Commission. The Commission is a 13-member group with representation across Wicomico County.

1.4.1.2 Public Meetings

County Capital Improvement Plan Meetings: The project was included in the proposed County Capital Improvement Plan which included multiple public hearings during the spring of 2018 that provided the public with opportunities to comment on the project. Public notices were issued at least two weeks ahead of the public meetings through press releases, the County website, and social media.

Land Preservation Parks and Preservation Plan Meetings: The project was included in the 2017 update of the Wicomico County Land Preservation Parks and Recreation Plan (LPPRP) which included a series of public meetings and was adopted by the Wicomico County Council on October 3, 2017.

Pirate's Wharf Master Plan Meeting: The plan was presented to the public on June 17, 2019 and approximately 43 people attended. Public feedback was generally positive on the Master Plan. The public supported keeping the area as natural as possible while providing public access to the Wicomico River. Some members of the public requested that logging be prohibited in the forest on the north side of Whitehaven Road.

1.4.2 Consultations with Cooperating Agencies

In 2018, Wicomico County submitted information on the project to the State Clearinghouse who coordinated the intergovernmental review of the project. Review comments were requested by the State Clearinghouse from the Maryland Department of Transportation, the Maryland Department of the Environment, and the Maryland Department of Planning including the Maryland Historical Trust.

The Maryland Department of Planning found the project to be consistent with their plans, programs, and objectives and stated that the project is aligned with the State Planning Vision of "Community Design."

The Maryland Department of the Environment (MDE) found the project to be generally consistent with their plans, programs, and objectives. The MDE qualified that any above ground or underground petroleum storage tanks which may be used in the project must be installed and maintained in accordance with applicable state and federal laws and regulations. The MDE also qualified that any solid

waste including construction, demolition and land clearing debris generated from the project must be properly disposed of at a permitted solid waste acceptance facility and recycled if possible.

The Maryland Historical Trust stated that their finding of consistency is contingent upon more detailed information about the location and scope of the proposed park facilities. Further cultural resources investigations may be necessary.

The Maryland Department of Natural Resources stated that habitat for Forest Interior Dwelling Birds occurs on the property and that an adjacent parcel to the south has a record of a blue heron colony. If development occurs on the southernmost portion of the site, protection measures for the blue heron colony should be incorporated into the site plans.

The US Fish and Wildlife Service was consulted in March 2019, and it was determined that there are no critical habitats within the project area under the USFWS jurisdiction.

1.0 PROPOSED ACTION AND THE NO ACTION ALTERNATIVE

2.1 PROPOSED ACTION ALTERNATIVE

Under the Proposed Action Alternative, Phase I of the Pirate's Wharf Park would be constructed. See Figure 2-1. Phase I includes an Event Area, a Boat Launch Area, an Observation Deck, a Fishing Pier, and Trailhead Parking.

The Event Area of the site will serve as a multi-purpose area with a relatively large picnic pavilion surrounded by amenities. The pavilion will be a multi-function feature with potential uses to include family gatherings or a wedding venue, an event stage, along with peripheral scenic views that will present a look into the surrounding environment. In the area around the pavilion, amenities such as information boards and comfort stations, a playground, an observation deck and a boat launch will present visitors with a wide range of activities to participate in. The area will also contain different parking options with convenience/drop-off parking, permanent parking, and overflow parking - all available to visitors. The Boat Launch Area of the site will serve as a public water access to visitors. The proposed boat launch facility is angled to take advantage of the depth of water necessary to launch boats while maintaining a safe distance from the active Federal channel area. The area will include a single-lane boat ramp that will act as a small vessel launch area and include a floating boarding pier to allow for users with physical limitations. The proposed area will also include a soft launch area for visitors using canoes or kayaks. Boat ramp/trailer parking and convenient drop-off & unloading areas are also included within this area of the site. The boat ramp will be designed to accommodate boats in the range of 14' to 28'. Generally, due to tow vehicle and trailer combinations, and the limitation of this site, it would not be favorable to have boats any larger than 28' in length utilize this facility. The parking facility will handle a maximum 50' tow vehicle and trailer combination.

The boat launch has been conceptually designed in accordance with the "States Organization for Boating Access – Design Handbook for Recreational Boating and Fishing Facilities, Second Edition". The design considered in this Master Plan is in accordance with a remote or low use recreational boating facility. Various locations and configurations were considered for this project element. This

location provides separation from the soft launch / beach area and utilizes the existing access to the River. In addition, this location takes advantage of the existing water depths to provide adequate boat access while maintaining a safe setback from the existing federal channel. Lastly, the existing access road / wharf area would provide a location where there would be minimal disturbance to wetlands and less roadway / impervious surfaces to be added to the property.

The assumption was made that this would be a high turnover facility where the average boating use is relatively short term (day use). Typically, a one lane launching facility would require a parking facility with 20 to 30 parking spaces. However, due to the park hours of operation of dawn to dusk and, and the desire to keep boating traffic minimized, a reduced parking area has been included in the concept plan. In addition, this facility will not have enough maneuvering space for the larger trailer / tow vehicle combinations. This combination will assist in keeping the use of this facility to the small to average sized boats. The Observation Deck will provide visitors with views of the surrounding atmosphere and allow for relaxed conversation and learning activities. From the observation deck, guests will be able to enjoy scenic views of the adjacent Wicomico River, and will have the chance to observe the flora and fauna of nearby nature. The area will also serve as a resting area for hikers and visitors touring the park.

Shoreline stabilization will be provided in the vicinity of the boat launch area, formerly the wharf area, to prevent further erosion. The boat ramp shall incorporate wing walls that connect to land to provide structural stabilization in the immediate vicinity of the boat ramp. Adjacent areas are planned to be a hybrid of stone sill, stone revetment and living shoreline elements to provide a diversified habitat while maintaining a cost-effective shoreline protection area balancing maintenance items, natural stabilization and affordability.

The proposed Fishing Pier will serve as a remote fishing location and an additional observation area for park visitors. The fishing piers will provide views of the Wicomico River and a widescale view of the park as well.

An 18-space parking facility at the head of the trail will provide trail access to both the proposed Woodland Area trails and the proposed Farmland-Pond Area trails. The parking lot will also act as an access point to the Historical Area featured within the park. The Historical Area includes showcases of the 1698 John McMurray House and the 1727-1778 McMurray / Denwood / Carey House. (See Figure 2-1 Pirate's Wharf Master Plan).

The Historical Exhibits of the 1698 John McMurray House and the 1727-1778 McMurray/Denwood/Carey House will act to preserve the historical portions of the existing site. The exhibits will be used as informational centers and will showcase the history of the property and how it ties into the new development. (See Appendix C for Historical Study)

In addition to consideration of the former historic structure locations identified by the Historical Study, a Phase I Archaeological study will be required. The master plan has included flexibility to avoid disruption of archaeological resources that may be on the site.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, current conditions and activities at the site would be allowed to continue including farming and hunting leases. The Pirate's Wharf project would not be developed and the public would not be allowed to access the site.

2.3 ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with the U.S. Department of Interior regulations implementing NEPA, Wicomico County is required to identify the environmentally preferable alternative, which is ordinarily the alternative "that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historic, cultural, and natural resources" (43 CFR Part 46.30).

2.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the existing environment at the proposed project site. The discussion focuses on resources potentially affected by the implementation of the proposed project and provides a baseline for understanding the current condition of these resources. This section also includes an analysis of the environmental consequences of the No Action Alternative and the Proposed Action Alternative.

In accordance with the CEQ regulations, the environmental consequences analysis includes the direct, indirect, and cumulative impacts (40 CFR 1502.16). The intensity of each impact is assessed in the context of the parks purpose and significance and any resource-specific context that may be applicable (40 CFR 1508.27). Where appropriate, mitigation measures for potentially adverse impacts are described. The methods used to assess impacts vary depending on the resources being considered.

3.1 AIR QUALITY

3.1.1 Affected Environment

The Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for criteria pollutants which are those that may pose a concern for human health. Wicomico County is considered in attainment by the EPA and is not listed in the Criteria Pollutant Nonattainment Summary Report (as of November 2018).

Construction activities can contribute to air pollution through land clearing, operation of diesel engines, and working with toxic materials. Construction site activity will not be a significant generator of ozone.

3.1.2 Environmental Consequences

3.1.2.1 No Action Alternative

Under the No Action Alternative, the proposed project would not be built and there would be no change in the current level of ambient air pollutant emissions from the site.

3.1.2.2 Cumulative Impacts of the No Action Alternative

The No Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not likely increase emissions of principal ambient air pollutants.

3.1.2.3 Proposed Action Alternative

Construction of the park facilities would create temporary increases in dust. Impacts to air quality would be expected to be localized and temporary. No impact to regional air quality would be expected.

3.1.2.4 Cumulative Impacts of the Action Alternative

The Proposed Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not impact regional air quality. The Proposed Action Alternative could have a slight effect on air quality in the immediate area for a brief amount of time through the operation of heavy equipment, but no long-term cumulative impacts are expected.

3.2 CULTURAL AND ARCHEOLOGICAL RESOURCES

3.2.1 Affected Environment

The Pirate's Wharf property includes the site of a historic farmstead, wharf, cemetery and potential archeological sites. The Maryland Historical Trust's Maryland Inventory of Historic Properties (MIHP) records the Pirates Wharf Farm (WI-326) as situated on the west side of the Wicomico River. According to the MIHP, the farm apparently consisted of a 1930-1940 two-story farmhouse and gambrel roofed barn. The farmhouse was removed in 2014. The MIHP also records an archeological site, Pirate's Wharf, which is a complex of historic wharf remains on the parcel and in the Wicomico River. The Brady/Price cemetery exists on the property and its limits were delineated in 2016 (Otter2016) .

The property has a very high potential for archeological resources related to its varied human occupation and uses from prehistoric through historic periods because of its setting along the Wicomico River. A Cultural Resources Assessment was completed for the property in 2009 (Otter 2009).

3.2.2 Environmental Consequences

3.2.2.1 No Action Alternative

Under the No Action Alternative, the park would not be developed.

3.2.2.2 Cumulative Impacts of the No Action Alternative

Under the No Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, there are no cumulative impacts.

3.2.2.3 Proposed Action Alternative

The Proposed Action Alternative has the potential to disturb areas of cultural resources and archeological resources. Wicomico County will continue to consult with the Maryland Historical Trust to determine what further archeological investigations may be warranted. Archeological investigations will be completed prior to construction of park facilities to ensure that important archeological resources are not impacted by the planned improvements.

3.2.2.4 Cumulative Impacts of the Action Alternative

The Proposed Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not impact cultural and archeological resources.

3.3. GEOLOGY AND SOILS

3.3.1 Affected Environment

Wicomico County is in the Atlantic Coastal Plain Physiographic Province. The Atlantic Coastal Plain is underlain by a wedge of unconsolidated sediments including gravel, sand, silt, and clay.

The soils on site include the following soil types:

- Hambrook sandy loam, 2 to 5 percent slopes – 10.5 acres
- Mattapex silt loam, 0 to 2 percent slopes – 37.8 acres
- Nassawango silt loam, 0 to 2 percent slopes – 7.3 acres
- Nassawango silt loam, 2 to 5 percent slopes – 1.5 acres
- Othello silt loams, 0 to 2 percent slopes – 255.4 acres
- Transquaking and Mispillion soils, very frequently flooded – 17.5 acres

The Hambrook, Mattapex, and Nassawango soils are classified as Prime Farmland Soils and the Othello soils are classified as Farmland of Statewide Importance (USDA).

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

Under the No Action Alternative, the park would not be constructed and there would be no change to the soils located on the site. The site would most likely continue to be farmed for grain.

3.3.2.2 Cumulative Impacts of the No Action Alternative

The No Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not impact the soils on the site.

3.3.2.3 Proposed Action Alternative

The proposed action alternative would remove prime farmland soils from agriculture use. However, most of the site would remain undeveloped.

3.3.2.4 Cumulative Impacts of the Action Alternative

The Proposed Action Alternative, in conjunction with past, present and reasonably foreseeable future actions, would not impact the floodplain.

3.4 SURFACE WATER

3.4.1 Affected Environment

Surface water on the site consists of the Wicomico River and a pond near the southeastern portion of the property. There is ongoing erosion along the Wicomico River along the northeastern property boundary.

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

Under the No Action Alternative, the park would not be constructed and erosion along the Wicomico River would continue.

3.4.2.2 Cumulative Impacts of the No Action Alternative

The No Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not impact the Wicomico River or the pond on site.

3.4.2.3 Proposed Action Alternative

The proposed action alternative would include construction of a boat ramp and shoreline protection along the Wicomico River. A trail would be constructed to provide access to and around the pond.

3.4.2.4 Cumulative Impacts of the Action Alternative

The Proposed Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not adversely impact the Wicomico River or the pond on the property.

3.5 FLOODPLAIN

3.5.1 Affected Environment

Executive Order 11988, "Floodplain Management," requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. According to *NPS Management Policies 2006* (NPS 2006) and Director's Order 77-2: *Floodplain Management* (NPS 2003), NPS is mandated to strive to preserve floodplain values and minimize hazardous floodplain conditions.

According to the Federal Emergency Management Agency (FEMA) Community Panel No. 24045C0210E, portions of the site along the Wicomico River are located within Zone AE. Zone AE is defined as an area with 1% probability of flooding every year (also known as the "100-year floodplain") where predicted flood water elevations have been established. Properties in Zone AE are considered to be at high risk of flooding under the National Flood Insurance Program.

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

Under the No Action Alternative, the park would not be constructed and existing floodplain would not be affected.

3.5.2.2 Cumulative Impacts of the No Action Alternative

The No Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not impact the floodplain.

3.5.2.3 Proposed Action Alternative

Under the Proposed Action Alternative, shoreline protection would be constructed along the Wicomico River.

3.5.2.4 Cumulative Impacts of the Action Alternative

The Proposed Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not impact the floodplain.

3.6 WETLANDS

3.6.1 Affected Environment

Wetlands were delineated in the areas in accordance with the U.S. Army Corps of Engineers' Wetland Delineation Manual (USACE, 1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Plain Region (USACE 2012). These manuals utilize a three-parameter approach to identifying wetlands, which includes the presence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology. All three parameters normally must be present for an area to be considered a wetland under the USACE jurisdiction in accordance with Section 404 of the Clean Water Act.

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

Under the No Action Alternative existing conditions would continue and no wetland resources would be impacted.

3.6.2.2 Cumulative Impacts of the No Action Alternative

The No Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would not impact wetland resources.

3.6.2.3 Proposed Action Alternative

Under the Proposed Action, wetlands along the Wicomico River would be affected by the construction of shoreline stabilization. Permits will be obtained from the US Army Corps of Engineers and the Maryland Department of the Environment for any alteration of the wetlands. Other wetlands mapped on the site would not be affected.

3.6.2.4 Cumulative Impacts of the Action Alternative

The Proposed Action Alternative, in conjunction with past present and reasonably foreseeable future actions, would not impact wetland resources.

3.7 MIGRATORY BIRDS

3.7.1 Affected Environment

The term "migratory birds applies to native bird species protected by the Migratory Bird Treaty Act (MBTA) (16 U.S. C. 703-711). Under the MBTA it is unlawful to take, kill, or possess migratory Birds. Executive Order 13186 issued January 11, 2001, further defines the responsibilities of federal agencies to protect migratory birds. The order requires the NPS to evaluate the effects of federal actions on migratory birds. There is also a Memorandum of Understanding (MOU) between the NPS and the USFWS to promote the conservation of migratory birds. The purpose of the MOU is to strengthen migratory bird conservation by identifying and implementing strategies promoting conservation and to avoid or minimize adverse impacts on migratory birds.

The following migratory birds are of particular concern because they occur on the USFWS Birds of Conservation Concern (BCC) list or because they warrant special attention in the project area.

1. Bald Eagle – This is not a Bird of Conservation Concern in this area but warrants attention because of the Eagle Act. However, no existing bald eagle nests were observed on or adjacent to the project area. A pair of bald eagles was observed using the site. It is likely that bald eagles use the habitat for hunting.
2. Prairie Warbler – This is a Bird of Conservation Concern throughout its range. The prairie warbler occurs in brushy slashings, bushy pastures, and low pines. It breeds in dry, old clearings, edges of forest, and sandy pine barrens with undergrowth of scrub oaks, especially on ends of slopes and ridges. The prairie warbler likes thick second-growth of hickory, dogwood, hazel, or laurel with blackberry vines. Habitat for the warbler may occur on site.
3. Prothonotary Warbler - This is a Bird of Conservation Concern throughout its range. Prothonotary Warblers breed in flooded bottomland forests, wooded swamps, and forests near lakes and streams. They tend to avoid forest patches smaller than about 250 acres or forest borders less than 100 feet wide. During migration they stop in coastal areas, marshes, citrus groves, and scrub to refuel. Habitat for the Prothonotary Warbler may occur on the forested portion of the site on the north side of Whitehaven Road.
4. Wood Thrush – This is a Bird of Conservation Concern throughout its range. Wood Thrushes breed throughout mature deciduous and mixed forests in eastern North America, most commonly those with American beech, sweet gum, red maple, black gum, eastern hemlock, flowering dogwood, American hornbeam, oaks, or pines. Habitat may occur on the forested portion of the site on the north side of Whitehaven Road.

3.7.2 Environmental Consequences

3.7.2.1 No Action Alternative

Under the No Action Alternative, no direct impacts to migratory birds would be expected.

3.7.2.2 Cumulative Impacts of the No Action Alternative

The No Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, would have no cumulative impact to migratory birds.

3.7.2.3 Proposed Action Alternative

The Proposed Action Alternative would not impact the forested portions of the site that provide habitat for the Birds of Conservation Concern.

3.7.2.4 Cumulative Impacts of the Action Alternative

The proposed Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, is not expected to contribute to cumulative impacts to migratory birds due to the small scale of the proposed project.

3.8 VISITOR USE AND EXPERIENCE

3.8.1 Affected Environment

The project area proposed for Pirates Wharf is currently in agricultural use. There is limited access to the Wicomico River for the public in the area.

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

Under the No Action Alternative, the proposed project would not be developed, and visitors would not be able to access the Wicomico River. There would be no amenities, support services or interpretive information provided for visitor use.

3.8.2.2 Cumulative Impacts of the No Action Alternative

Under the No Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions, the visitor experience for the area would not exist due to lack of amenities.

3.8.2.3 Proposed Action Alternative

Under the Proposed Action Alternative, development would include a boat ramp, parking areas, and public restrooms which would allow visitors to access the Wicomico River.

3.8.2.4 Cumulative Impacts of the Action Alternative

The Proposed Action Alternative, in conjunction with past, present, and reasonably foreseeable future actions would result in long-term and beneficial impacts on visitor use and experience and recreational opportunities. The cumulative impact of this is expected to be minimal as no other new development is anticipated for the area.

3.9 IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

3.9.1 Vegetation

The proposed park facilities will be located on the southeastern portion of the property on the southern side of Whitehaven Road. The property has been in agricultural use and there will be minimal disturbance to existing natural communities. The portion of the property on the northern side of Whitehaven Road and future plans may include trail construction but no other removal of vegetation, thus this topic was dismissed from further consideration.

3.9.2 Wildlife

The site supports wildlife common to Wicomico County including mammals, birds, amphibians and reptiles. Wildlife use of the site is expected to continue unchanged with the construction of the proposed park facilities, thus this topic was dismissed from further consideration. The amount of habitat disturbed would be relatively small compared to the amount of habitat on site and in the surrounding area. The forest on the north side of Whitehaven Road provides habitat for Forest Interior Dwelling Birds as noted by the Maryland Department of Resources Wildlife and Heritage Service however no construction is proposed as part of Phase I on the north side of the road. In addition, the potential blue heron colony would not be affected on the adjacent southern parcel because no construction is proposed in the southernmost portion of the site in Phase I.

3.9.3 Threatened and Endangered Species

There are no known sensitive species on or near the site based on a review of mapping on the Maryland Environmental Resources and Land Information Network (MERLIN) and correspondence from the Maryland Department of Natural Resources (See Section 5.0). . Similarly, the US Fish and Wildlife Service Information for Planning and Conservation Trust Resources Report show there are no

endangered species or critical habitats on site. A copy of the report is included in Section 5-0. There would be no impacts on threatened and endangered species, thus the topic was dismissed from further consideration.

3.9.4 Climate Change

The relatively small scale of the project and limited amount and short duration of construction is not expected to be a significant source of emissions contributing to climate change. Overall use of the area is not expected to significantly increase and would not modify existing surrounding area uses. Therefore, the analysis of climate change was dismissed from further consideration.

3.9.5 Socioeconomic Values

Construction of Pirate's Wharf Park would neither change local and regional land use nor appreciably affect local businesses or other agencies. Short-term benefits to the economy would occur during the construction phase of the project. Construction of the parking lots, boat ramps and other amenities would require some use of the local labor force and locally sourced materials. Visitors to the park may increase business to some local businesses. The impacts on the socioeconomic environment would be minimal, thus the topic was dismissed from further consideration.

3.9.6 Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The Proposed Action Alternative would not have any adverse health or environmental effects on minorities or low-income populations and communities because the proposed site is undeveloped county-owned land and does not contain a resident population. Neighboring residential communities would not be displaced or impacted. Therefore, environmental justice has been dismissed from further consideration.

3.10 MITIGATION MEASURES AND PERMITS FOR THE ACTION ALTERNATIVE

Table 3-1: Summary of Mitigation Measures and Permits Required

Environmental Analysis Topic	Mitigation Measures	Possible Permits
Air Quality	Construction BMPs would be used	None known
Cultural and Archaeological Resources	Phase I and II Archaeological surveys would be conducted as necessary in areas proposed for disturbance	None known
Geology and Soils	BMPs would be implemented to minimize soil erosion during construction	Sediment and Erosion Control Permit
Surface Water	BMPs would be implemented to protect water quality	US Army Corps of Engineers Permit; Maryland

		Department of Environment Permit
Wetlands	1:1 Mitigation may be required as part of the permitting process	US Army Corps of Engineers Permit; Maryland Department of Environment Permit
Migratory Birds	No mitigation measures are expected to be necessary	None known
Visitor Use and Experience	No mitigation measures are expected to be necessary	None known

3.0 LIST OF PREPARERS AND CONTRIBUTORS

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4.0 CORRESPONDENCE

Maryland Department of Planning State Clearinghouse Recommendation dated June 21, 2018

Maryland Department of Planning, Maryland Historical Trust letters dated June 19, 2018 and August 16, 2018

Maryland Department of Natural Resources, Wildlife and Heritage Service, email from Lori Byrne, September 28, 2018.

U.S Department of Interior, Fish and Wildlife Service, dated March 1, 2019

5.0 REFERENCES

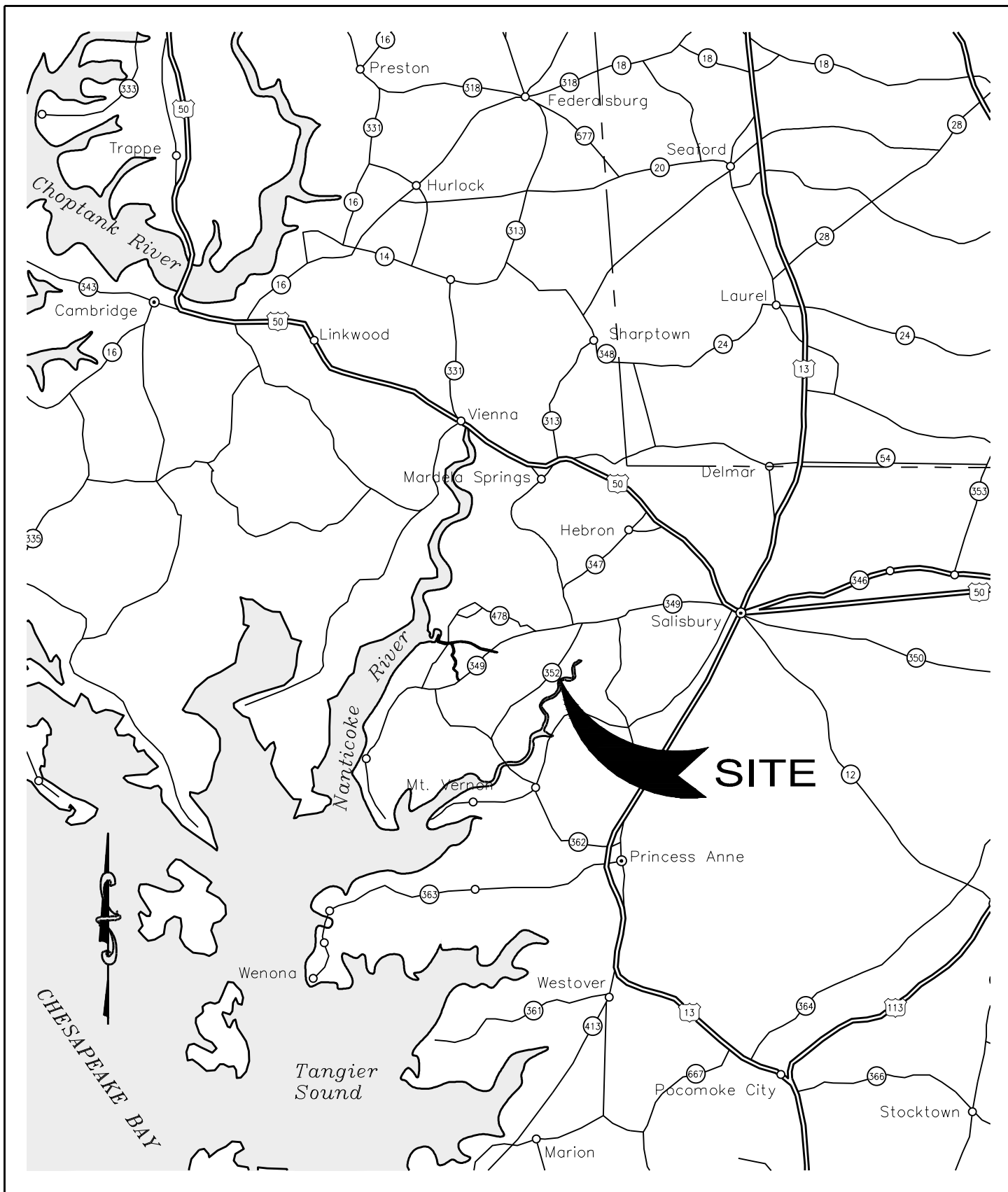
Otter, E. (2016) *Delineation of the Brady/Price Cemetery at Pirate's Wharf*. Wicomico County, Salisbury, MD.

Otter, E. (2009) *Cultural Resources Assessment, Pirate's Wharf, Wicomico County, MD*. Wicomico County, Salisbury, MD.

6.0 LIST OF FIGURES AND TABLES

Figure 1-1 – Vicinity Map

Figure 2-1 – Master Plan



**DAVIS,
BOWEN &
FRIEDEL, INC.** ARCHITECTS ENGINEERS SURVEYORS

SALISBURY, MARYLAND (410) 543-9091
MILFORD, DELAWARE (302) 424-1441
EASTON, MARYLAND (410) 770-4744

LOCATION MAP *Pirates Wharf*

*Whitehaven Road
Wicomico County, Maryland*

Date:

SEPT. 2019

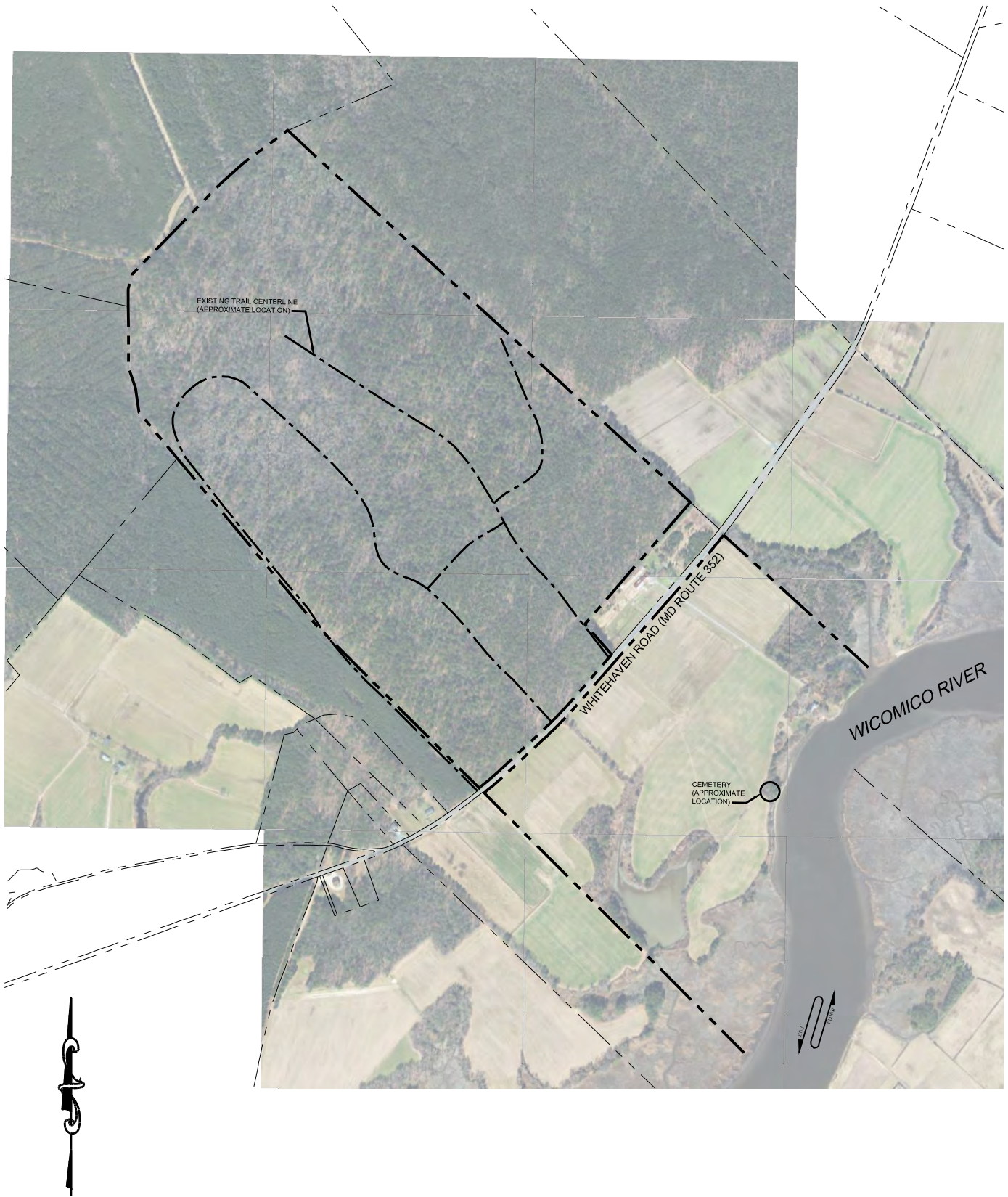
Scale:

1" = 6 MILES

Proj.No.:

0166B011.A01

FIGURE 1-1



DAVIS,
BOWEN &
FRIEDEL, INC. ARCHITECTS ENGINEERS SURVEYORS

SALISBURY, MARYLAND (410) 543-9091
MILFORD, DELAWARE (302) 424-1441
EASTON, MARYLAND (410) 770-4744

VICINITY MAP *Pirates Wharf*

Whitehaven Road
Wicomico County, Maryland

Date:

SEPT. 2019

Scale:

1" = 1000'

Proj.No.:

0166B011.A01

FIGURE 1-2



Wetland Delineation Report for Pirate's Wharf

Lands of Wicomico County MD
Tax Map 55, Parcel 128
4701 Whitehaven Road
Quantico, MD

Prepared for:

Wicomico County Parks and Recreation
500 Glen Avenue
Salisbury, MD 21804

Prepared by:

Davis & Associates
PO Box 733
Chestertown, MD 21620

November 7, 2018

Introduction

Davis & Associates completed a wetland delineation investigation for the property located in Quantico in Wicomico County MD on November 6, 2018. The purpose of the investigation was to determine the extent, location, and classification of any wetlands or waters of the U.S. on the property. Wetlands in the area proposed for development on the south side of Whitehaven Road were flagged. A preliminary delineation (not flagged) was completed for wetlands outside of the area proposed for development. This report summarizes our investigation and results. The following attachments are included:

- Attachment 1. Location Map
- Attachment 2. Aerial Photograph with Preliminary Wetland Delineation
- Attachment 3. Wicomico County Soil Survey Map
- Attachment 4: Routine Wetland Determination Data Forms

Description of the Property

The site is located at 4701 Whitehaven Road in Quantico in Wicomico County, Maryland. The site includes 340.73 acres based on tax records (See Attachment 1 - Location Map). The portion of the site on the south side of Whitehaven Road is in agricultural use and the portion of the site on the north side of Whitehaven Road is forested. The site is owned by Wicomico County, 500 Glen Avenue, Salisbury, MD 21804. The latitude is 39.048771 and the longitude is -75.828361.

Methodology

The wetland delineation was conducted in accordance with the U.S. Army Corps of Engineers' Wetland Delineation Manual (USACE, 1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Plain Region (USACE 2012). These manuals utilize a three-parameter approach to identifying wetlands, which includes the presence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology. All three parameters normally must be present for an area to be considered a wetland under the USACE jurisdiction in accordance with Section 404 of the Clean Water Act.

The wetland investigation included an evaluation of Wicomico County Soil Survey and available topographic maps of the property.

Soils

A hydric soil is defined as a soil "that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Federal Register, July 13, 1994). According to the USACE's Wetland Delineation Manual (USACE, 1987), common hydric soil indicators include a low chroma matrix (chroma less than 2, value greater than 4), concretions, and listing on local or national hydric soils lists.

The following soils were mapped on the property in the Wicomico County Soil Survey (USDA, NRCS):

Table 1. Summary of Soil Map Unit Classifications

Map Symbol	Soil Series
HdB	Hambrook sandy loam, 2 to 5 percent slopes
MtdA	Mattapex silt loam, 0 to 2 percent slopes
MtdB	Mattapex silt loam, 2 to 5 percent slopes
NsA	Nassawango silt loam, 0 to 2 percent slopes
NsB	Nassawango silt loam, 2 to 5 percent slopes
OtA	Othello silt loam, 0 to 2 percent slopes
TP	Transquaking and Mispillion soils, very frequently flooded, tidal

A copy of the soil map is included as Attachment 3.

Vegetation

Plant species observed on the property were identified and the wetland indicator status for each species was determined from the *US Army Corps of Engineers, North American Digital Flora: National Wetland Plant List, Atlantic and Coastal Plain 2016*. The indicator status of a certain species indicates the probability that it will occur in a wetland the Atlantic and Gulf Coastal Plain of the United States. The indicator status designations are presented for each species identified at the property in Attachment 4. The following is an explanation of the indicator status designations:

- OBL = Obligate Wetland
(greater than 99 % probability of occurrence in wetland)
- FACW= Facultative Wetland
(greater than 66 % to less than 99 % probability of occurrence in wetland)
- FAC = Facultative
(33 % to 66 % probability of occurrence in wetland)
- FACU = Facultative Upland
(1 % to less than 33 % probability of occurrence in wetland)
- UPL = Obligate Upland
(less than 1% probability of occurrence in wetland)

Hydrology

The USACE wetland delineation manual states that wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils that are saturated to the surface at some time during the growing season. Hydrologic indicators include, but are not limited to, sediment deposits, visual inundation, drift lines, saturated soils, and watermarks.

Results

Based upon our investigation, jurisdictional wetlands do occur on the site as shown on the Wetland Delineation Map included in the Appendix. The forested area on the north side of Whitehaven Road are jurisdictional wetlands. Routine Wetland Delineation Data Forms are included as Attachment 4. Wetland delineations are preliminary until confirmed by the US Army Corps of Engineers and the Maryland Department of the Environment.

$$\leftarrow z$$

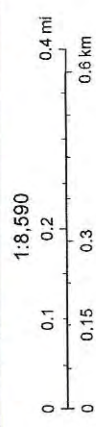

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

Maryland Department of Natural Resources
HERE, Garmin, INCREMENT P, NGA, USGS |

Attachment 2:
Pirate's Wharf Wetland Delineation Map



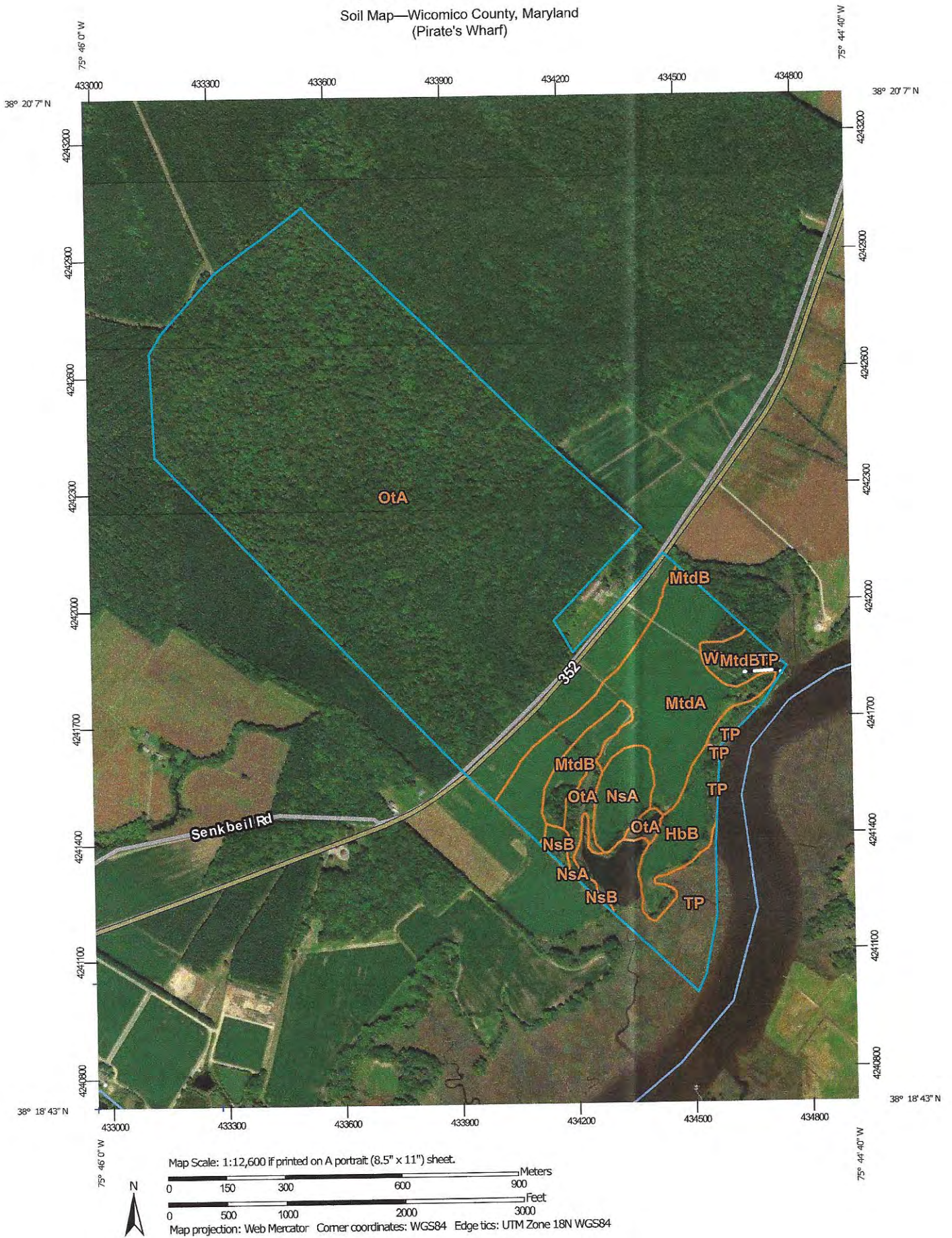
- Property Boundary
- Wetland Boundary - flagged
- Wetland Boundary - not flagged



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, © OpenStreetMap contributors, and the GIS User Community, MD IMAP, DoIT

Attachment 3

Soil Map—Wicomico County, Maryland
(Pirate's Wharf)



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

11/27/2018
Page 1 of 3

MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Wicomico County, Maryland
Survey Area Data: Version 13, Sep 6, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 5, 2016—Sep 24, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HbB	Hambrook sandy loam, 2 to 5 percent slopes	10.5	3.1%
MtdA	Mattapex silt loam, 0 to 2 percent slopes, Northern Tidewater Area	37.8	11.0%
MtdB	Mattapex silt loam, 2 to 5 percent slopes, Northern Tidewater Area	12.1	3.5%
NsA	Nassawango silt loam, 0 to 2 percent slopes	7.3	2.1%
NsB	Nassawango silt loam, 2 to 5 percent slopes	1.5	0.4%
OtA	Othello silt loams, 0 to 2 percent slopes, Northern Tidewater Area	255.4	74.6%
TP	Transquaking and Mispillion soils, very frequently flooded, tidal	17.5	5.1%
W	Water	0.2	0.1%
Totals for Area of Interest		342.4	100.0%

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Pirates Wharf City/County: Quantico/Wicomico Sampling Date: 11-6-18
 Applicant/Owner: Wicomico County State: MD Sampling Point: SPI
 Investigator(s): Norren Davis Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): level Local relief (concave, convex, none): none Slope (%): 2-5
 Subregion (LRR or MLRA): LRR T Lat: 38.3214 Long: -75.74798 Datum: _____
 Soil Map Unit Name: HbB - Hambrook sandy loam 2 to 5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present?	Yes _____ No ☒	
Wetland Hydrology Present?	Yes _____ No ☒	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☐ High Water Table (A2) ☐ Aquatic Fauna (B13) ☐ Saturation (A3) ☐ Marl Deposits (B15) (LRR U) ☐ Water Marks (B1) ☐ Hydrogen Sulfide Odor (C1) ☐ Sediment Deposits (B2) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Drift Deposits (B3) ☐ Presence of Reduced Iron (C4) ☐ Algal Mat or Crust (B4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes _____ No ☒ Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No ☒
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: SPI

Atlantic and Gulf Coastal Plain Region – Interim Version

SOIL

Sampling Point: SP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/4							
4-6	2.5Y 3/2							
	Gravel							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
☐ Histosol (A1)	☐ Polyvalue Below Surface (S8) (LRR S, T, U)	☐ 1 cm Muck (A9) (LRR O)	
☐ Histic Epipedon (A2)	☐ Thin Dark Surface (S9) (LRR S, T, U)	☐ 2 cm Muck (A10) (LRR S)	
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (LRR O)	☐ Reduced Vertic (F18) (outside MLRA 150A,B)	
☐ Hydrogen Sulfide (A4)	☐ Loamy Gleyed Matrix (F2)	☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)	
☐ Stratified Layers (A5)	☐ Depleted Matrix (F3)	☐ Anomalous Bright Loamy Soils (F20)	
☐ Organic Bodies (A6) (LRR P, T, U)	☐ Redox Dark Surface (F6)	☐ (MLRA 153B)	
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)	☐ Depleted Dark Surface (F7)	☐ Red Parent Material (TF2)	
☐ Muck Presence (A8) (LRR U)	☐ Redox Depressions (F8)	☐ Very Shallow Dark Surface (TF12) (LRR T, U)	
☐ 1 cm Muck (A9) (LRR P, T)	☐ Marl (F10) (LRR U)	☐ Other (Explain in Remarks)	
☐ Depleted Below Dark Surface (A11)	☐ Depleted Ochric (F11) (MLRA 151)		
☐ Thick Dark Surface (A12)	☐ Iron-Manganese Masses (F12) (LRR O, P, T)		
☐ Coast Prairie Redox (A16) (MLRA 150A)	☐ Umbric Surface (F13) (LRR P, T, U)		
☐ Sandy Mucky Mineral (S1) (LRR O, S)	☐ Delta Ochric (F17) (MLRA 151)		
☐ Sandy Gleyed Matrix (S4)	☐ Reduced Vertic (F18) (MLRA 150A, 150B)		
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 149A)		
☐ Stripped Matrix (S6)	☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)		
☐ Dark Surface (S7) (LRR P, S, T, U)			

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No ☒
Remarks:	

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Pirates Wharf City/County: Quantico/Wicomico Sampling Date: 11-6-18
 Applicant/Owner: Wicomico County State: MD Sampling Point: SP2
 Investigator(s): Noreen Davis Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): level Local relief (concave, convex, none): none Slope (%): 2-5
 Subregion (LRR or MLRA): LART Lat: 38.3214 Long: -75.74748 Datum: _____
 Soil Map Unit Name: Mtd B - Mattapex silt loam NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland?	Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____		
Wetland Hydrology Present?	Yes ☒ No _____		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
☐ Surface Water (A1)	☒ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)	
☐ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☒ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)	
		☐ FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes _____ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes ☒ No _____	
Water Table Present?	Yes _____ No ☒ Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____ No ☒ Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION – Use scientific names of plants.

Sampling Point: 522

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
4. _____				
5. _____				
6. _____				
7. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling Stratum (Plot size: <u>30'</u>) _____ = Total Cover				Hydrophytic Vegetation Indicators: ☐ Dominance Test is >50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
_____ = Total Cover				
Shrub Stratum (Plot size: <u>30'</u>) _____ = Total Cover				
1. <u>Rosa multiflora</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>30'</u>) _____ = Total Cover				
1. <u>Phragmites australis</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____) _____ = Total Cover				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Hydrophytic Vegetation Present? Yes ☒ No ☐				
Remarks: (If observed, list morphological adaptations below). 				

SOIL

Sampling Point: SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2							
6-12	10YR 3/1							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Pirates Wharf City/County: Quantico/Wicomico Sampling Date: 11-6-18
 Applicant/Owner: Wicomico County State: MD Sampling Point: SP3
 Investigator(s): Noreen Davis Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): level Local relief (concave, convex, none): none Slope (%): 0-2
 Subregion (LRR or MLRA): LRR T Lat: 38.3214 Long: -75.74748 Datum: _____
 Soil Map Unit Name: MtA - Mattaponi silt loam NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

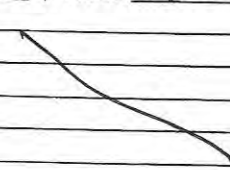
Hydrophytic Vegetation Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes _____ No _____	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)
☐ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)
☐ Water Marks (B1)	☒ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)
		☐ FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes _____ No _____	Depth (inches): _____	Wetland Hydrology Present? Yes ☒ No _____
Water Table Present? Yes _____ No _____	Depth (inches): _____	
Saturation Present? Yes _____ No _____	Depth (inches): _____	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION – Use scientific names of plants.

Sampling Point: SP3

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. 				Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)
2.				Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)
4.				
5.				
6.				
7.				
= Total Cover				
Sapling Stratum (Plot size: <u>30'</u>)				
1. <u>Salix nigra</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Diospyros virginiana</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
4.				
5.				
6.				
7.				
= Total Cover				
Shrub Stratum (Plot size: <u>30'</u>)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
= Total Cover				
Herb Stratum (Plot size: <u>30'</u>)				
1. <u>Juncus effusus</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Phragmites australis</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
= Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. <u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
2.				
3.				
4.				
5.				
= Total Cover				
Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height. Hydrophytic Vegetation Present? Yes ☒ No ☐				
Remarks: (If observed, list morphological adaptations below).				

SOIL

Sampling Point: SP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/3							
6-12	10YR 3/2							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: