APPENDIX E: WETLAND AND WATERWAY DELINEATION REPORT

Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

WETLAND AND WATERWAY DELINEATION REPORT

Maryland Transportation Authority
MDTA

FEBRUARY 2025

TABLE OF CONTENTS

1 INTRODUCTION 1

2 METHODOLOGY 1

2.1 Published Data Review 1

2.2 Delineation 3

3 RESULTS 4

3.1 Published Data Review 4

3.1.1 Watersheds 4

3.1.2 Wetlands and Waterways 5

3.1.3 Floodplain 7

3.1.4 Soils 7

3.2 Delineation 8

3.3 Wetland Function and Value Assessment 14

Summary 17

4 REFERENCES 18

LIST OF FIGURES

Figure 1: Selected Corridor Alternative 2

Figure 2: Watershed Boundaries 6

LIST OF TABLES

Table 1: Wetland Indicator Status 4

Table 2: Wetland and Waterway Delineation Resource Summary 8

Table 3: Functions and Values 15

APPENDICES

Appendix A Resource Mapping

Appendix B Resource Table

Appendix C Photographic Logs

Appendix D Wetland Function and Value Forms

ABBREVIATIONS AND ACRONYMS

BCS	Bay Crossing Study
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GIS	Geographic Information Systems
GPS	Global Positioning System
MDNR	Maryland Department of Natural Resources
MDE	Maryland Department of the Environment
MDTA	Maryland Transportation Authority
NEPA	National Environmental Policy Act
NOAA	National Oceanic Atmospheric Administration
NPDES	National Pollutant Discharge Standards
NWI	National Wetland Inventory
NRCS	Natural Resource Conservation Service
SHA	State Highway Administration
SSURGO	Soil Survey Geographic Database
SWM	Stormwater Management
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1 INTRODUCTION

The Maryland Transportation Authority (MDTA), in coordination with the Federal Highway Administration (FHWA), has initiated the Chesapeake Bay Crossing Study: Tier 2 National Environmental Policy Act (NEPA), referred to as the "Bay Crossing Study." The Bay Crossing Study was launched to evaluate corridors for the purpose of improving mobility and providing additional capacity and access across the Chesapeake Bay. Following the results of the NEPA Tier 1 Study, which was approved in April 2022, the Tier 2 NEPA Study focuses on the Selected Corridor Alternative (SCA) (**Figure 1**), located at the site of the existing William Preston Lane Jr. Memorial (Bay) Bridge and its approaches along US 50/301, encompassing an area of approximately two-miles-wide and 22-miles-long. The FHWA and MDTA are preparing a Tier 2 Environmental Impact Statement (EIS) to satisfy NEPA requirements. In support of this evaluation, a delineation of Waters of the U.S., and Waters of the State, including wetlands, has been conducted within the SCA, approximately 250 to 300 feet wide on either side of US 50/301.

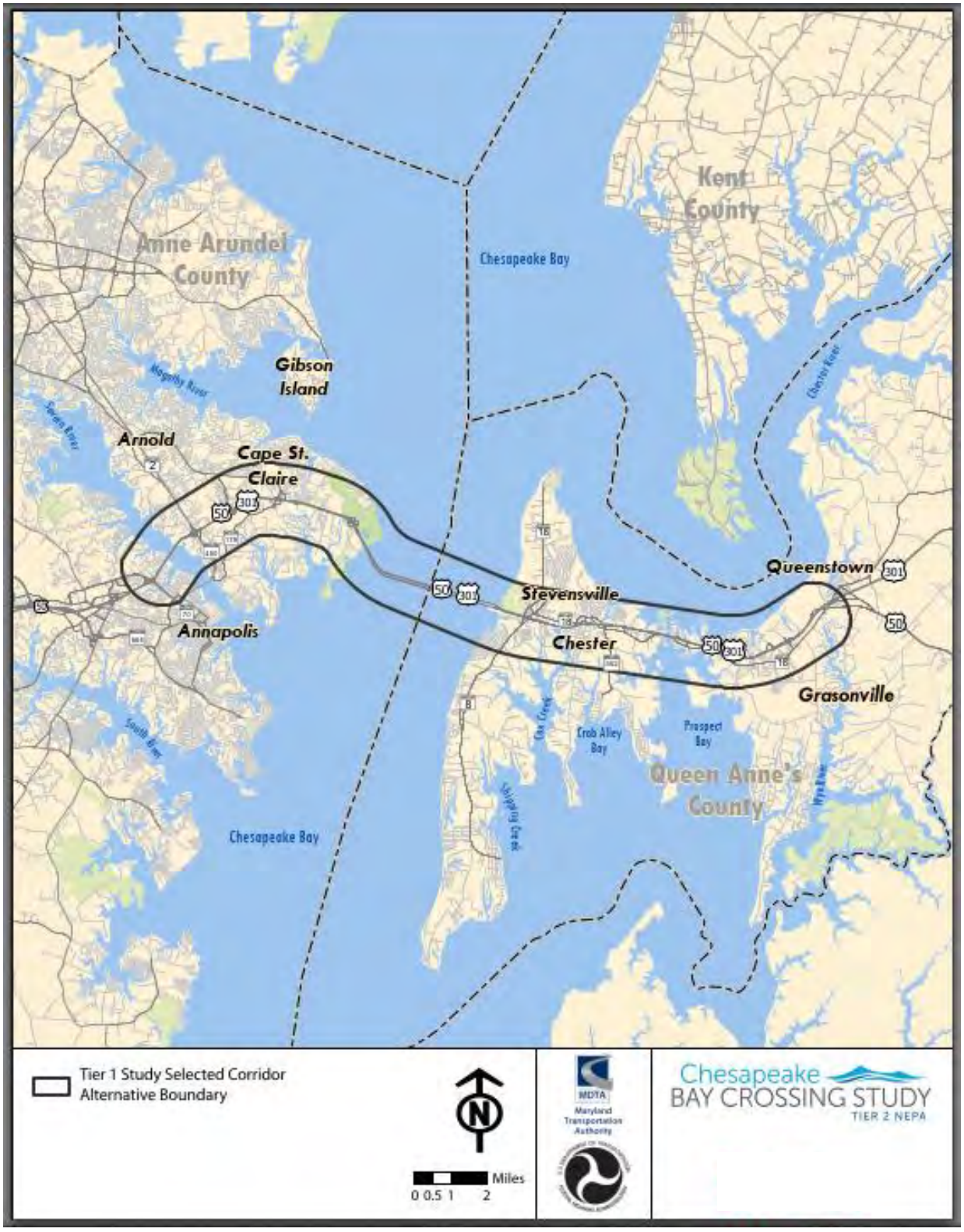
2 METHODOLOGY

2.1 Published Data Review

An initial desktop review of existing published geographic information systems (GIS) databases was conducted to aid in the identification of waterways and wetlands within the overall SCA study boundary. This information included the following resources and sources:

- U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) – hydric soils
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) - nontidal and tidal wetlands and waterways
- Maryland Department of Natural Resources (MDNR) – nontidal wetlands and waterways; 1972 Tidal Wetland Boundary; Wetlands of Special State Concern; salt marshes
- U.S. Geological Survey (USGS) – waterbodies (rivers, streams, lakes)
- Maryland Department of the Environment (MDE) Designated Use Classes for Maryland's Surface Waters
- Anne Arundel County and Queen Anne's County databases - parcel data
- Federal Emergency Management Agency (FEMA) – Flood Insurance Rate Map (FIRM) for 100-year floodplain
- USGS and County databases [including Light Detection and Ranging (LiDAR)] – topography/geology/vegetation
- Maryland State Highway Administration (SHA) – right-of-way boundaries; existing National Pollutant Discharge Standards (NPDES) mapped conveyances and stormwater management facilities

Figure 1: Selected Corridor Alternative



2.2 Delineation

The study limits for the wetland and waterway delineation includes a swath approximately 250 to 300 feet north and south of existing US 50/301. The study limits widen beyond this in places to encompass existing roadway interchanges, or areas identified as in need of additional study (refer to the study limits illustrated on **Appendix A** mapping set). The wetland delineation study area consists of approximately 1,143 acres in Anne Arundel County, and 1,305 acres in Queen Anne's County.

The field delineations were conducted in accordance with the U.S. Army Corps of Engineers (USACE) *Wetland Delineation Manual* (USACE, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* (USACE, 2010), which describe the three-parameter approach to delineating typical wetlands (hydrophytic vegetation, hydric soils, and wetland hydrology) and the approach for delineating atypical wetlands. Wetland boundaries and intermittent/perennial stream boundaries were marked in the field (in areas with feasible access and property owner permission) using pink wetland flagging tape, with each flag assigned an alphanumeric designation as specified per watershed and/or prominent waterway. Flags were located using Trimble™ Geo XH 7.0 and Catalyst sub-meter accuracy global positioning system (GPS) equipment, or equivalent. Large perennial streams and tidal shorelines were not flagged in the field. All data was collected in an ArcGIS Field Maps data collection mobile application, allowing map viewing and real-time location sharing between field teams and in-office support. On private properties where owners have acknowledged and provided access to their property, the field accuracy was noted as "Field Delineated" in the **Appendix B** resource table, and areas without full access to traverse the site were noted as "Approximated."

A modified approach to soils identification was conducted for all private property locations. Field soil sampling using an auger or shovel to examine the soil profile was conducted only within the SHA and MDTA rights-of-way. For areas of the project study area that were outside of the SHA and MDTA rights-of-way, published soil survey information was utilized to characterize the soils for the delineation. For collected soil samples, the *Field Indicators of Hydric Soils in the United States Version 8.2*, (USDA NRCS, 2018) was referenced to determine the presence of hydric soil indicators. Where a traditional soil sample was able to be retrieved, the delineation parameter was noted as "Routine" and where no soil sample was retrieved in the field were noted as "Modified". For all identified wetlands, the *National Wetland Plant List* (USACE, 2020) was referenced to determine the wetland indicator status of plants identified (**Table 1**).

In general, for inaccessible properties where resources were deemed likely present, published resource data was used in conjunction with field observations to identify approximate resource boundaries. Routine Wetland Data Forms were completed to capture information for wetlands and associated upland determination data points collected in the field. To assist in later calculation of mitigation requirements using the Maryland Stream Mitigation Framework, additional stream functional data was collected during the field assessment and recorded on stream point data sheets for intermittent and perennial systems. Due to recent changes in Federal definitions of Waters of the U.S., field teams did not flag the boundaries of ephemeral systems. Presence of

these systems were noted in the field as Points of Interest in the Field Maps application. Boundaries of intermittent streams were captured in the field delineations. These systems are those that have flowing water during certain times of the year, when a groundwater influence provides hydrology. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of hydrology for stream flow to an intermittent stream.

Table 1: Wetland Indicator Status

Indicator Category	Indicator Abbreviation	Description
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability >99%) under natural conditions
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67% - 99%), but occasionally found in non-wetlands (estimated probability 1% - 33%)
Facultative	FAC	Equally likely to occur in wetlands (estimated probably 34% - 66%) or non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67% - 99%), but occasionally found in wetlands (estimated probability 1% - 33%)
Obligate Upland	UPL	Almost always occur in non-wetlands (estimated probability >99%) under natural conditions

Each delineated resource was classified in accordance with the *Classification of Wetlands and Deepwater Habitats of the United States* (USFWS, 1979), commonly referred to as the Cowardin Classification System. The classification of each system is included in the **Appendix B** resource table. Representative photographs of each wetland and waterway, and a wetland soil sample, if available, were taken during field investigations and included as **Appendix C**. A wetland functions and values assessment for all wetlands measuring greater than 0.5 acre within the study area was also conducted. These were evaluated in accordance with the *Highway Methodology Workbook Supplement: Wetland Functions and Values, a Descriptive Approach* (USACE New England District, 1999) and forms are included as **Appendix D**.

3 RESULTS

3.1 Published Data Review

Section 3.1 provides a high-level overview of published information gathered and used to support wetland and waterway field investigations.

3.1.1 Watersheds

The western limit of the study area begins at the eastern end of the Severn River Bridge, within the West Chesapeake Bay 6-digit watershed, moving east through the Chesapeake Bay (Proper) 6-digit watershed, and into the Chester River 6-digit watershed. The study area extends to the

east as far as the Queenstown Premium Outlets shopping area just after the split between US 50 and US 301. Within these larger watershed boundaries are smaller divisions of drainage, designated with an 8-digit hydrologic unit. The following 8-digit watersheds are located within the study area and illustrated on **Figure 2: Watershed Boundaries**

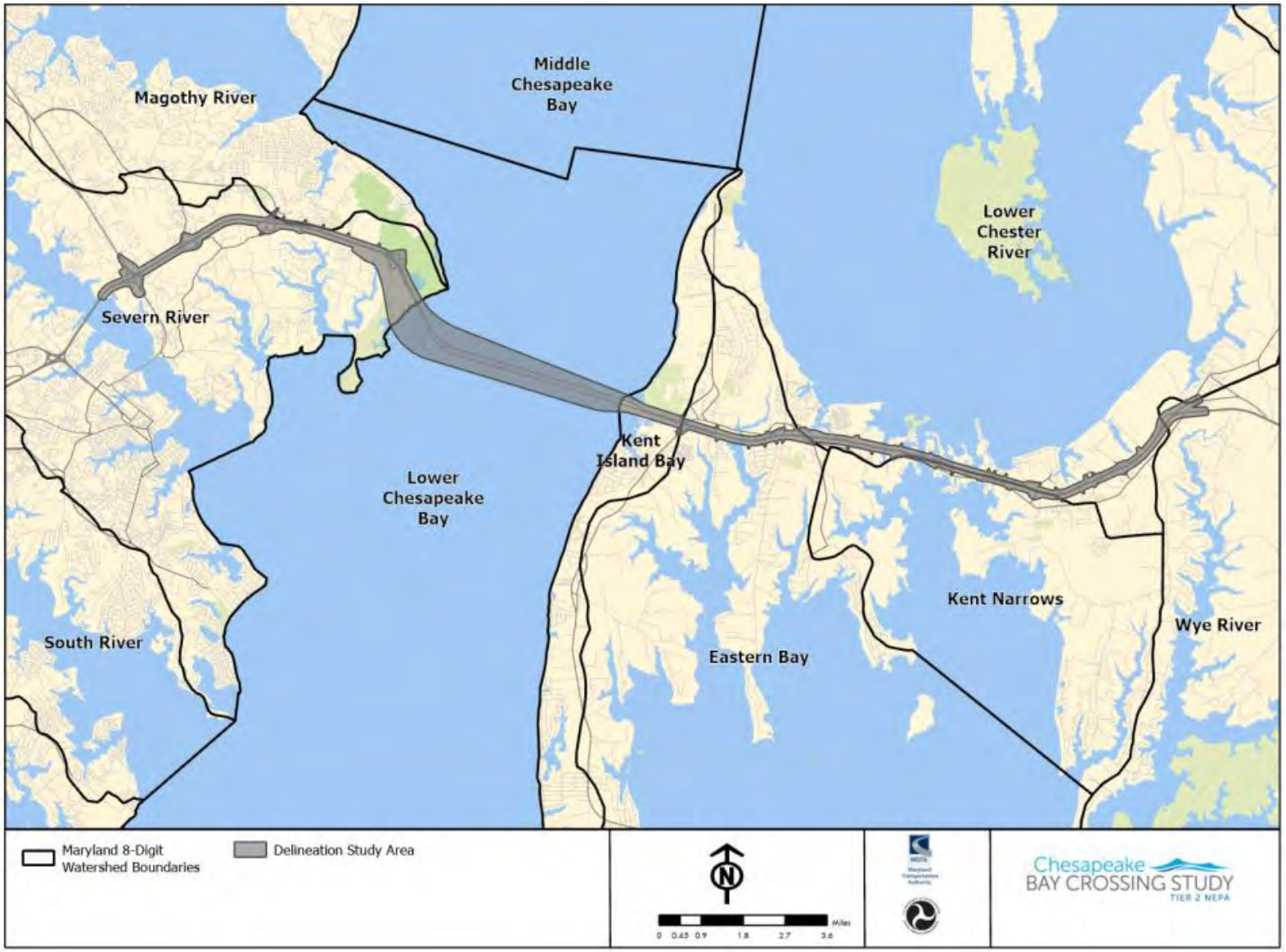
- Severn River (02131002);
- Magothy River (02131001);
- Lower Chesapeake Bay (02139998);
- Kent Island Bay (02130511);
- Eastern Bay (02130501);
- Lower Chester River (02130505);
- Kent Narrows (02130504); and
- Wye River (02130503).

3.1.2 Wetlands and Waterways

The USFWS NWI and DNR published mapping identifies an array of tidal and nontidal wetland systems within the study limits in both Anne Arundel County and Queen Anne's County. In Anne Arundel County wetlands are largely associated with four main waterways: Severn River, Mill Creek, Whitehall Creek, and Meredith Creek. Each of these waterways drain south/southeast to the Chesapeake Bay, south of or immediately adjacent to the Bay Bridge. Maryland's 1972 Tidal Wetland Boundary Maps indicate that wetlands and ponds located along the eastern shoreline of the Severn River have a tidal influence. Mapped wetlands associated with Mill Creek and Whitehall Creek are not located within tidal limits; these are identified as nontidal waterways with adjacent palustrine (freshwater) systems and do not have a tidal classification until south of the wetland delineation study area. Largely all mapped systems associated with Meredith Creek within the study area are within tidal limits, classified as estuarine and marine subtidal waterways and both subtidal and intertidal wetlands. One lacustrine classified lake is located west of US 50/301, just prior to the Bay Bridge. Mapped waterways and associated wetlands to the Little Magothy River, draining north of US 50/301, do not fall within study limits.

Mapped wetlands in Queen Anne's County are associated with the following mostly tidal classified estuarine and marine systems: Thompson Creek, Cox Creek, Macum Creek, Piney Creek, Kent Island Narrows, Prospect Bay (including Marshy Creek), Chester River (including Muddy Creek, Jackson Creek, Winchester Creek, and Walsey Creek), and the Wye River. Queenstown Creek, a tributary to the Chester River, is located just north of the study area and mapped wetlands associated with this waterway are not located within and do not drain into the study area. The 1972 Tidal Wetland Boundary largely abuts US 50/301 either to the north or south, on both sides of the roadway in most waterway locations, described in more detail in Section 3.2. Palustrine nontidal wetlands are located beyond tidal boundaries. No lacustrine classified systems are located within Queen Anne's County study limits.

Figure 2: Watershed Boundaries



3.1.3 Floodplain

The FEMA FIRM maps identify floodplain located within the study area in Anne Arundel County and Queen Anne's County, largely associated with waterways identified in the previous section. Most of these floodplain areas are classified on FIRM maps as Zone AE, meaning an area that has a 1% or greater chance of flooding every year. These are also noted as Special Flood Hazard Areas and commonly referred to as the 100-year floodplain, where flood risks are high and may be expected once every 100 years. These Zone AE areas are influenced by a wave height of less than three feet. Mill Creek has a floodplain of Zone A within the study area, still classified like Zone AE in most other locations, however with lesser wave influence for this waterway. Three locations within the study area are identified within Zone VE, known as a Coastal High Hazard Area, and affected by more wave action and fast-moving water: the western shorelines of the Chesapeake Bay, the eastern shoreline of the Chesapeake Bay specifically south of the Bay Bridge, and the Kent Island Narrows south of US 50/301.

Many waterways within the study area closely correlate with the 1972 Tidal Wetland Boundary and thus "subject to coastal or tidal flooding by high tides, hurricanes, tropical storms, and steady onshore winds".[1] Where floodplain boundaries extend along waterways beyond the 1972 Tidal Wetland Boundary, they are nontidal floodplain and flooding events are more solely driven by precipitation.

With the largely lower elevations and less topographic variation on Maryland's Eastern Shore (land east of the Chesapeake Bay), the 100-year floodplain correlates to a wider expanse around waterways, typically incorporating adjacent mapped wetlands. Approximately 12% of the wetland delineation study area in Anne Arundel County consists of mapped FEMA 100-year floodplain, and approximately 23% of the study area in Queen Anne's County has mapped floodplain.

3.1.4 Soils

A hydric soil is one that has formed under conditions of saturation, flooding, or ponding for long enough during the growing season that anaerobic conditions have formed. The USDA NRCS soils data shows significantly less area of mapped hydric or partially hydric[2] soils identified in the Anne Arundel County study area with approximately 7% mapped, than the Queen Anne's County study area with approximately 45% mapped. In Anne Arundel County, area along Mill Creek and Whitehall Creek tributaries are partially hydric soils, and hydric soils are present along Meredith Creek and Mezick Pond. All locations of waterway crossings and surrounding most NWI mapped wetland systems in Queen Anne's County are mapped hydric soils; no partially hydric soils are present.

[1]Maryland Department of the Environment https://mde.maryland.gov/programs/water/StormwaterManagementProgram/FloodHazardMitigation/Pages/floodplainregs.aspx

[2] "Partially Hydric" means that at least one major component listed for a given map unit is rated as hydric, and at least one other major component is not rated hydric, with more than 33% to less than 67% of components hydric. (USDA NRCS Field Office Technical Guide)

3.2 Delineation

Field investigations were conducted between the months of September and December 2023, with limited additional site visits conducted in January 2024. Results of the wetland and waterway delineations are illustrated in **Appendix A** resource mapping and **Appendix B** resource table. **Appendix A** mapping is presented in a series of 35 linearly connecting map sheets, beginning at the westernmost study area limit in Anne Arundel County and extending to the easternmost study area limit in Queen Anne's County. The maps illustrate all field delineated wetlands and waterways, including approximated wetland and waterway boundaries within the study area, located on properties where access was not granted, as well as the logical hydrologic extension of systems extending beyond the study area and represented by published GIS information. The **Appendix B** resource table describes all wetland systems and waterways identified within the study area, also organized from west to east to correlate clearly with resource mapping. **Table 2** below presents a summary of all wetland and waterways identified within the study area, providing a high-level preview of the data collected. The following discussions provide an overview of the existing environment, tidal and nontidal waterways, different wetland systems encountered and observed hydrological connections. These are presented in groupings roughly developed from waterway drainage systems.

Table 2: Wetland and Waterway Delineation Resource Summary

Resource	Classification	# Systems Delineated
Wetland	Palustrine Emergent (PEM) Palustrine Scrub/Shrub (PSS) Palustrine Forested (PFO) Palustrine Unconsolidated bottom (PUB) Estuarine Emergent (E2EM) Estuarine Scrub/Shrub or Forested (E2SS or E2FO)	36 6 59 8 31 4
Total Wetlands		**144**
Total Wetlands > 0.5 acre within Study Area		62
Waterway	Nontidal Perennial (R2) Nontidal Intermittent (R4) Tidal (E1)	16 23 19
Total Waterways		**58**

Severn River

The Severn River and field delineated wetlands and waterways draining to the Severn River are illustrated on **Appendix A** mapping sheets 1, 2 and 2a, and described in **Appendix B**, page 1. Resources identified as those with drainage to the Severn River were delineated with a "SR" identifier, as seen in appendix items. The 8-digit Severn River Watershed makes up most of the study area within Anne Arundel County (**Figure 2**). A portion of the study area is located within the Magothy River Watershed, located to the north of US 50/301, between Cape St. Claire Road and Yorktown Road, however field delineations did not identify any wetlands or streams within

the limits of this watershed. Therefore, all resources identified within the Anne Arundel County study area are located within the Severn River Watershed.

The Severn River functions as the western limits of the project study area. One Wetland of Special State Concern is in this watershed, within the overall SCA 2-mile-wide study corridor. It is situated along Chase Creek, north of US 50/301 and west of Route 2, however it is over one-half mile from the focused wetland delineation study area. Within the wetland delineation study area, a tidal common reed (*Phragmites* australis) wetland is located largely underneath of the US 50/301 bridge over the Severn River, at the western study limits, and has a palustrine nontidal wetland on either side, along the shoreline. Further to the northeast, and beyond an existing private pier/boat dock on the Severn River, is an additional palustrine emergent (PEM) wetland that extends beyond the study limits and connects to an intertidal area. Cool Spring Cove and Cool Spring Creek are located just north and beyond the study area boundary (not in view in **Appendix A**). Crouchs Pond (or Winchester Pond) and Winchester Pond Tributary are located just south of the study area. The upper most portions of this tributary are just marginally within the study area, however identified as ephemeral, fed only by stormwater runoff and therefore not delineated in field investigations. This system does not become intermittent until beyond the southern limits of the study area.

The Manresa Pond Tributary (SR_WUS5 identifies upstream intermittent portion of stream and SR_WUS2 identifies downstream perennial portion) converges with the Severn River south of the study area, however, develops within the study limits near the intersection of US 50/301 and MD 2. This lower perennial nontidal tributary is fed through several smaller intermittent streams, connecting within and underneath the adjacent roadway infrastructure. Several PEM and palustrine forested (PFO) wetlands abut and surround this stream, with an additional inline pond classified as a palustrine unconsolidated bottom (PUB), but functioning as a stormwater management (SWM) facility. Although the FEMA 100-year floodplain does not extend north along this waterway and wetlands in the study area, stormflow from Manresa Pond Tributary supports the establishment of these fringe wetlands. One palustrine system, matching closely to the inline pond, is the only resource in this area identified on USFWS NWI mapping.

Mill Creek

East of the Severn River, the next major waterway crossing under US 50/301 is Mill Creek. Resources delineated in this section of the study area are identified with a "MC" identifier. Mill Creek and associated field delineated wetlands and waterways are illustrated on **Appendix A** mapping sheets 2 and 3, and described in **Appendix B**, pages 1 - 2. Mill Creek is a Use I perennial waterway classified as nontidal within the study area and as per the 1972 Tidal Wetland Boundary, is classified as tidal waters south and outside of the study area. The mainstem of Mill Creek north of the roadway (MC_WUS1) is heavily influenced by beaver activity, which has impounded the waters in this area, and vegetation is present within the channel through the growing season and open water through the winter months. It is approximately 300 feet wide within the study area and is bound on each side by PFO wetlands. The river is piped under US 50/301 to an approximate 12-foot-wide open channel (MC_WUS2), which is fed by a nontidal perennial tributary from the west, and both nontidal perennial and intermittent tributaries from the east. A linear PFO wetland

borders the western tributary, and additional PFO wetlands are associated with the two tributaries from the east. The creek receives additional drainage from an existing SWM facility south of US 50/301. Mill Creek, south of the roadway, has been greatly altered from its original channel patterns and connections due to commercial development. This fragmentation results in tributaries and forested wetlands scattered between commercial properties, which have expanded since the 1980's and exist today as several well-established large car dealerships along US 50/301.

Whitehall Creek

Whitehall Creek and associated field delineated wetlands and waterways are illustrated on **Appendix A** mapping sheets 4 - 8, and described in **Appendix B**, pages 2-3. Resources delineated in this section of the study area are identified with a "WhC" identifier. Whitehall Creek is a perennial nontidal Use I tributary meandering through a large portion of the Anne Arundel County study area east of Mill Creek and west of Meredith Creek, bisecting US 50/301 several times and traversing almost three linear miles along the roadway. This tributary and its several intermittent and perennial channels extend from just east of Old Mill Bottom Road, west through the interchanges at St. Margaret's Road with extensive SHA wetland mitigation area and SWM facilities, and east as far as Jenkins Lane. No waterways in the study area are mapped within the 1972 Tidal Wetland Boundary, and all observations and delineations associated with Whitehall Creek are indicative of nontidal systems.

Nearly the entire expanse of Whitehall Creek (WhC_WUS1) and its tributaries within the study area are surrounded by palustrine wetlands; most extensively PFO, but also scattered locations of PEM and palustrine scrub/shrub (PSS) wetlands. Although the FEMA 100-year floodplain does not extend as far north along Whitehall Creek to be located within the study area, stormflow from the mainstem and multiple tributaries support the establishment of these wetlands. It will likely be difficult to avoid impacts to a considerable portion of Whitehall Creek and its surrounding wetlands within the study area, due to their proximity parallel to US 50/301.

A notable location within this section of the study area is the large SHA mitigation site located within the interchanges with St. Margarets Road, on the south side of US 50/301. Historic and published data indicate this area traversed by the mainstem of Whitehall Creek, with scattered PEM wetlands within the loop ramps. SHA created a series of grass swales with check dams, and a wet pond with a riprap outlet ditch. Whitehall Creek has become impounded in the interchange area west of St. Margarets Road, with areas of persistent emergent vegetation during the growing season, but open water throughout winter months. It is surrounded by PEM and PSS wetlands, and the waterway mainstem is piped under the road to the eastern interchange area, where a large PFO with scattered PEM wetlands and a PUB system is present. This PUB is not connected to the stream, but part of the larger wetland system.

Just south of the eastbound entrance ramp from St. Margaret's Road to US 50/301, the waterway flows southeast and is again surrounded by PFO wetlands. Three intermittent tributaries from the east feed into the mainstem within the study area, and just beyond the study limit is where the 100-year FEMA floodplain and tidal limits are present.

Meredith Creek and Mezick Pond

Meredith Creek and associated field delineated wetlands and waterways, and large systems located south of State Park Road are illustrated on **Appendix A** mapping sheets 9 - 12, and described in **Appendix B**, pages 3 - 6. Resources delineated in this section of the study area are identified with a "MeC" identifier. A headwater channel of Meredith Creek begins within the study area north of US 50/301, between Yorktown Road and Log Inn Road, and just south of US 50/301 and north of Skidmore Drive, respectively. This waterway has a 100-year FEMA floodplain within the study area and like with the Whitehall Creek's headwater tributaries within the study area, field delineations have classified these portions of waterway as nontidal intermittent waters, with hydrology supported by surrounding nontidal wetlands. The channel is piped south under US 50/301 and Skidmore Drive and becomes tidally influenced within the vegetated area immediately the south of the roadways. Almost the entire length of Meredith Creek in this area is flanked by wetlands, and as with the waterway designations, wetlands have also been classified as nontidal wetlands north of US 50/301 and Skidmore Drive, and tidal to the south of these roads.

South of State Park Road, a sizable portion of the study area consists of open water systems and wetlands. West of US 50/301 and east of Meredith Creek (MeC_WUS2), hydrology to and from wetlands and streams is split between flowing west towards Meredith Creek and Moss Pond, and eventually to the Chesapeake Bay, or south towards a large manmade lake on MDTA property (called Westinghouse Bay), which is immediately bordering the Chesapeake Bay but does not have an apparent inflow hydrologic connection. This system is classified as estuarine per wetland resource agencies. Estuarine emergent wetlands border much of this lake, with PFO typically just beyond. East of US 50/301, most surface flow is directed toward Mezick Pond and flanking wetlands, which is located within Sandy Point State Park, with hydrology directly connecting to the Chesapeake Bay. The area is largely influenced by the tides and floodplain, and therefore mostly estuarine systems exist.

Chesapeake Bay

The Chesapeake Bay is illustrated on **Appendix A** mapping sheets 11b – 13. The boundary of the waterway was captured through aerial photography; no formal survey of the Chesapeake Bay mean high waterline or mean low waterline was completed. The western shoreline of the Chesapeake Bay forms the limits of the delineation study area in Anne Arundel County. South of the Bay Bridge, the shoreline of the Chesapeake Bay is largely hardened with revetment and retaining walls along MDTA property and private property. Farther south, to the limits of the study area is a cove-like area identified as Moss Pond, with a largely forested natural shoreline. North of the Bay Bridge is Sandy Point State Park beach area.

The study area for field delineations of wetlands and waterways in Queen Anne's County begins just west of the landward connection of the Bay Bridge travel lanes and the eastern shoreline of the Chesapeake Bay. Between the eastbound and westbound travel lanes, just prior to the bridge connection landside, is a large estuarine ponded area, connected to the Chesapeake Bay by culvert/pipe. Common reed emergent wetlands form a fringe around this open water. The shoreline south of the bridge has a small relatively unvegetated beach area and portions of hardened shoreline bordering a marina and private businesses. The landscape in this area and

east (south of US 50/301) has been continually changed over the last 25 years, from development within and surrounding the marina and the Bay Bridge Airport. Shoreline north of the bridge is partially structured and has a small unvegetated beach area. Small linear nontidal wetland roadside swales and low-lying areas, consisting mostly of common reed, broadleaf cattail (*Typha latifolia*) and narrow-leaved cattail (*Typha angustifolia*) are located along US 50/301 and MD 8.

Thompson Creek and Cox Creek

For field delineation purposes, the first section of the Queen Anne's County study area has been identified as the Kent Island section, labeled as "KI" on associated attachments. This section extends east to the Kent Narrows. Three 8-digit watersheds; Kent Island Bay, Eastern Bay, and the Lower Chester River, form this section, moving from west to east, respectively. The KI section of the study area, described below, can be found on **Appendix A** mapping sheets 13 - 21. No major waterways are present within the Kent Island Bay watershed.

Within the Eastern Bay Watershed, major waterways draining from the north to the south, include Thompson Creek and Cox Creek. These locations within the study area can be found on **Appendix A** mapping sheets 15 and 16, and described in **Appendix B**, page 7. Thompson Creek (KI_WUS2) crosses under US 50/301 just east of MD 8 and is classified as a perennial Use I waterway. North of the roadway the system is nontidal and bordered by palustrine nontidal forested wetlands. South of the roadway, although still classified within the full study area limits as a Use I system by the MDE, a tidal influence is evident, and it is bordered on either side by estuarine emergent wetlands. The 1972 Tidal Wetland Boundary extends to the immediate south side of the roadway.

Cox Creek (KI_WUS3) is a Use II tidal system within the study area, both north and south of US 50/301. This is a wide system, approximately 575 feet wide north of the roadway and 1,650 feet wide south of the roadway. Although the 100-year FEMA floodplain is associated with this waterway both north and south of the road, there were no wetlands identified to the north immediately adjacent to the waterway. Large areas of estuarine common reed wetland are located along the western bank on the south side of the road.

Macum Creek and Piney Creek

The Lower Chester River Watershed is located largely north of US 50/301, extending just south of the roadway around the headwaters of Piney Creek and paralleling MD 18. Within this watershed are two main tributaries of the Chester River, Macum Creek (KI_WUS7) and Piney Creek (KI_WUS4). These locations within the study area can be found on **Appendix A** mapping sheets 18-20, and described in **Appendix B**, page 7. Macum Creek is a Use II tidal waterway located north of US 50/301 and north of Piney Creek Road. A 100-year FEMA floodplain surrounds two tributaries of this creek, both with estuarine fringe mostly common reed wetlands on either side of the channels. Immediately east of Macum Creek is an impounded nontidal perennial open water system, with no clear connection to the Chester River. This waterway meanders in and out of the study limits and connects under White's Heritage Lane to a PUB system, also with no connection to adjacent tidal tributaries.

Piney Creek is a Use II tidal waterway located east of this area and beginning south as far as Route 18, draining north. Large common reed estuarine wetlands are located north of US 50/301 on either side of Piney Creek, and common reed estuarine and PFO wetlands border the west side of Piney Creek headwaters, south of US 50/301.

Kent Island Narrows

The Kent Island Narrows (KI_WUS5) under US 50/301, connects the Chester River to the north within the Lower Chester River Watershed and Prospect Bay to the south within the Kent Narrows Watershed. This waterway is illustrated on **Appendix A** mapping sheet 21, and described in **Appendix B**, page 8. This waterway has a mostly hardened shoreline within the study area, with significant development and piers/docks along the water's edge. The watersheds are split largely parallel along US 50/301 until influenced by Winchester Creek to the east. For delineations east of the Kent Island Narrows, resources are identified with a "PB" to denote the Prospect Bay vicinity.

Muddy Creek and Marshy Creek

Muddy Creek (PB_WUS4) is located to the north of US 50/301, within the Lower Chester River Watershed and draining north to the Chester River. South of US 50/301 is Marshy Creek (PB_WUS3) tributary to Prospect Bay and draining south within the Kent Narrows Watershed. Resources associated with these systems are illustrated on **Appendix A** mapping sheets 21-23, and described in **Appendix B**, pages 8 and 9. Estuarine wetlands are located on both sides of the roadway and span almost the entirety of this "PB" section within the study area and beyond, denoted by open-ended wetland on delineation mapping. Common reed is the dominant vegetation present throughout this area, and a significant portion of wetlands are too saturated and/or inundated to traverse on foot. There is a boardwalk paralleling the north side of US 50/301, spanning over tidal areas of Muddy Creek. Although not accessible, and therefore approximated, locations of palustrine forested wetlands are identified adjacent to the boardwalk, scattered within the emergent tidal areas.

Jackson Creek and Winchester Creek

Continuing east, the two main waterways that the study area drains to are Jackson Creek and Winchester Creek, both tidal tributaries to the Chester River, within the Lower Chester River Watershed. These resources are identified as "WC" to denote the Winchester Creek portion of the project and are illustrated on **Appendix A** mapping sheets 24 - 26, and described in **Appendix B**, pages 9 and 10. Jackson Creek (WC_WUS3) is identified as a Use I waterway with its headwaters just north of US 50/301. Surface water drainage is received under Beach Harbor Drive from the east. The channel is manmade through this area and is surrounded by tidal common reed wetland and residential development until it connects with the larger mainstem of Jackson Creek, beyond study area boundaries.

East of the Chester River Beach Road interchange, Winchester Creek (WC_WUS1) flows north to the Chester River, with headwaters beginning on the south side of US 50/301. The portion of tributary south of US 50/301 is flanked by tidal common reed wetland, and north of the US 50/301it is a mix of manicured lawns and forest, within residential properties with boat

docks/ramps in the water. Another finger of Winchester Creek is located to the east and beginning on the north side of US 50/301. This system is flanked by tidal common reed estuarine wetlands to the west of the channel and palustrine forested wetland to the east. Not connected to Winchester Creek is a large common reed wetland located south of US 50/301, just west of commercial properties and the fire department. A large, ponded area with no apparent connection to other waters is located east of this wetland along Hess Road.

Wesley Creek and Wye River

Wesley Creek is a tributary of the Chester River, located north of US 50/301 and within the Lower Chester River Watershed. Resources identified within this watershed that drain towards the Chester River are illustrated on **Appendix A** mapping sheets 27 - 29, and described in **Appendix B**, pages 10 and 11. Wesley Creek resources are identified with a "Wal" indicator (Wal_WUS1). Wesley Creek is identified within the study area as a Use I both tidal and nontidal waterway. Extending beyond the study limits, it is a tidal system and is surrounded by tidal emergent wetland. This appears consistent with the mapped 1972 Tidal Wetland Boundary. Headwaters of Wesley Creek begin south of US 50/301 and are piped under the roadway to the north. This area is nontidal, with nontidal common reed wetlands immediately surrounding the stream, and a narrow nontidal PFO wetland fringe around the emergent area. Two large tidal common reed wetlands are located on either side of Blackbeard Road, just east of Wesley Creek.

Moving east, much of US 50/301 is bordered on both sides by nontidal palustrine wetlands, including PFO and PEM systems. Some are large expanses of well-established forest, largely west of the US 50 westbound ramp onto US 50/301. Additional systems located between MD 18 and eastbound US 50/301 are a mix of scattered PFO wetlands and several linear emergent wetlands that have formed in open-canopy areas. This area has been largely disturbed through the years, with extensive tree clearing for anticipated development, which has not yet occurred.

Resources draining to the Wye River and within the Wye River Watershed are identified with "Wye illustrated on **Appendix A** mapping sheets 29 and 30, and described in **Appendix B** table, pages 11 and 12. An unnamed tributary, headwaters of the Wye River, extends to the southeast corner of the intersection of MD 18 and US 50, just west of the shopping outlets. Surface waters here have been classified as intermittent, surrounded by PFO wetland. Additional linear drainage feature PFO and PEM wetlands are located near both the north and south entrances to the outlets. These features are located at the limits of the project study area.

3.3 Wetland Function and Value Assessment

A wetland function and value assessment were conducted for all wetlands measuring greater than 0.5 acre within the study area, in accordance with the *Highway Methodology Workbook Supplement: Wetland Functions and Values, A Descriptive Approach* (USACE New England District 1999). This assessment includes 13 functions and values, which are evaluated individually during field investigations. **Table 3** provides a summary of the identified functions and values for listed wetlands and identifies which are principal functions. Principal functions provide "special value to society, from a local, regional, and/or national perspective" (USACE New England District, 1999).

Table 3: Functions and Values

WETLAND NUMBER	GROUNDWATER RECHARGE/ DISCHARGE	FLOODFLOW ALTERATION	FISH & SHELLFISH HABITAT	SEDIMENT/ TOXICANT/ PATHOGEN RETENTION	NUTRIENT REMOVAL/ RETENTION TRANSFORMATION	PRODUCTION EXPORT	SEDIMENT/ SHORELINE STABILIZATION	WILDLIFE HABITAT	RECREATION	UNIQUENESS/ HERITAGE	VISUAL QUALITY/ AESTHETICS
SR_WET 6/7	√	√	•	•	√	•	√	•		•	•
MC_WET 1		•	√	√	•	√		•			
MC_WET 2	√	√		√	√			•			
MC_WET 3	√	√		√	√			√			
WhC_WET 1		√		√	√			√			
WhC_WET 2	•	√		√	√			√			
WhC_WET 6		√	√	√	√						
WhC_WET 7	•	√		√	√		√	•			
WhC_WET 10	•	√		√	√						
WhC_WET 12		√		•	•			√			
WhC_WET 13	•	√	•	√	√	√	•	•		•	
MeC_WET 1	•	√						√			
MeC_WET 3	•	√		•	√	•		√	•		
MeC_WET 4		√		•	•	•					
MeC_WET 7		√		•	•						
MeC_WET 11		√	√	√	√	•	√	√			
MeC_WET 13	√	√		•	√						
MeC_WET 14		√	√	√	√	•	√	√			
MeC_WET 15		√						√			
MeC_WET 18								√			
MeC_WET 19								√			
MeC_WET 20	•	•						√			
MeC_WET 23		√	√	√	√	•	√	√	√		
MeC_WET 26		√	√	√	√	•	√	√			
KI_WET 7B	•	•	√	•	•			•			
KI_WET 9	•	•		•	•			•			
KI_WET 11		•		•	•						
KI_WET 12 &12A	•	•	•	•	√			√			
KI_WET 13		√		•	•			√			
KI_WET 15		√		•	•			•			
KI_WET 19		•			•			√			
KI_WET 26		√		•	•			•			
KI_WET 27		√		•	•			•			
KI_WET 28		•			•			√			

WETLAND NUMBER	GROUNDWATER RECHARGE/ DISCHARGE	FLOODFLOW ALTERATION	FISH & SHELLFISH HABITAT	SEDIMENT/ TOXICANT/ PATHOGEN RETENTION	NUTRIENT REMOVAL/ RETENTION TRANSFORMATION	PRODUCTION EXPORT	SEDIMENT/ SHORELINE STABILIZATION	WILDLIFE HABITAT	RECREATION	UNIQUENESS/ HERITAGE	VISUAL QUALITY/ AESTHETICS
KI_WET 29		√		●	●			√			
KI_WET 30		√		●	●			●			
PB_WET 1		●	√	●	●			●			
PB_WET 2		√		●	●			●			
PB_WET 3		√	●		●			●			
PB_WET 5		●		●	●			√			
PB_WET 6		√		●	●			●			
PB_WET 8		√		●	√			●			
PB_WET 9		√		√	●			●			
PB_WET 11		●			●						
WC_WET 1		√		●	●			●			
WC_WET 6	●	√	●	●	●			●			
WC_WET 7		√		●	√			●			
Wal_WET 2		√	●	√	●			√			
Wal_WET 8	●	●		●	√	√		√	●	●	●
Wal_WET 12		√		●	●			√			
Wal_WET 25		√		●							
Wal_WET 26		√									
Wal_WET 28		√		√							
Wal_WET 29		●		√							
Wal_WET 30		√	●	√	√						
Wal_WET 31		√	●	√	√						
Wye_WET 16	●	√	√	√	√	√	●	√			
Wye_WET 22		√									
Wye_WET 23	●	√	●	●	●	●	●	√			
Wye_WET 24		√		√				√			

● References the wetlands potential suitability for identified function/value. √ References the principal functions.

Education/Scientific value and Threatened/Endangered species habitat function/value were removed from this table because no wetlands indicated this potential.

Selection of which functions and values are considered principal is a subjective process and determined by wetland professionals.

Functions of flood-flow alteration, sediment/toxicant/pathogen retention, nutrient removal/ retention transformation, and wildlife habitat, were the most identified functions and values within the study area. Functions of recreation, uniqueness/heritage, and visual quality/aesthetics were the least commonly occurring. None of the wetlands identified provided potential suitability for education. This is likely due to the wetlands occurring within road right-of-way and not providing safe access. Additionally, field teams did not identify any threatened or endangered species during investigations, however no specific species surveys were conducted and consultation with USFWS, MDNR and NOAA Fisheries Division will be completed, as required by the Endangered Species Act (1973), during NEPA and the later permitting processes.

Summary

Detailed information for the delineation of Waters of the U.S. and Waters of the State, including wetlands, conducted for the Bay Crossing Study are illustrated and described in appendices. Results were largely as expected, with much of the westernmost portion of the study area including resources within nontidal stream valley areas. With increasing proximity to the Chesapeake Bay, as we move eastward through the project study area, and an increase in floodplain and saltwater influence, there is a greater proportion of estuarine systems present. The lower elevations of the Eastern Shore experience a continued saltwater influence, and substantially more tidal systems are present than on the western shore of the Chesapeake Bay. As the project extends east beyond the Chesapeake Bay and the elevation increases towards the study area eastern limits, forests remain affected by the higher water tables, however there is less of a tidal influence and palustrine wetland dominate.

Wetland and waterways have been delineated based on a compilation of published data, field verification of resource defining criteria, and best professional judgement, and have not been reviewed or evaluated by any regulatory or resource agency.

4 REFERENCES

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APPENDIX A RESOURCE MAPPING

SR_WET1 (PEM)

SR_WET 2 (PEM)

SR_WET 3 (E2)

SR_WUS1 (E1)

SR_WET 2 (PEM)

SEVERN RIVER

CROUCHS POND

1

2

2a

2b

Map Key

Chesapeake Bay

- Upland Sample Data Point
- Wetland Sample Data Point
- Open-Ended Resource Boundary
- Culverted Resource - Known Size
- SHA Recorded SWM Facilities
- 2023 Waterway Field Delineation
- National Wetlands Inventory
- 2023 Wetland Field Delineation
- Property Boundaries
- Delineation Study Area
- FEMA 100-Year Floodplain
- Culverted Resource - Estimated Size

N

US Feet

0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

2b

2

3

1

MC_WUS 4 (R4)

MC_WET 3 (PFO)

SR_WUS 5 (R4)

SR_WET 7 (PEM)

SR_WET 6 (PUB)

2a

Map Key

Chesapeake Bay

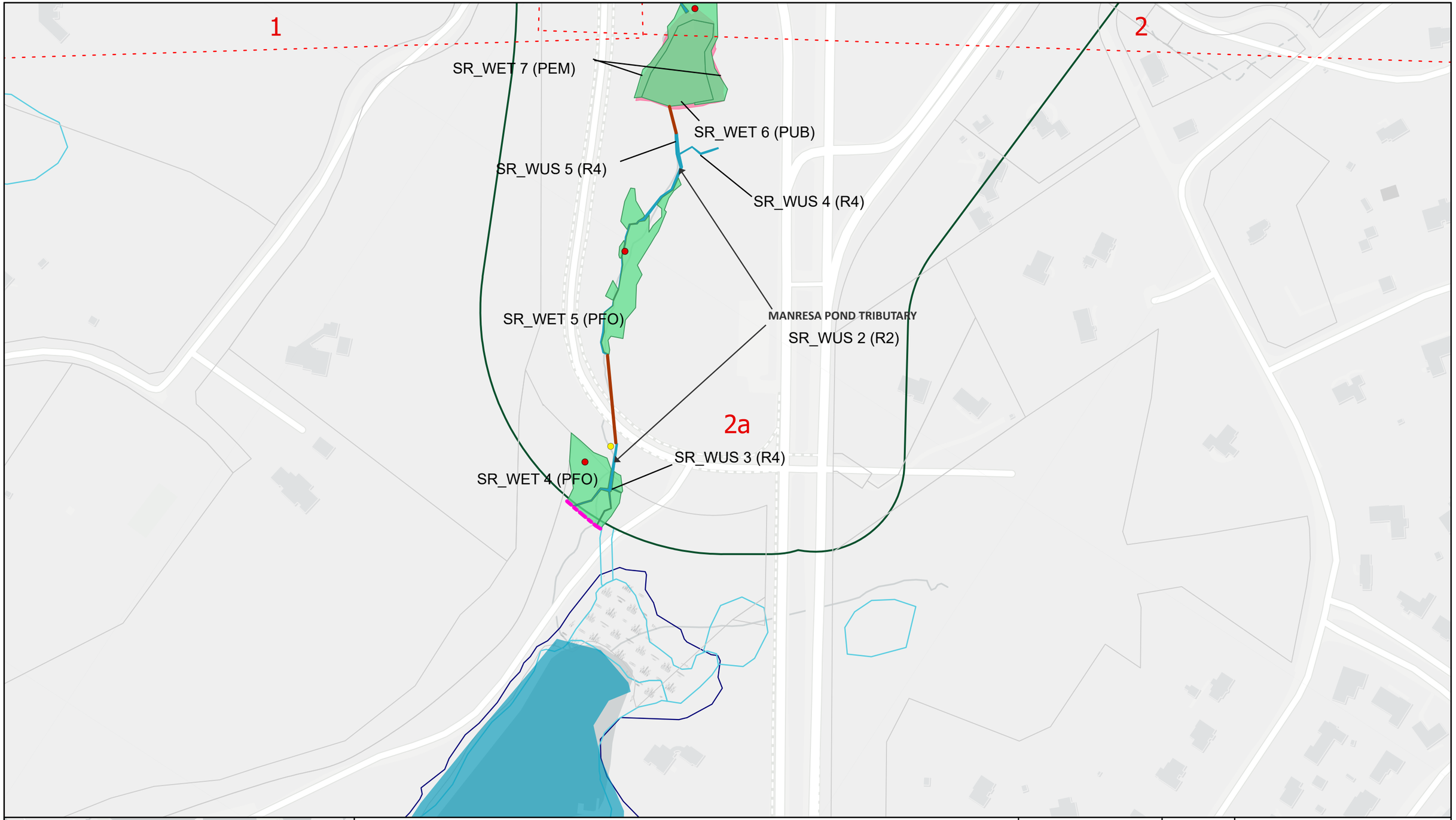
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- Wetland Sample Data Point
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- Culverted Resource - Estimated Size

0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation



Map Key

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US Feet
0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

2b

NO FIELD DELINEATED FEATURES ON THIS SHEET

1

2

Map Key

Chesapeake Bay

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- 2023 Wetland Field Delineation
- Property Boundaries
- Delineation Study Area
- FEMA 100-Year Floodplain
- Culverted Resource - Estimated Size

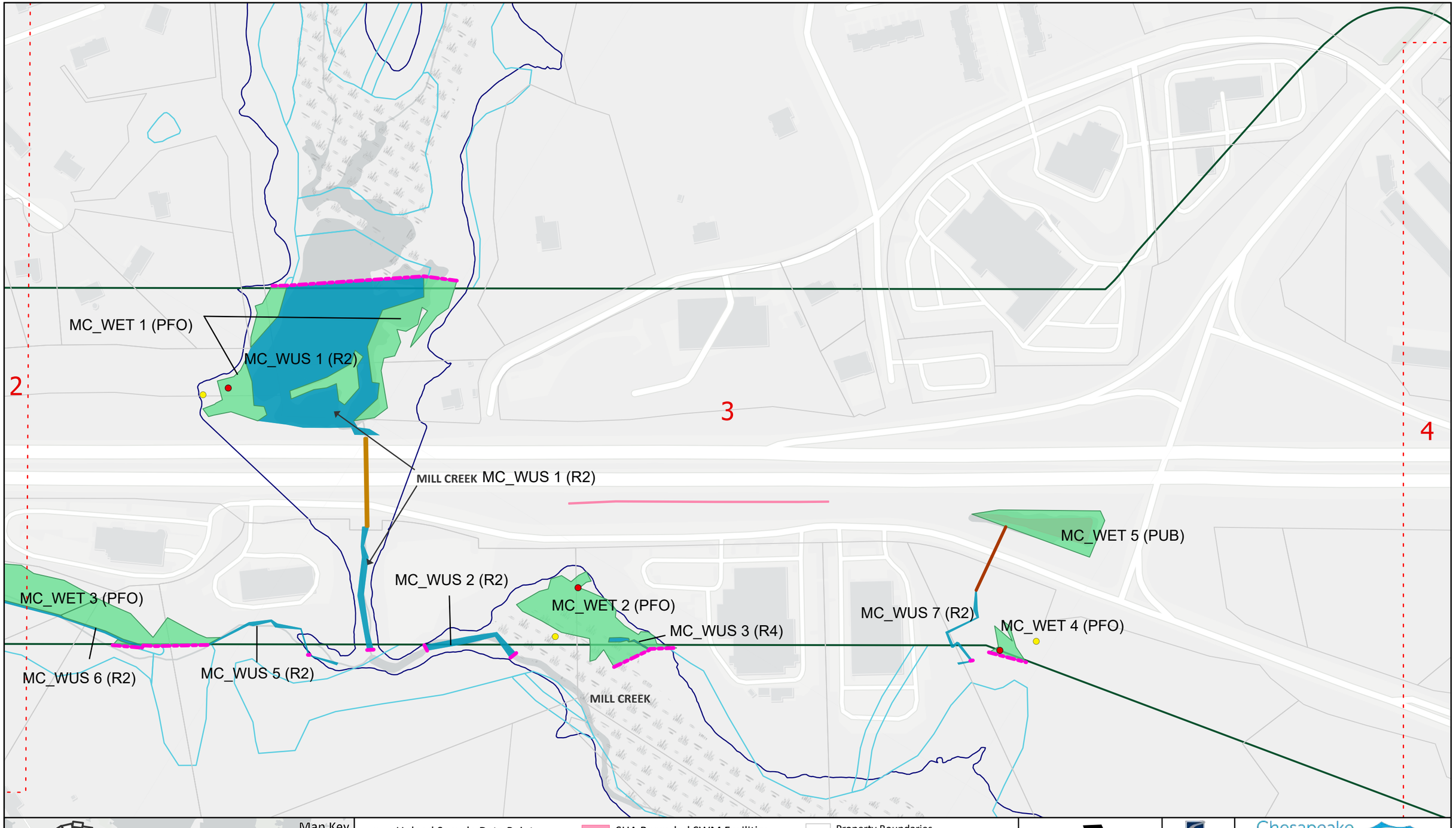
US Feet

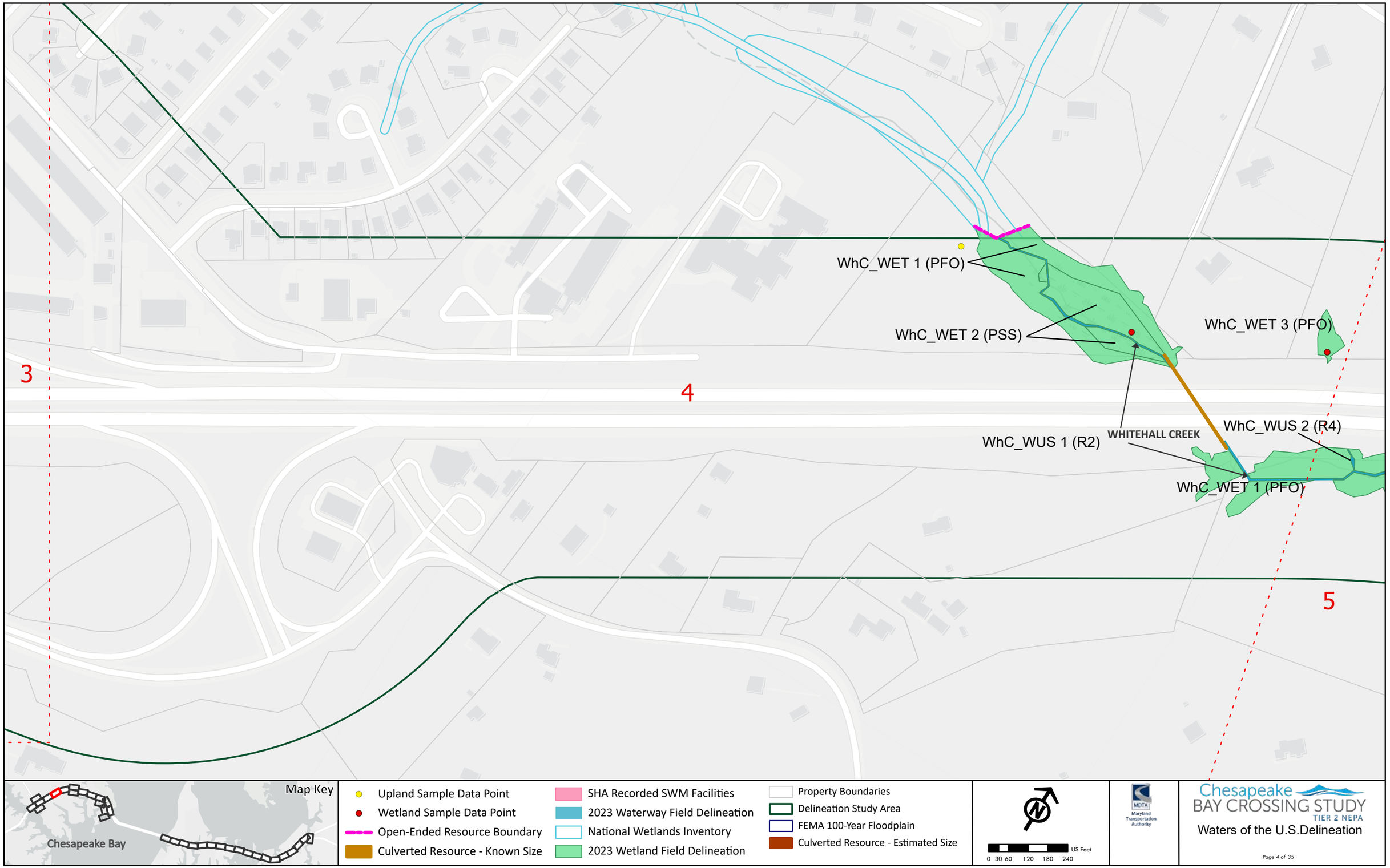
0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation


MC_WET 1 (PFO)
MC_WUS 1 (R2)
2
3
4
MILL CREEK MC_WUS 1 (R2)
MC_WET 5 (PUB)
MC_WET 3 (PFO)
MC_WUS 2 (R2)
MC_WET 2 (PFO)
MC_WUS 3 (R4)
MC_WUS 7 (R2)
MC_WET 4 (PFO)
MC_WUS 6 (R2)
MC_WUS 5 (R2)
MILL CREEK
Map Key
Chesapeake Bay
Upland Sample Data Point
Wetland Sample Data Point
Open-Ended Resource Boundary
Culverted Resource - Known Size
SHA Recorded SWM Facilities
2023 Waterway Field Delineation
National Wetlands Inventory
2023 Wetland Field Delineation
Property Boundaries
Delineation Study Area
FEMA 100-Year Floodplain
Culverted Resource - Estimated Size
US Feet
0 30 60 120 180 240
MDTA
Maryland Transportation Authority
Chesapeake BAY CROSSING STUDY
TIER 2 NEPA
Waters of the U.S.Delineation


WhC_WET 1 (PFO)
WhC_WET 2 (PSS)
WhC_WET 3 (PFO)
WHITEHALL CREEK
WhC_WUS 1 (R2)
WhC_WUS 2 (R4)
WhC_WET 1 (PFO)
3
4
5
Map Key
Chesapeake Bay
Upland Sample Data Point
Wetland Sample Data Point
Open-Ended Resource Boundary
Culverted Resource - Known Size
SHA Recorded SWM Facilities
2023 Waterway Field Delineation
National Wetlands Inventory
2023 Wetland Field Delineation
Property Boundaries
Delineation Study Area
FEMA 100-Year Floodplain
Culverted Resource - Estimated Size
US Feet
0 30 60 120 180 240
MDTA
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Chesapeake BAY CROSSING STUDY
TIER 2 NEPA
Waters of the U.S.Delineation
Page 4 of 35

WhC_WUS 3 (R2)

WhC_WUS 1 (R2)

WhC_WET 1 (PFO)

WhC_WUS 4 (R2)

WhC_WUS 2 (R4)

WHITEHALL CREEK

WHITEHALL CREEK

WhC_WUS 1 (R2)

WhC_WUS 1 (R2)

WhC_WET 1 (PFO)

WhC_WET 1 (PFO)

5

4

6b

6a

Map Key

Chesapeake Bay

Upland Sample Data Point

Wetland Sample Data Point

Open-Ended Resource Boundary

Culverted Resource - Known Size

SHA Recorded SWM Facilities

2023 Waterway Field Delineation

National Wetlands Inventory

2023 Wetland Field Delineation

Property Boundaries

Delineation Study Area

FEMA 100-Year Floodplain

Culverted Resource - Estimated Size

N

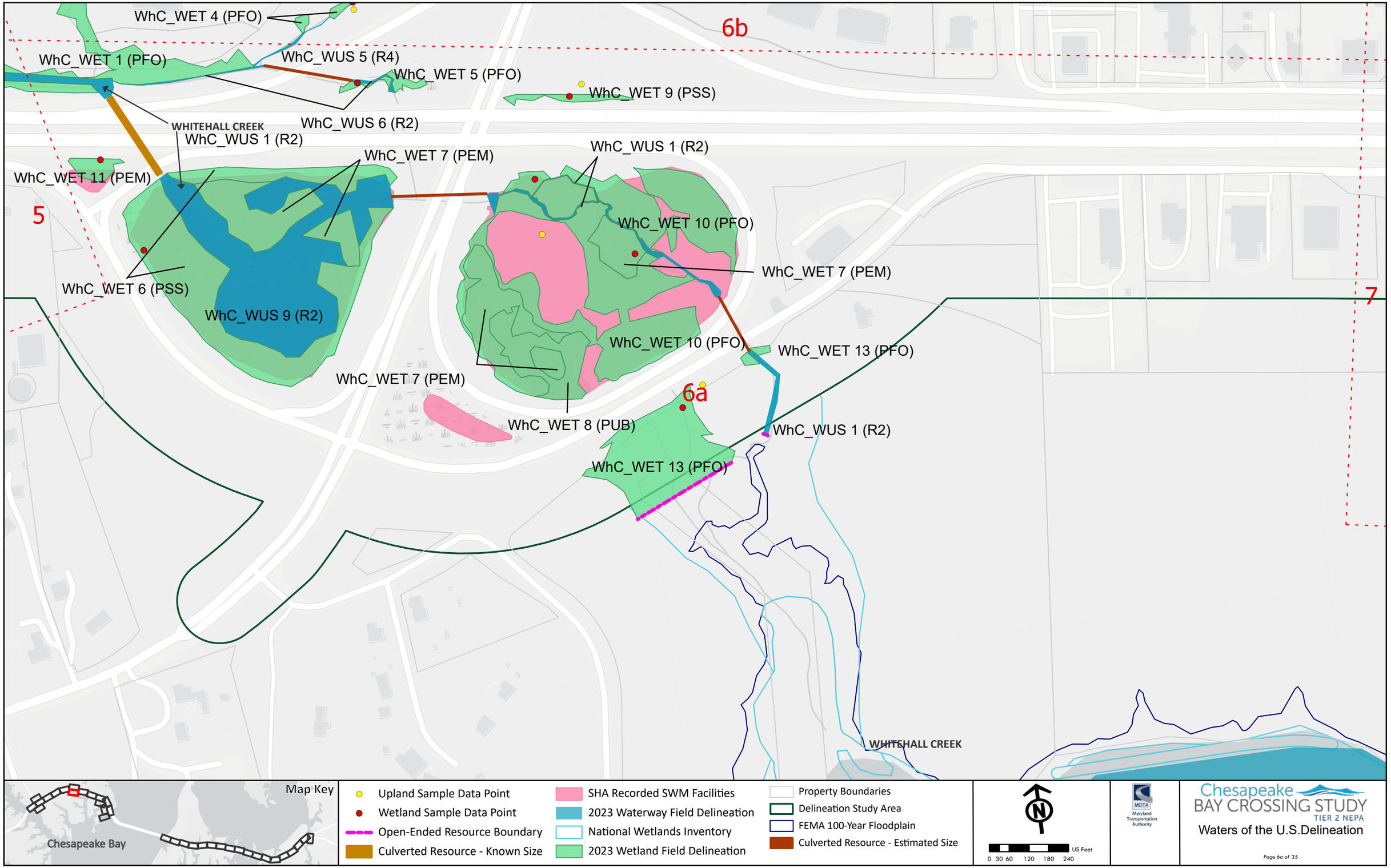
US Feet

0 30 60 120 180 240

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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation



Map Key

Chesapeake Bay

- Upland Sample Data Point
- Wetland Sample Data Point
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- Delineation Study Area
- FEMA 100-Year Floodplain
- Culverted Resource - Estimated Size

N

0 30 60 120 180 240 US Feet

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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

6b

7

6a

5

WhC_WET 1 (PFO)

WhC_WET 4 (PFO)

WhC_WUS 5 (R4)

Map Key

Chesapeake Bay

Upland Sample Data Point
Wetland Sample Data Point
Open-Ended Resource Boundary
Culverted Resource - Known Size

SHA Recorded SWM Facilities
2023 Waterway Field Delineation
National Wetlands Inventory
2023 Wetland Field Delineation

Property Boundaries
Delineation Study Area
FEMA 100-Year Floodplain
Culverted Resource - Estimated Size

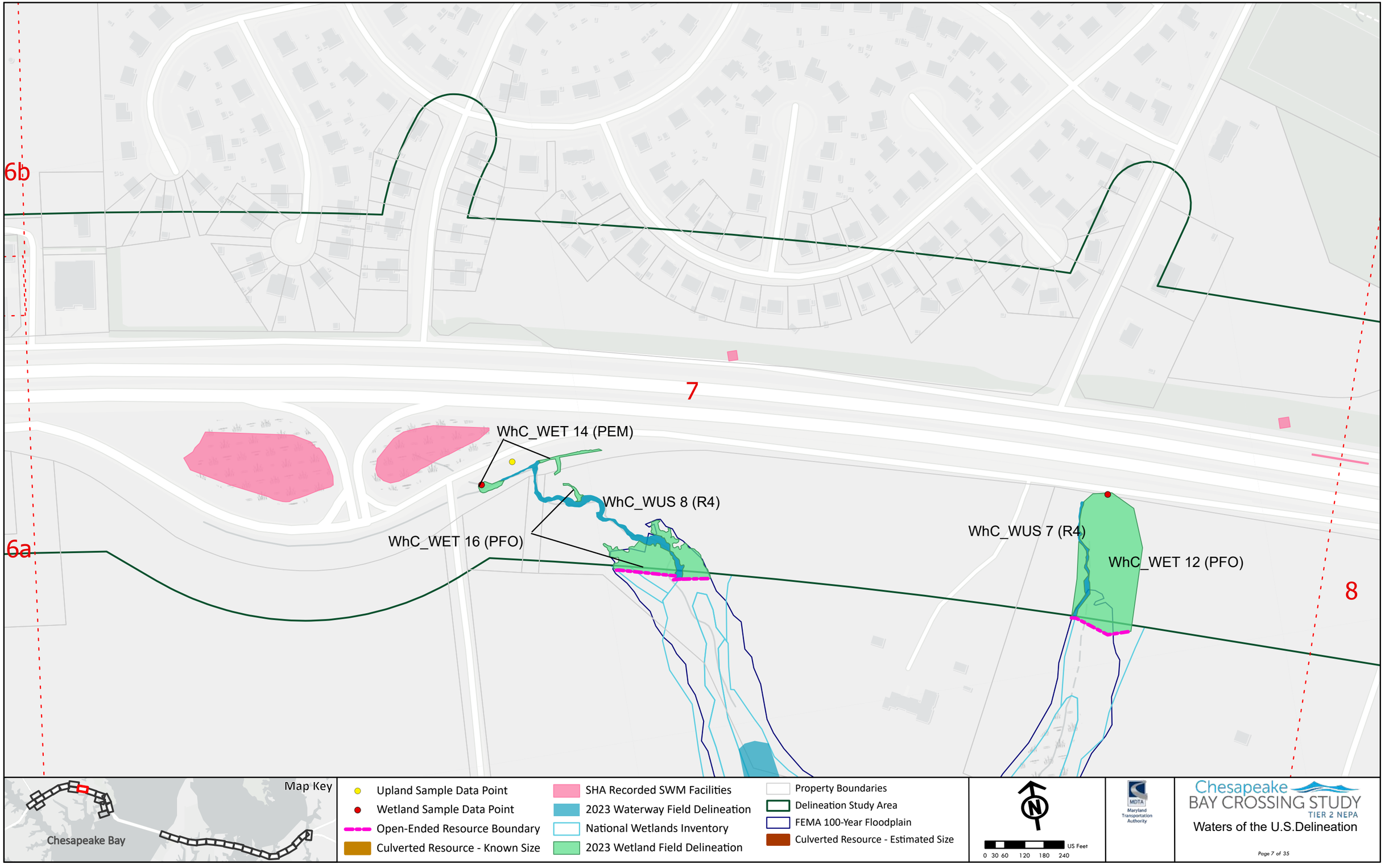
N

0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation


6b
7
WhC_WET 14 (PEM)
WhC_WUS 8 (R4)
WhC_WET 16 (PFO)
6a
WhC_WUS 7 (R4)
WhC_WET 12 (PFO)
8
Map Key
Chesapeake Bay
Upland Sample Data Point
Wetland Sample Data Point
Open-Ended Resource Boundary
Culverted Resource - Known Size
SHA Recorded SWM Facilities
2023 Waterway Field Delineation
National Wetlands Inventory
2023 Wetland Field Delineation
Property Boundaries
Delineation Study Area
FEMA 100-Year Floodplain
Culverted Resource - Estimated Size
N
US Feet
0 30 60 120 180 240
MDTA
Maryland Transportation Authority
Chesapeake BAY CROSSING STUDY
TIER 2 NEPA
Waters of the U.S.Delineation
Page 7 of 35

7

8

9

WhC_WUS 10 (R4)

WhC_WET 15 (PUB)

Map Key

Chesapeake Bay

- Upland Sample Data Point
- Wetland Sample Data Point
- Open-Ended Resource Boundary
- Culverted Resource - Known Size
- SHA Recorded SWM Facilities
- 2023 Waterway Field Delineation
- National Wetlands Inventory
- 2023 Wetland Field Delineation
- Property Boundaries
- Delineation Study Area
- FEMA 100-Year Floodplain
- Culverted Resource - Estimated Size

N

0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

MeC_WET 1 (PFO)
MeC_WUS 1 (R4)
MeC_WET 2 (PEM)
MeC_WET 3 (PFO)
MeC_WUS 7 (R4)
MeC_WUS 1 (R4)
MeC_WET 4 (PFO)
8
MeC_WET 11 (E2)
MeC_WET 10 (E2)
MeC_WET 13 (PFO)
9
MeC_WUS 6 (R4)
10b
MeC_WET 12 (E2)
MeC_WET 11 (E2)
MeC_WUS 5 (R2)
MeC_WET 13 (PFO)
MeC_WET 12 (E2)
MeC_WUS 2 (E1)
MeC_WET 12 (E2)
MeC_WET 11 (E2)
MeC_WET 7 (PFO)
MeC_WET 11 (E2)
MEREDITH CREEK
MeC_WET 34 (PFO)
MeC_WET 9 (PEM)
10a

Map Key
Chesapeake Bay

- Upland Sample Data Point
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- Open-Ended Resource Boundary
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- 2023 Wetland Field Delineation
- Property Boundaries
- Delineation Study Area
- FEMA 100-Year Floodplain
- Culverted Resource - Estimated Size

N
0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

MeC_WUS 3 (E1)
MeC_WUS 2 (E1)
MeC_WUS 4 (R4)
MeC_WET 11 (E2)
9
MeC_WET 34 (PFO)
MeC_WET 9 (PEM)
10b
MeC_WET 7 (PFO)
MeC_WET 33 (PEM)
MeC_WET 17 (PSS)
MeC_WET 18 (PFO)
MeC_WET 33 (PEM)
10a
MeC_WET 19 (PEM)
MEREDITH CREEK
MeC_WET 14 (E2)
11a
MeC_WET 15 (PFO)

Map Key
Chesapeake Bay

- Upland Sample Data Point
- Wetland Sample Data Point
- Open-Ended Resource Boundary
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- FEMA 100-Year Floodplain
- Culverted Resource - Estimated Size

N
0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

MeC_WET 29 (PFO)
MeC_WET 24 (PFO)
MeC_WET 27 (PFO)
MeC_WUS14 (R4)
MeC_WET 25 (PFO)
MeC_WET 6 (PFO)
MeC_WUS 11 (R4)
MeC_WUS 10 (R4)
MeC_WET 5 (PFO)
MeC_WUS 12 (E1)
MEZICK POND
10b
MeC_WET 23 (E2)
MeC_WET 23 (E2)
11b
MeC_WET 4 (PFO)
9
MeC_WET 8 (PEM)
MeC_WET 7 (PFO)
MeC_WET 7 (PFO)
MeC_WET 7 (PFO)
10a
MeC_WET 17 (PSS)
11a
MeC_WET 14 (E2)
MeC_WUS 9 (R4)
MeC_WUS 8 (R4)
MeC_WET 16 (PEM)
MeC_WUS 15 (E1)

Map Key
Chesapeake Bay

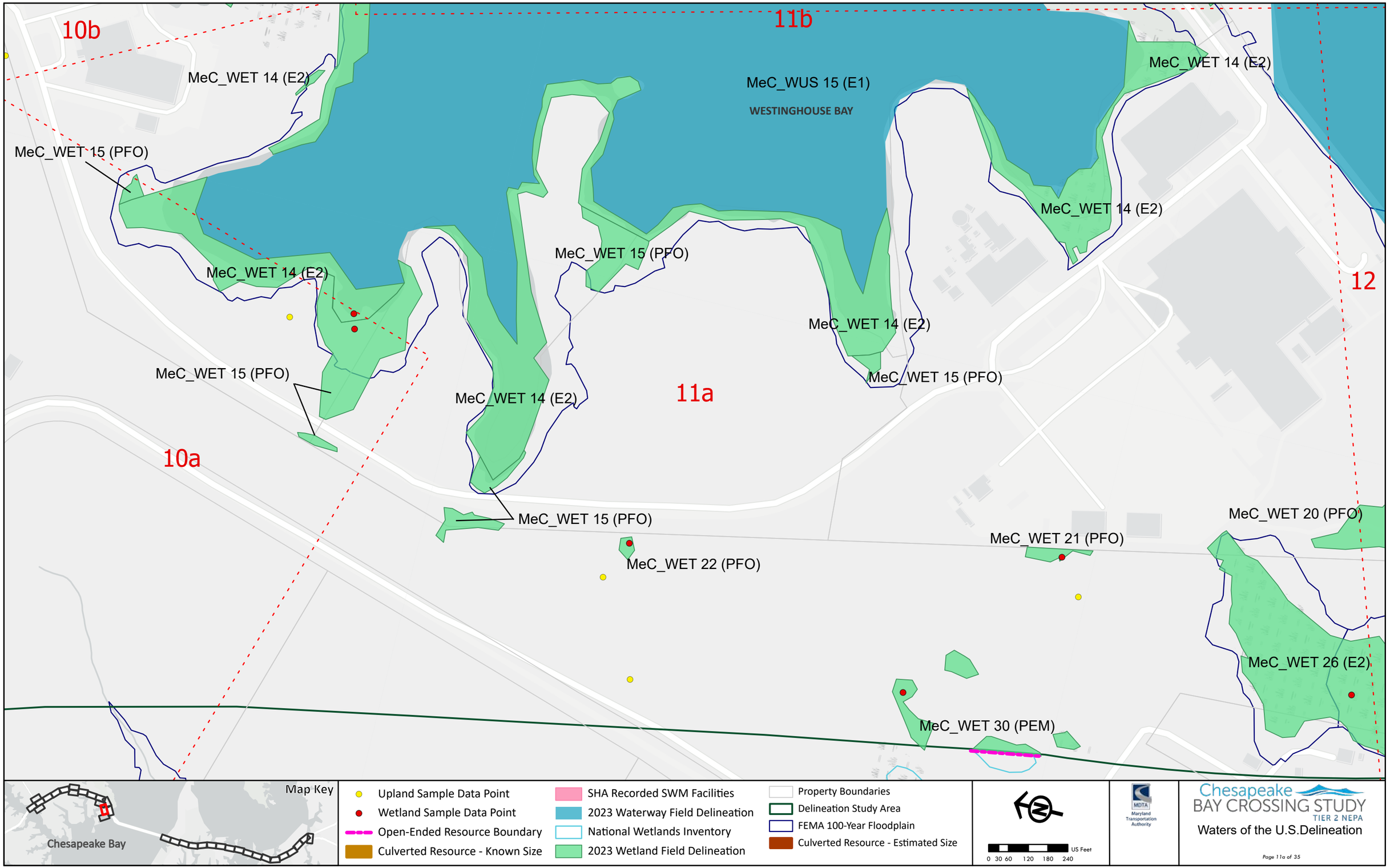
Upland Sample Data Point
Wetland Sample Data Point
Open-Ended Resource Boundary
Culverted Resource - Known Size
SHA Recorded SWM Facilities
2023 Waterway Field Delineation
National Wetlands Inventory
2023 Wetland Field Delineation
Property Boundaries
Delineation Study Area
FEMA 100-Year Floodplain
Culverted Resource - Estimated Size

US Feet
0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation


10b
11b
12
11a
10a
MeC_WET 14 (E2)
MeC_WUS 15 (E1)
WESTINGHOUSE BAY
MeC_WET 14 (E2)
MeC_WET 15 (PFO)
MeC_WET 14 (E2)
MeC_WET 15 (PFO)
MeC_WET 14 (E2)
MeC_WET 14 (E2)
MeC_WET 15 (PFO)
MeC_WET 15 (PFO)
MeC_WET 14 (E2)
MeC_WET 15 (PFO)
MeC_WET 22 (PFO)
MeC_WET 21 (PFO)
MeC_WET 20 (PFO)
MeC_WET 26 (E2)
MeC_WET 30 (PEM)
Map Key
Chesapeake Bay
Upland Sample Data Point
Wetland Sample Data Point
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0 30 60 120 180 240
US Feet
MDTA
Maryland Transportation Authority
Chesapeake BAY CROSSING STUDY
TIER 2 NEPA
Waters of the U.S.Delineation
Page 11a of 35

MEZICK POND

MeC_WUS 12 (E1)

MeC_WET 23 (E2)

11b

KI_WUS 1 (E1)

CHESAPEAKE BAY

MeC_WET 32 (PEM)

10b

MeC_WUS 13 (R4)

MeC_WET 15 (PFO)

MeC_WET 14 (E2)

MeC_WET 14 (E2)

MeC_WUS 15 (E1)

WESTINGHOUSE BAY

MeC_WET 31 (E2)

11a

12

Map Key

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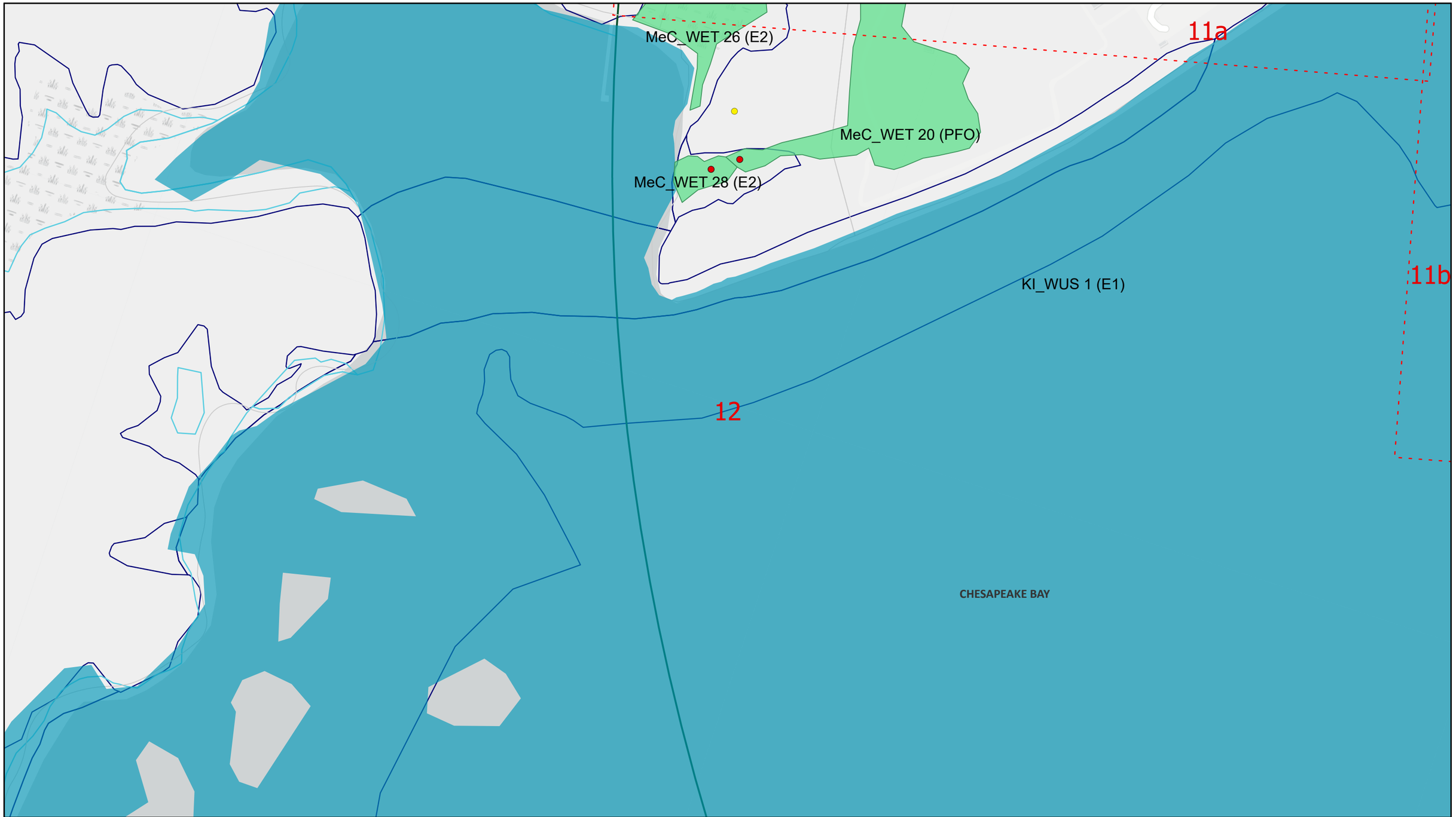
US Feet

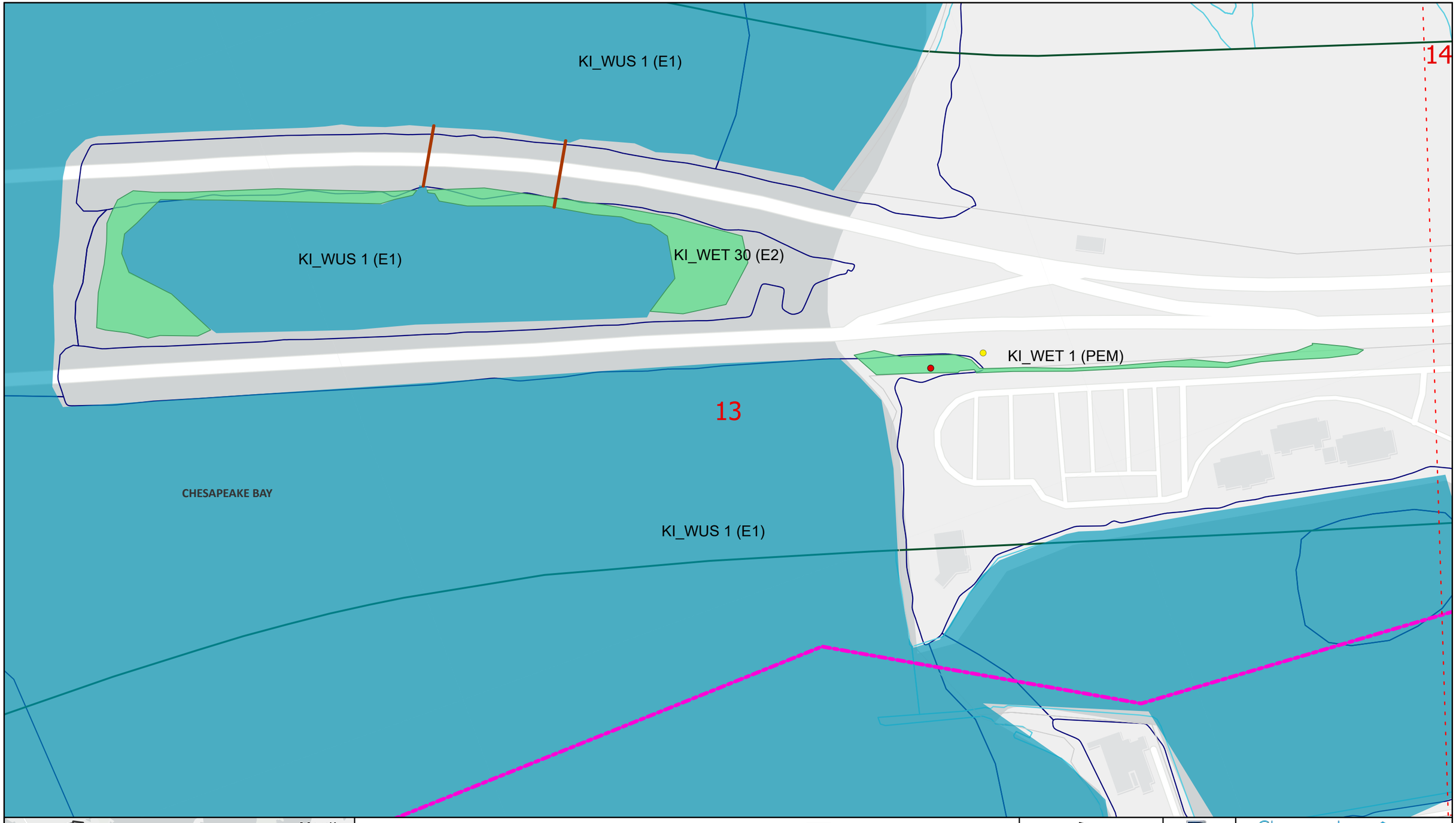
0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation


MeC_WET 26 (E2)
MeC_WET 20 (PFO)
MeC_WET 28 (E2)
11a
11b
KI_WUS 1 (E1)
12
CHESAPEAKE BAY
Map Key
Chesapeake Bay
Upland Sample Data Point
Wetland Sample Data Point
Open-Ended Resource Boundary
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N
US Feet
0 30 60 120 180 240
MDTA
Maryland Transportation Authority
Chesapeake BAY CROSSING STUDY
TIER 2 NEPA
Waters of the U.S.Delineation
Page 12 of 35



Map Key

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- Wetland Sample Data Point
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N

US Feet

0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

13

KI_WET 28 (PEM)

STUDY AREA EXTENDS OFF MAP PAGE, NO RESOURCES PRESENT

15

KI_WET 2 (PEM)

14

KI_WET 6 (PFO)

KI_WET 4 (PEM)

KI_WET 5 (PEM)

KI_WET 3 (PFO)

Map Key

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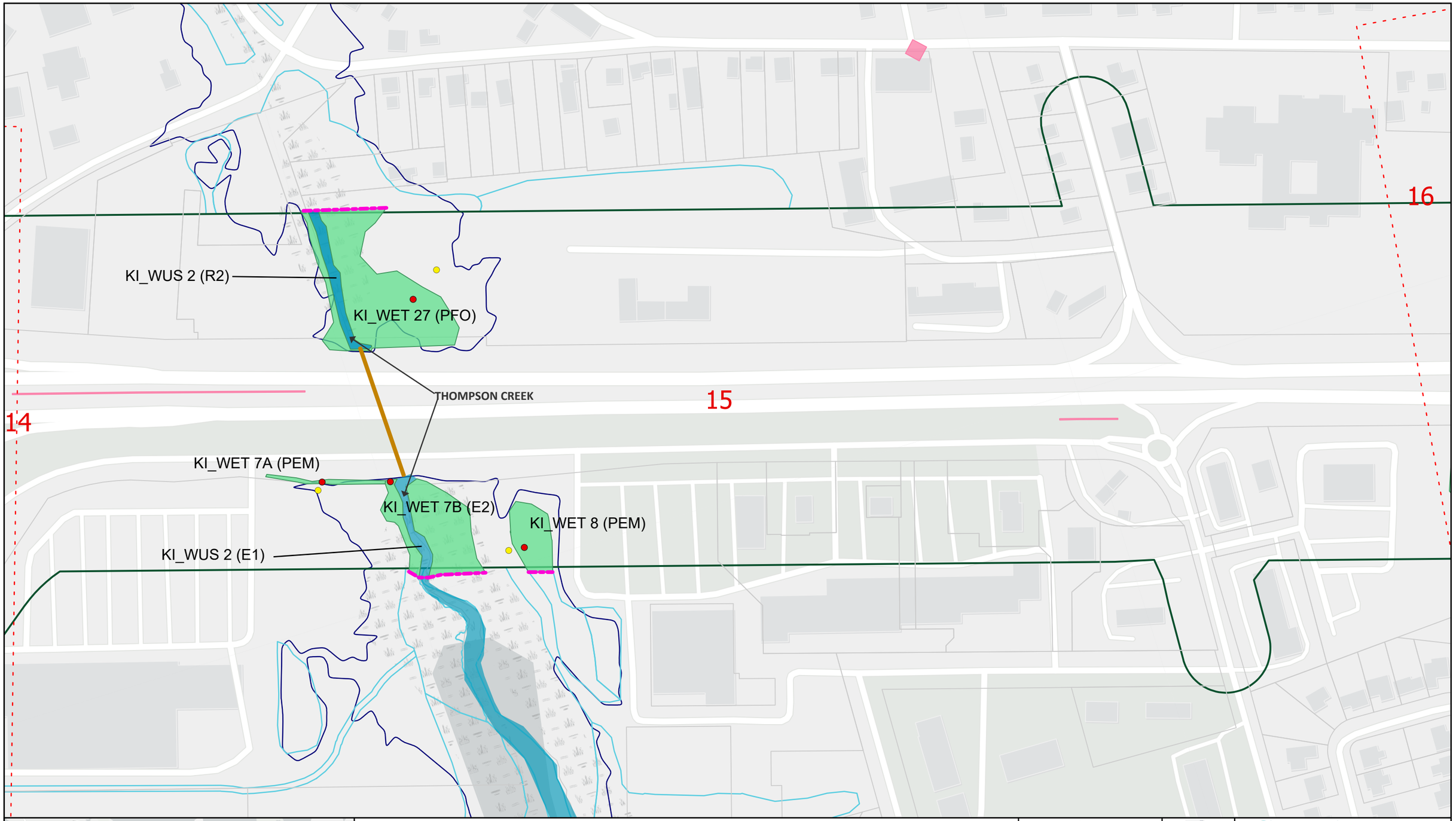
N

0 30 60 120 180 240 US Feet

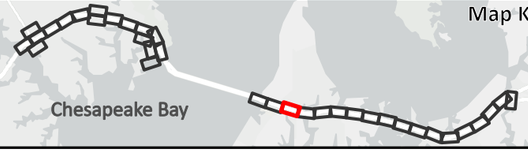
MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation



Map Key



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N

0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

15

17

16

KI_WET 26 (E2)

COX CREEK

KI_WUS 3 (E1)

KI_WET 9 (PFO)

KI_WUS 3 (E1)

KI_WET 29 (E2)

KI_WUS 3 (E1)

COX CREEK

Map Key

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N

US Feet

0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

KI_WET 25 (PUB)

16

17

18

Map Key

Chesapeake Bay

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N

0 30 60 120 180 240 US Feet

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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

KI_WUS 7 (E1)
KI_WET 23 (E2)
KI_WET 24 (E2)
KI_WUS 7 (R2)
MACUM CREEK
KI_WUS 6 (E1)
KI_WET 22 (E2)
KI_WET 21 (E2)
18
19
17

Map Key
Chesapeake Bay

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N
US Feet
0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

KI_WET 21 (E2)

KI_WUS 9 (R2)

KI_WET 10 (PSS)

18

19

20

Map Key

Chesapeake Bay

Upland Sample Data Point

Wetland Sample Data Point

Open-Ended Resource Boundary

Culverted Resource - Known Size

SHA Recorded SWM Facilities

2023 Waterway Field Delineation

National Wetlands Inventory

2023 Wetland Field Delineation

Property Boundaries

Delineation Study Area

FEMA 100-Year Floodplain

Culverted Resource - Estimated Size

N

US Feet

0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

KI_WET 20 (PEM)

KI_WET 19 (E2)

KI_WUS 4 (E1)

KI_WET 18 (E2)

KI_WET 16 (E2)

KI_WET 17 (PUB)

PINEY CEEK

20

KI_WET 12A (PFO)

KI_WET 11 (PFO)

19

KI_WET 12 (E2)

KI_WET 12A (PFO)

KI_WUS 4 (E1)

KI_WET 15 (E2)

KI_WET 14 (PEM)

KI_WET 13 (E2)

21

Map Key

Chesapeake Bay

Upland Sample Data Point

Wetland Sample Data Point

Open-Ended Resource Boundary

Culverted Resource - Known Size

SHA Recorded SWM Facilities

2023 Waterway Field Delineation

National Wetlands Inventory

2023 Wetland Field Delineation

Property Boundaries

Delineation Study Area

FEMA 100-Year Floodplain

Culverted Resource - Estimated Size

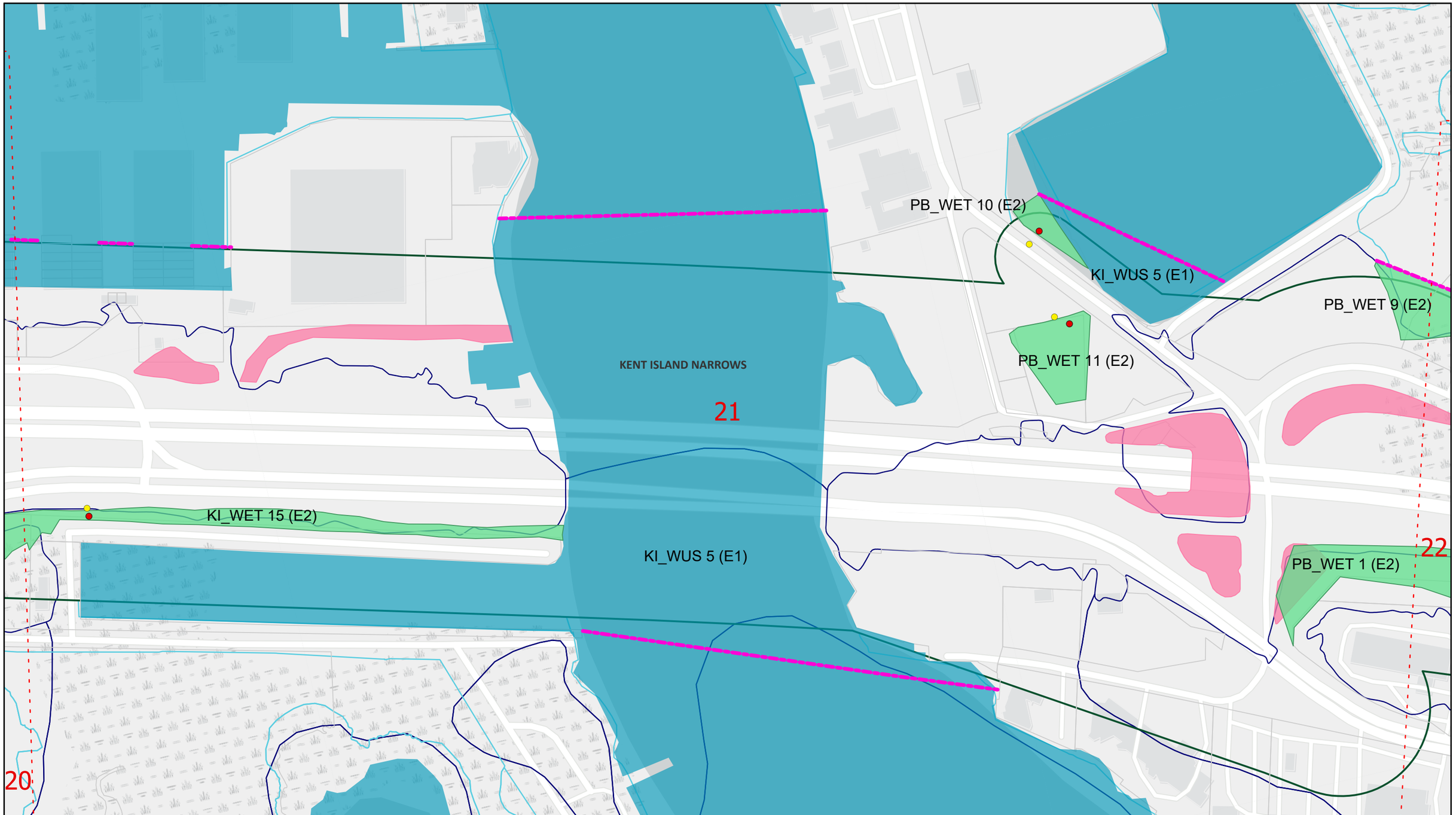
N

0 30 60 120 180 240 US Feet

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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation



Map Key

Chesapeake Bay

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N

0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

MUDDY CREEK

MUDDY CREEK

PB_WET 8A (PFO)

PB_WUS 4 (E1)

PB_WET 9 (E2)

PB_WET 8 (E2)

21

22

23

PB_WET 1 (E2)

PB_WUS 1 (E1)

PB_WET 1 (E2)

PB_WET 5 (E2)

PB_WUS 2 (E1)

Map Key

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N

US Feet

0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

PB_WET 8A (PFO)

PB_WET 8 (E2)

PB_WET 3 (PSS)

PB_WET 4 (PUB)

PB_WET 7 (PEM)

23

PB_WET 5 (E2)

PB_WET 2 (E2)

PB_WUS 3 (E1)

22

PB_WET 6 (E2)

PB_WUS 3 (E1)

24

MARSHY CREEK

Map Key

Chesapeake Bay

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N

0 30 60 120 180 240 US Feet

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Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

WC_WET 4 (PFO)

25

JACKSON CREEK

WC_ WUS 3 (R2)

WC_WUS 3 (E1)

WC_WET 6 (E2)

WC_WET 5 (PEM)

WC_WUS 3 (R2)

24

23

Map Key

Chesapeake Bay

- Upland Sample Data Point
- Wetland Sample Data Point
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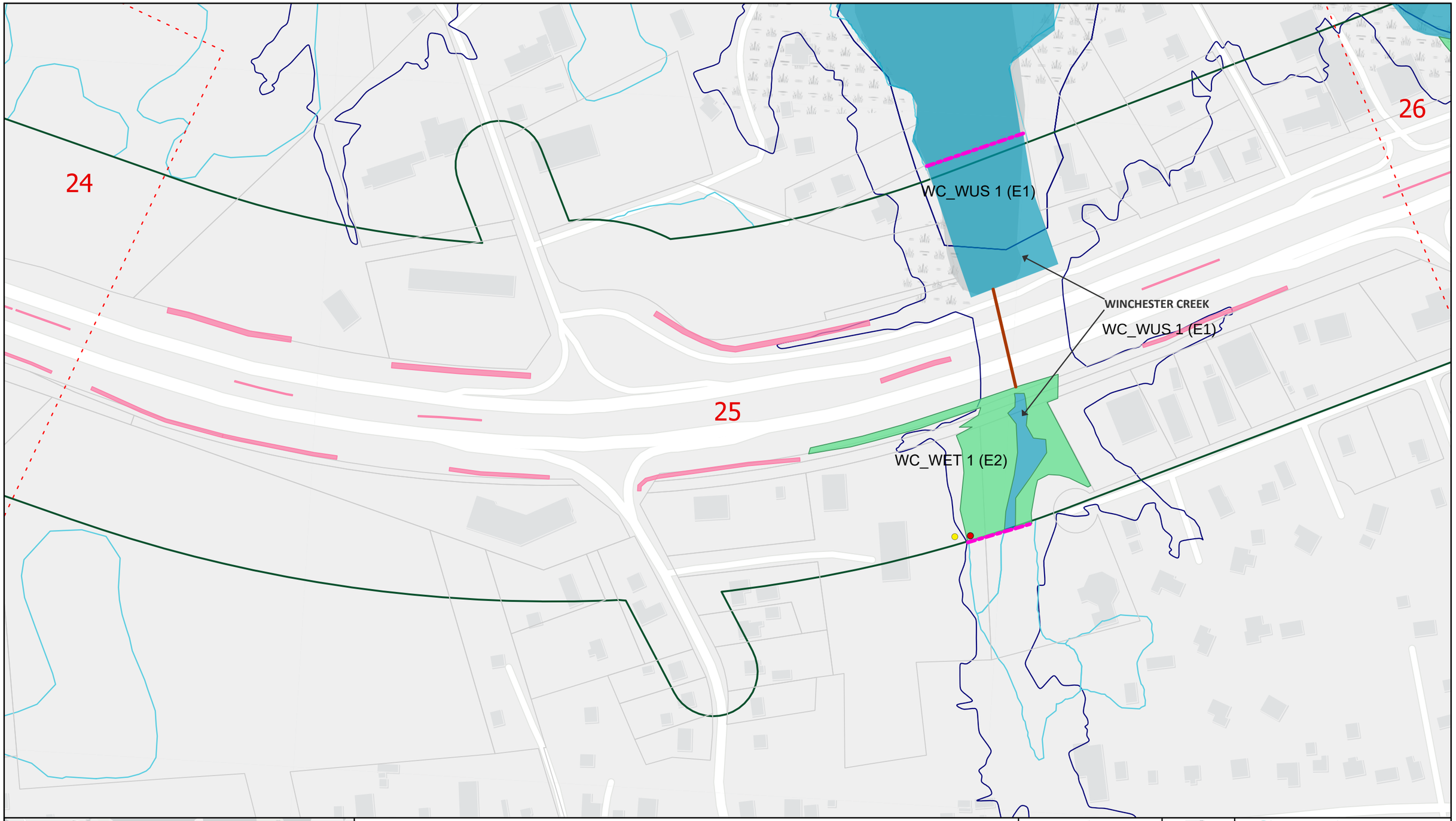
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0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation



Map Key

Chesapeake Bay

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N

0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

WINCHESTER CREEK

WC_WUS 1 (E1)

WC_WET 2 (E2)

WC_WET 3 (PFO)

25

26

27

WC_WET 7 (PEM)

WC_WUS 2 (PUB)

Map Key

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US Feet

0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

WESLEY CREEK

26

28

27

Wal_WUS 4 (R4)

Wal_WET30A (E2)

Wal_WET 30 (E2)

Wal_WET 31 (E2)

Wal_WUS 1A (E1)

Wal_WUS 1A (R4)

Wal_WUS 1 (R4)

Wal_WET 1 (PFO)

Wal_WET 3 (PFO)

Wal_WET 2 (PEM)

Map Key

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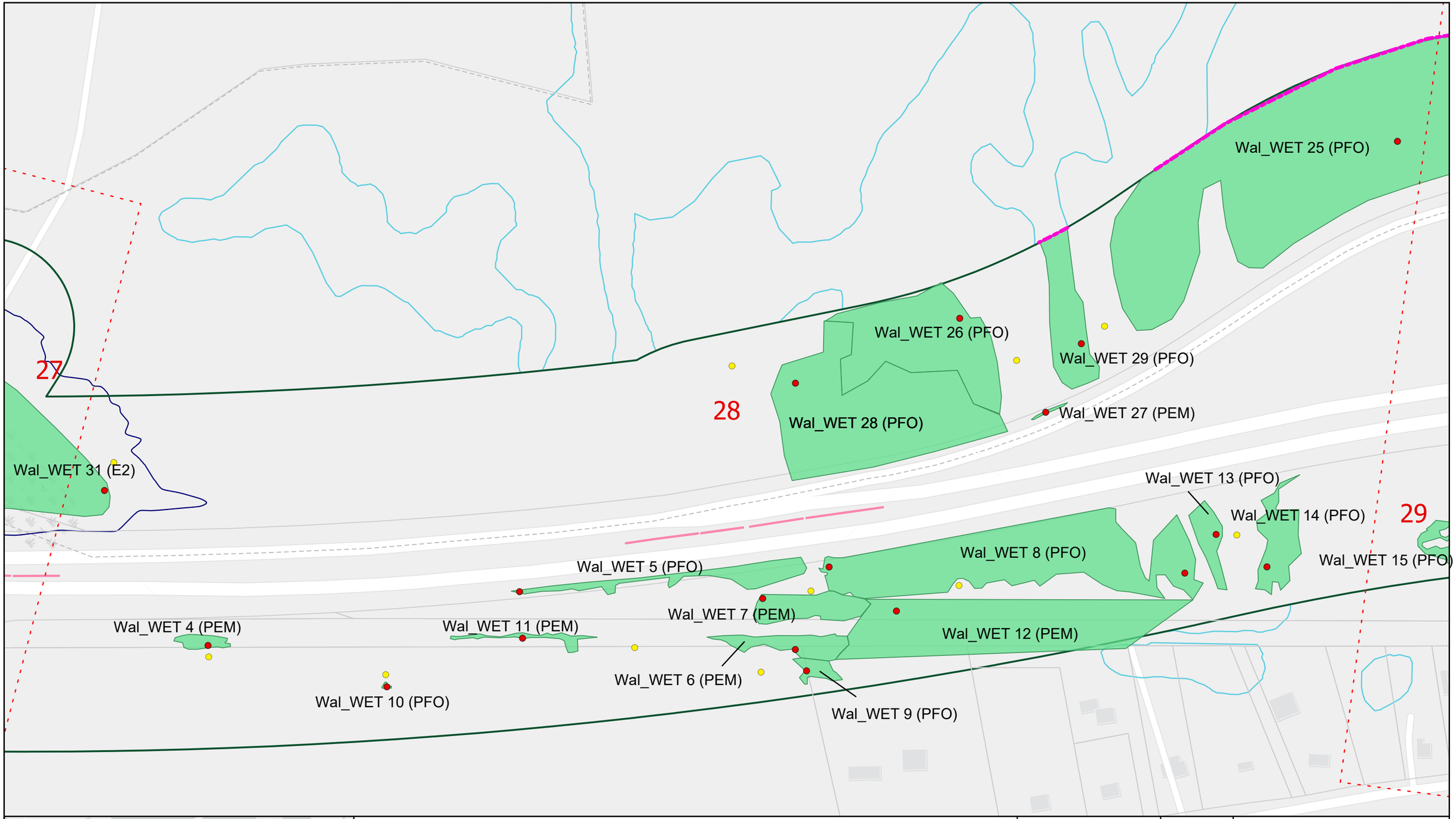
US Feet

0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation


Wal_WET 25 (PFO)
Wal_WET 26 (PFO)
Wal_WET 29 (PFO)
Wal_WET 27 (PEM)
Wal_WET 28 (PFO)
27
28
29
Wal_WET 31 (E2)
Wal_WET 13 (PFO)
Wal_WET 14 (PFO)
Wal_WET 15 (PFO)
Wal_WET 8 (PFO)
Wal_WET 5 (PFO)
Wal_WET 7 (PEM)
Wal_WET 12 (PEM)
Wal_WET 4 (PEM)
Wal_WET 11 (PEM)
Wal_WET 6 (PEM)
Wal_WET 10 (PFO)
Wal_WET 9 (PFO)
Map Key
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US Feet
0 30 60 120 180 240
MDTA
Maryland Transportation Authority
Chesapeake BAY CROSSING STUDY
TIER 2 NEPA
Waters of the U.S.Delineation
Page 28 of 35

Wal_WET 25 (PFO)

Wye_WET 24 (PFO)

Wye_WET 23 (PFO)

29

28

Wal_WET 15 (PFO)

Wye_WET 22 (PEM)

Wye_WUS 3 (R4)

30

Wye_WET 16 (PFO)

Map Key

Chesapeake Bay

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0 30 60 120 180 240 US Feet

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

29

30

Wye_WET 22 (PEM)

Wye_WET 18 (PEM)

Wye_WET 17 (PFO)

Wye_WET 20 (PEM)

Wye_WET 21 (PFO)

Wye_WET 19 (PFO)

Map Key

Chesapeake Bay

Upland Sample Data Point
Wetland Sample Data Point
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N

US Feet
0 30 60 120 180 240

MDTA Maryland Transportation Authority

Chesapeake BAY CROSSING STUDY TIER 2 NEPA

Waters of the U.S.Delineation

APPENDIX B RESOURCE TABLE

WETLAND LOCATION MAP SHEET NO.	COUNTY	SYSTEM LABEL	SAMPLE PLOT COORDINATES		WATERWAY OR WETLAND CLASSIFICATION	DELINEATION ACCURACY: FIELD DELINEATION VS APPROXIMATION	DELINEATION PARAMETERS: SOIL SAMPLE (ROUTINE) VS NO SOIL SAMPLE (MODIFIED)	WETLAND SAMPLE POINT HYDROLOGY CRITERIA	WETLAND SAMPLE POINT DOMINANT VEGETATION	WETLAND SAMPLE POINT HYDRIC SOIL (FIELD VERIFIED HYDRIC SOIL INDICATOR VS PUBLISHED DATA)	WETLAND FUNCTION & VALUE ASSESSMENT	DNR 8-DIGIT WATERSHED	WETLAND AREAS		STREAM USE DESIGNATION	WATERWAY AREAS			COMMENTS
			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
1	Anne Arundel	SR_WUS1	39.00896738°N	-76.50141197°W	E1UB2	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	II	N	77,620	199	Severn River
1	Anne Arundel	SR_WET1	39.00949038°N	-76.50220031°W	PEM1C	Field Verified	Modified	•2" Surface Water (A2) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Panicum dichotomiflorum (60%)	Published soil data indicates hydric soils	N	02131002	N	6,232	N/A	N/A	N/A	N/A	
1	Anne Arundel	SR_WET2	39.00944831°N	-76.50156093°W	PEM1C	Field Verified	Routine	•0.5" Surface Water (A1) •2" High Water Table (A2) •Saturated to the surface (A3) •Water-Stained Leaves (B9) •Drainage Patterns (B10) •Geomorphic Position (D2)	•Plantanus occidentalis (10%) •Liriodendron tulipifera (15%) •Acer saccharinum (12%) •Acer saccharinum sapling (5%) •Bambusa sp. (60%)	Field verified •5 cm Mucky Mineral (A7) •Redox Dark Surface (F6) (mostly pvt property, but soil sampled w/in SHA ROW)	N	02131002	Y	18,388	N/A	N/A	N/A	N/A	
1	Anne Arundel	SR_WET3	39.00914641°N	-76.50125608°W	E2EM	Field Verified	Routine	•6" Surface Water (A1) •High Water Table at 0" (A2) •Saturated to the surface (A3) •Sediment Deposits (B2) •Drift Deposits (B3) •FAC-Neutral Test (B5)	•Phragmites australis (98%)	Field sample taken within ROW, which did not meet an indicator however area receives frequent sand inputs (>16" despositon) from Severn River. Did not sample outside ROW, considered hydric based on best professional judgement	N	02131002	Y	6,384	N/A	N/A	N/A	N/A	
2a	Anne Arundel	SR_WUS2	39.00921011°N	-76.5016333°W	R2UB1/2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	3,503	Open: 875 Piped: 198	Manresa Pond Tributary
2a	Anne Arundel	SR_WUS3	39.00931532°N	-76.48959015°W	R4SB4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	50	22	
2a	Anne Arundel	SR_WUS4	39.01135007°N	-76.49046958°W	R4SB3/4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	436	98	
2 & 2a	Anne Arundel	SR_WUS5	39.0122616°N	-76.4913775°W	R4SB4	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	1,758	Open: 279 Piped: 62	Manresa Pond Tributary
2a	Anne Arundel	SR_WET4	39.00935751°N	-76.48991211°W	PFO1E	Field Verified	Modified	•0.5" Surface Water (A1) •High Water Table (A2) •Saturation to the Surface (A3) •Iron Deposits (B5) •Water Stained Leaves (B9) •Drainage Patterns (B10) •Crayfish Burrows (C8)	•Acer rubrum (40%) •Lindera benzoin (50%) •Microstegium vimineum (5%) •Toxicodendron radicans (5%)	Published soil data indicates largely non-hydric soils however considered hydric based on best professional judgement	N	02131002	N	14,058	N/A	N/A	N/A	N/A	
2a	Anne Arundel	SR_WET5	39.01057862°N	-76.49056115°W	PFO1A/B	Field Verified	Routine	•High Water Table at 10" (A2) •Saturation to the Surface (A3) •Saturation (A3) •Iron Deposits (B5) •Drainage Patterns (B10) •Crayfish Burrows (C8) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (15%) •Ulmus Americana (8%) •Lindera benzoin (25%) •Liquidambar styraciflua sapling (10%) •Microstegium vimineum (40%) •Dichanthelium scoparium (25%) •Dichanthelium clandestinum(20%)	Field verified •Depleted Matrix (F3)	N	02131002	Y	17,809	N/A	N/A	N/A	N/A	
2 & 2a	Anne Arundel	SR_WET6	N/A	N/A	PUB	Field Verified	Modified	N/A	N/A	N/A	N/A	02131002	Y	20,451	N/A	N/A	N/A	N/A	SWM Facility with an in-line resource; has the potential to be vernal pool. No datasheet taken. No vegetation within resource during dormant season. Requires determination if it is regulated resource or SWM only.
2 & 2a	Anne Arundel	SR_WET7	38.96567073°N	-76.22396228°W	PEM1B	Field Verified	Routine	•Saturation (A3) •Dry Season Water Table (C2) •Oxidized Rhizospheres along Living Roots (C3) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (15%) •Microstegium vimineum (55%) •Leersia oryzoides (40%)	Field verified •Redox Dark Surface (F6)	Y	02131002	Y	11,521	N/A	N/A	N/A	N/A	Function & Value assessment completed for a combined WET 6 and WET 7. Has potential to be a vernal pool.
2	Anne Arundel	MC_WUS4	39.01642489°N	-76.48493417°W	R4SB4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	3,085	565	Intermittent portion of tributary (flows into WUS6 becoming perennial)
2 & 3	Anne Arundel	MC_WET3	39.01693899°N	-76.48406989°W	PFO1A/B	Field Verified & Approximated	Routine & Modified	•Water-Stained Leaves (B9) •Drainage Patterns (B10) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (10%) •Liquidambar styraciflua (15%) •Platanus occidentalis (10%) •Liquidambar styraciflua sapling (15%) •Impatiens capensis (15%) •Lindera benzoin (8%) •Microstegium vimineum (20%) •Persicaria punctata (20%) •Ampelopsis brevipedunculata (5%) •Vitis sp. (8%)	Field verified •Redox Dark Surface (F6)	Y	02131002	N	86,221	N/A	N/A	N/A	N/A	
3	Anne Arundel	MC_WUS1	39.0191297°N	-76.48246894°W	R2EM2	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	74,737	319	Mill Creek mainstem, north of US 301, Piped portion connects to MC_WUS2
3	Anne Arundel	MC_WUS2	39.01827358°N	-76.48071059°W	R2UB	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	6,309	Open: 315 Piped: 205	Mill Creek mainstem, south of US 50/301
3	Anne Arundel	MC_WUS3	39.01881937°N	-76.47877163°W	R4SB	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	494	79	
3	Anne Arundel	MC_WUS5	39.01770931°N	-76.48130452°W	R2UB2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	1,509	259	tributary to Mill Creek (WUS 6 upstream)
3	Anne Arundel	MC_WUS6	39.0171454°N	-76.48255445°W	R2UB2/3	Field Verified & Approximated	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	2,438	416	tributary to Mill Creek
3	Anne Arundel	MC_WUS7	39.02000231°N	-76.4765213°W	R2UB2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	1,053	Open: 188 Piped:158	Tributary to Mill Creek
3	Anne Arundel	MC_WET1	39.01887903°N	-76.48245953°W	PFO1Fb	Field Verified	Modified	•6" Surface Water (A1) •Iron Deposits (B5) •Water Stained Leaves (B9) •Geomorphic Position (D2)	•Acer rubrum (30%) •Liquidambar styraciflua (20%) •Lindera benzoin (20%) •Similax roundifolia (50%)	Published soil data indicates both hydric and non-hydric soils; considered hydric based on best professional judgement	Y	02131002	N	36,703	N/A	N/A	N/A	N/A	

WETLAND LOCATION MAP SHEET NO.	COUNTY	SYSTEM LABEL	SAMPLE PLOT COORDINATES		WATERWAY OR WETLAND CLASSIFICATION	DELINEATION ACCURACY: FIELD DELINEATION VS APPROXIMATION	DELINEATION PARAMETERS: SOIL SAMPLE (ROUTINE) VS NO SOIL SAMPLE (MODIFIED)	WETLAND SAMPLE POINT HYDROLOGY CRITERIA	WETLAND SAMPLE POINT DOMINANT VEGETATION	WETLAND SAMPLE POINT HYDRIC SOIL (FIELD VERIFIED HYDRIC SOIL INDICATOR VS PUBLISHED DATA)	WETLAND FUNCTION & VALUE ASSESSMENT	DNR 8-DIGIT WATERSHED	WETLAND AREAS		STREAM USE DESIGNATION	WATERWAY AREAS			COMMENTS
			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
3	Anne Arundel	MC_WET2	39.01895823°N	-76.47926653°W	PFO1E	Field Verified	Modified	•Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Iron Deposits (B5) •Water Stained Leaves (B9) •Drainage Patterns (B10) •Geomorphic Position (D2)	•Acer rubrum (90%) •Lindera benzoin (8%) •Persicaria arifolia (20%) •Reynoutria japonica (10%)	Published soil data indicates hydric soils	Y	02131002	N	23,364	N/A	N/A	N/A	N/A	Seep wetland within floodplain. Has potential to be a vernal pool.
3	Anne Arundel	MC_WET4	39.01998857°N	-76.47615484°W	PFO1B	Field Verified	Routine	•0.5" Surface Water (A1) •High Water Table at 10" (A2) •Saturation at 6" (A3) •Water Stained Leaves (B9) •Drainage Patterns (B10)	•Acer rubrum (15%) •Nyssa sylvatica (25%) •Liquidambar styraciflua sapling (15%) •Ilex opaca (2%) •Viburnum dentatum (5%) •Smilax rotundifolia (3%) •Toxicodendron radicans (10%) •Microstegium vimineum (50%)	Field verified •Redox Dark Surface (F6)	N	02131002	N	2,798	N/A	N/A	N/A	N/A	Seep wetland at toe of slope
3	Anne Arundel	MC_WET5	N/A	N/A	PUB	Approximated	Modified	N/A	N/A	N/A	N/A	02131002	Y	16,901	N/A	N/A	N/A	N/A	SWM Pond, entirely fenced; No access to photograph or take sample plot. Published historic topo shows as stream.
4, 5, 6a	Anne Arundel	WhC_WUS1	39.02700947°N	-76.46081313°W	R2UB2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	40,305	Open: 5,935 Piped: 1,048	Whitehall Creek. The waterway is piped under multiple roadways/interchanges
4, 5, 6a, 6b	Anne Arundel	WhC_WET1	39.02706227°N	-76.46033218°W	PFO1E	Field Verified	Modified	•2" Surface Water (A1) •Water Stained Leaves (B9) •Drainage Patterns (B10) •Crayfish Burrows (C8) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (40%) •Carpinus caroliniana (30%) •Lindera benzoin (15%) •Ilex verticulata (10%) •Saururus cernuus (5%) •Osmundastrum cinnamomeum (10%) •Athyrium angustum (5%) •Symplocarpus foetidus (5%) •Microstegium vimineum (10%) •Smilax rotundifolia (10%) •Toxicodendron radicans (5%)	Published data indicates soils are 60% hydric	Y	02131002	N	541,928	N/A	N/A	N/A	N/A	Data represents field sample plot WET 1.1 south of US301. Due to size of wetland, additional field sample plot 1.2 was taken north of US301. These sample locations have similar hydrology, vegetation, and soils.
4	Anne Arundel	WhC_WET2	39.02649319°N	-76.46645958°W	PSS	Field Verified	Modified	•Surface Water (A1) •Saturation to the surface (A3) •Water Stained Leaves (B9) •Drainage Patterns (B10) •Moss Trim Line (B16) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Alnus serrulate (95%) •Impatiens capensis (10%) •Cinna arundinacea (10%) •Solidago gigantea (5%)	Published data indicates soils are partially hydric	Y	02131002	Y	26,521	N/A	N/A	N/A	N/A	Scrub/shrub wetland fringe along Whitehall Creek (WUS 1) in headwaters north of US 50/301
4	Anne Arundel	WhC_WET3	39.02704389°N	-76.46498638°W	PFO1C	Field Verified	Routine	•Saturation to the surface (A3) •Water Marks (B1) •Sparsely Vegetated Concave Surface (B8) •Moss Trim Line (B16) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (80%) •Lindera benzoin (22%) •Cinna arundinacea (18%) •Smilax rotundifolia (3%) •Leersia virginica (28%) •Toxicodendron radicans (2%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	N	02131002	Y	4,238	N/A	N/A	N/A	N/A	Isolated system
4 & 5	Anne Arundel	WhC_WUS2	39.02653462°N	-76.46433395°W	R4SB4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	38,644	52	Tributary to Whitehall Creek
5	Anne Arundel	WhC_WUS3	39.0285065°N	76.4585702°W	R2UB2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	1,580	542	Tributary to Whitehall Creek
5	Anne Arundel	WhC_WUS4	39.0286918°N	76.4552533°W	R2UB2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	384	120	Tributary to Whitehall Creek
6a	Anne Arundel	WhC_WUS5	39.02867692°N	-76.45525363°W	R4SB2/3/4	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	879	120	Tributary to Whitehall Creek
6a	Anne Arundel	WhC_WUS6	39.02849658°N	-76.45856981°W	R2UB1/2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	1,914	Open: 542 Piped: 208	Tributary to Whitehall Creek
6a	Anne Arundel	WhC_WUS9	39.02702232°N	-76.45209662°W	R2EM2	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	101,919	681	Within existing SHA mitigation area. Mainstem of Whitehall Creek (WUS1); impounded area of channel within interchange.
6a & 6b	Anne Arundel	WhC_WET4	39.02799715°N	-76.45033175°W	PFO1B	Field Verified	Routine	•0.5" Surface Water (A1) •High Water Table at 10" (A2) •Saturation to the surface (A3) •Water Stained Leaves (B9) •Drainage Patterns (B10) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (10%) •Salix nigra (40%) •Fraxinus pennsylvanica sapling (3%) •Viburnum dentatum (10%) •Microstegium vimineum (75%) •Toxicodendron radicans (10%)	Field verfied •Redox Dark Surface (F6)	N	02131002	Y	2,390	N/A	N/A	N/A	N/A	
6a	Anne Arundel	WhC_WET5	39.02747676°N	-76.45037492°W	PFO1B	Field Verified	Routine	•1" Surface Water (A1) •High Water Table at 8" (A2) •Saturation to the surface (A3) •Iron Deposits (B5) •Drainage Patterns (B10) •Crayfish Burrows (C8)	•Acer rubrum (25%) •Cornus amomum (10%) •Viburnum dentatum (20%) •Microstegium vimineum (15%) •Persicaria arifolia (8%) •Ampelopsis glandulosa (10%) •Smilax rotundifolia (15%)	Field verfied •Redox Dark Surface (F6)	N	02131002	Y	3,084	N/A	N/A	N/A	N/A	
6a	Anne Arundel	WhC_WET6	39.02657298°N	-76.45230427°W	PSS1F	Field Verified	Routine	•12" Surface Water (A1) •High Water Table to the surface (A2) •Saturation to the surface (A3) •Inundation Visible on Aerial Imagery (B7) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (5%) •Cephalanthus occidentalis (50%) •Boehmeria cylindrica (15%) •Juncus effusus (30%)	Field verified •Depleted Matrix (F3)	Y	02131002	Y	94,457	N/A	N/A	N/A	N/A	Within existing SHA mitigation area
6a	Anne Arundel	WhC_WET7	39.02616354°N	-76.44826047°W	PEM1A/B	Field Verified	Routine	•High Water Table at 6" (A2) •Saturation to the surface (A3) •Drainage Patterns (B10) •Geomorphic Position (D2)	•Acer rubrum (5%) •Microstegium vimineum (90%)	Field verfied •Redox Dark Surface (F6)	Y	02131002	Y	76,840	N/A	N/A	N/A	N/A	Within existing SHA mitigation area. WET7 SF area represents all PEM's within both interchange loops.
6a	Anne Arundel	WhC_WET8	N/A	N/A	PUB	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	Y	20,992	N/A	N/A	N/A	N/A	Within existing SHA SWM mitigation area; No datasheet taken
6a	Anne Arundel	WhC_WET9	39.02722338°N	-76.44864123°W	PSS1A	Field Verified	Routine	•Drainage Patterns (B10) •Oxidized Rhizospheres along Living Roots (C3)	•Fraxinus pennsylvanica sapling (10%) •Salix nigra sapling (20%) •Miscanthus sinensis (5%) •Panicum virgatum (10%) •Solidago canadensis (5%) •Juncus effusus (5%) •Toxicodendron radicans (10%) •Parthenocissus quinquefolia (5%)	Field verified •Depleted Matrix (F3) •Sandy Redox (S5)	N	02131002	Y	3,769	N/A	N/A	N/A	N/A	No surface water connection

WETLAND LOCATION MAP SHEET NO.	COUNTY	SYSTEM LABEL	SAMPLE PLOT COORDINATES		WATERWAY OR WETLAND CLASSIFICATION	DELINEATION ACCURACY: FIELD DELINEATION VS APPROXIMATION	DELINEATION PARAMETERS: SOIL SAMPLE (ROUTINE) VS NO SOIL SAMPLE (MODIFIED)	WETLAND SAMPLE POINT HYDROLOGY CRITERIA	WETLAND SAMPLE POINT DOMINANT VEGETATION	WETLAND SAMPLE POINT HYDRIC SOIL (FIELD VERIFIED HYDRIC SOIL INDICATOR VS PUBLISHED DATA)	WETLAND FUNCTION & VALUE ASSESSMENT	DNR 8-DIGIT WATERSHED	WETLAND AREAS		STREAM USE DESIGNATION	WATERWAY AREAS			COMMENTS
			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
6a	Anne Arundel	WhC_WET10	39.02671961°N	-76.4490097°W	PFO1A/B	Field Verified	Routine	•High Water Table at the surface (A2) •Saturation to 8" (A3) •Drainage Patterns (B10)	•Nyssa sylvatica (10%) •Salix nigra (25%) •Viburnum dentatum (15%) •Acer negundo sapling (5%) •Microstegium vimineum (95%) •Toxicodendron radicans (8%)	Field verfied •Redox Dark Surface (F6)	Y	02131002	Y	127,058	N/A	N/A	N/A	N/A	Within existing SHA mitigation area. WET10 represents all PFO's within area.
6a	Anne Arundel	WhC_WET11	39.02718662°N	-76.45257067°W	PEM1E	Field Verified	Routine	•6" Surface Water (A1) •High Water Table at 7" (A2) •Saturation to surface (A3) •Oxidized Rhizospheres along Living Roots (C3) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Ceratophyllum demersum (85%) •Ludwigia peploides (83%)	Field verified •Depleted Matrix (F3)	N	02131002	Y	4,663	N/A	N/A	N/A	N/A	Has potential to be a vernal pool.
6a	Anne Arundel	WhC_WET13	39.02514073°N	-76.44802331°W	PFO1B	Field Verified	Modified	•Surface Water of 3" in 10% of the plot (A1) •High Water Table to 4" (A2) •Saturation to the surface (A3) •Drainage Patterns (B10) •Oxidized Rhizospheres along Living Roots (C3) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (75%) •Ligustrum sinense (20%) •Lindera benzoin (20%) •Saururus cernuus (80%) •Toxicodendron radicans (10%) •Hedra helix (3%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	Y	02131002	Y	43,058	N/A	N/A	N/A	N/A	
7	Anne Arundel	WhC_WUS7	39.02457581°N	-76.4333269°W	R4SB4/5	Approximated	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	1,858	292	Tributary to Whitehall Creek
7	Anne Arundel	WhC_WUS8	39.0252930°N	-76.4379759°W	R4SB2/4	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	N	6,858	608	Tributary to Whitehall Creek
7	Anne Arundel	WhC_WET12	39.02452185°N	-76.43313561°W	PFO1R	Approximated	Modified	•Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (15%) •Nyssa sylvatica (40%) •Liquidambar styraciflua (5%) •Lindera benzoin (5%) •Liquidambar styraciflua sapling (10%) •Nyssa sylvatica sapling (10%) •Onoclea sensibilis (5%) •Toxicodendron radicans (5%)	Published soil data indicates hydric soils	Y	02131002	N	39,708	N/A	N/A	N/A	N/A	On DNE property, datasheet was completed with view from adjacent roadway
7	Anne Arundel	WhC_WET14	39.01139676°N	-76.4107006°W	PEM1A	Field Verified	Routine	•Saturation to the surface (A3) •High Water Table at 4" (A2) •Oxidized Rhizospheres along Living Roots (C3) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Phragmites australis (100%) •Rosa multiflora (5%) •Lindera benzoin (5%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	N	02131002	Y	2,001	N/A	N/A	N/A	N/A	Has potential to be a vernal pool.
7	Anne Arundel	WhC_WET16	N/A	N/A	PFO	Approximated	Modified	UNK	UNK	UNK	N/A	02131002	N	12,368	N/A	N/A	N/A	N/A	On DNE property, unable to access therefore no datasheet taken. Boundaries approximated based on LiDAR
8	Anne Arundel	WhC_WUS10	39.02325131°N	-76.42830302°W	R4	Approximated	N/A	N/A	N/A	N/A	N/A	02131002	N	N/A	I	N	568	254	Unknown tributary on DNE property, assumed ephemeral immediately south of roadway and becoming intermittent at polygon boundaries, drawn based on contour data; no datasheet was taken
8	Anne Arundel	WhC_WET15	N/A	N/A	PUB	Approximated	N/A	UNK	UNK	UNK	N/A	02131002	N	2,901	N/A	N/A	N/A	N/A	Isolated wetland on a DNE property, boundaries drawn based on contour data; no datasheet was taken.
9	Anne Arundel	MeC_WUS1	39.02148184°N	-76.4186386°W	R4SB4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	1,047	Open: 178.18 Piped: 252	Headwaters of Meredith Creek
9 & 10a	Anne Arundel	MeC_WUS2	39.01992312°N	-76.41790121°W	E1UB3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	II	N	249,562	2,119	Meredith Creek perennial mainstem
9	Anne Arundel	MeC_WUS5	39.02779117°N	-76.450859°W	R2UB1/2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	1,332	Open: 251 Piped: 100	Perennial tributary to Meredith Creek (WUS2)
9	Anne Arundel	MeC_WUS6	39.02762797°N	-76.45184468°W	R4SB4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	564	181	Intermittent tributary to WUS5
9	Anne Arundel	MeC_WUS7	39.01944957°N	-76.41424884°W	R4SB3/4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	54	23	Intermittent tributary to WUS5
9	Anne Arundel	MeC_WET1	39.02214248°N	-76.41864597°W	PFO1E	Field Verified	Modified	•Surface Water (A1) •Water- Stained Leaves (B9) •Drainage Patterns (B10) •Saturation Visible on Aerial Imagery (C9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (40%) •Liquidambar styraciflua (15%) •Liquidambar styraciflua sapling (15%) •Saururus cernuus (50%) •Smilax rotundifolia (10%)	Published soil data indicates hydric soils	Y	02131002	N	23,785	N/A	N/A	N/A	N/A	
9	Anne Arundel	MeC_WET2	39.02158336°N	-76.41872792°W	PEM1E	Field Verified	Modified	•Water-Stained Leaves (B9) •Saturation Visible on Aerial Imagery (C9)	•Persicaria perfoliata (80%)	Published soil data indicates hydric soils	N	02131002	Y	3,307	N/A	N/A	N/A	N/A	
9	Anne Arundel	MeC_WET3	39.01693899°N	-76.48406989°W	PFO1A/C	Field Verified	Routine	•Saturation (A3) •Water-Stained Leaves (B9) •Drainage Patterns (B10) •Dry Season Water Table (C2) •Oxidized Rhizospheres along Living Roots (C3) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (75%) •Liquidambar styraciflua (30%) •Liquidambar styraciflua sapling (20%) •Cinna arundinacea (45%) •Lindera benzoin (15%) •Saururus cernuus (30%) •Smilax rotundifolia (7%) •Vitis vulpina (10%)	Field verified •Depleted Matrix (F3)	Y	02131002	Y	58,440	N/A	N/A	N/A	N/A	No surface water connection
9 & 10b	Anne Arundel	MeC_WET4	39.0183493°N	76.4096918°W	PFO1C/F	Field Verified	Routine	•Surface Water of 6" (A1) •Saturation between 0 - 2" (A3) •Drainage Patterns (B10) •Oxidized Rhizospheres along Living Roots (C3) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Liquidambar styraciflua (15%) •Liquidambar styraciflua sapling (30%) •Morella pensylvanica (10%) •Quercus palustris (30%) •Carex tribuloides (15%) •Hydrilla verticillata (35%)	Field verified •Depleted Matrix (F3)	Y	02131002	Y	29,583	N/A	N/A	N/A	N/A	

WETLAND LOCATION MAP SHEET NO.	COUNTY	SYSTEM LABEL	SAMPLE PLOT COORDINATES		WATERWAY OR WETLAND CLASSIFICATION	DELINEATION ACCURACY: FIELD DELINEATION VS APPROXIMATION	DELINEATION PARAMETERS: SOIL SAMPLE (ROUTINE) VS NO SOIL SAMPLE (MODIFIED)	WETLAND SAMPLE POINT HYDROLOGY CRITERIA	WETLAND SAMPLE POINT DOMINANT VEGETATION	WETLAND SAMPLE POINT HYDRIC SOIL (FIELD VERIFIED HYDRIC SOIL INDICATOR VS PUBLISHED DATA)	WETLAND FUNCTION & VALUE ASSESSMENT	DNR 8-DIGIT WATERSHED	WETLAND AREAS		STREAM USE DESIGNATION	WATERWAY AREAS			COMMENTS
			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
9, 10a, 10b	Anne Arundel	MeC_WET7	39.01555366°N	-76.41058284°W	PFO1A	Field Verified	Routine	•Water-Stained Leaves (B9) •Drainage Patterns (B10)	•Acer rubrum (20%) •Liquidambar styraciflua (60%) •Lonicera morrowii (10%) •Microstegium vimineum (10%) •Toxicodendron radicans (5%)	Field verified •Depleted Matrix (F3)	Y	02131002	Y	51,248	N/A	N/A	N/A	N/A	N/A	Represents all linear PFO wetlands within the interchanges of Oceanic Drive south of US 301
9 & 10a	Anne Arundel	MeC_WET9	39.01650176°N	-76.4120161°W	PEM1A	Field Verified	Routine	•Surface Water to 1" (A1) •Drainage Patterns (B10) •FAC-Neutral Test (D5)	•Phragmites australis (85%)	Field verified •Depleted Matrix (F3)	N	02131002	Y	2,126	N/A	N/A	N/A	N/A	N/A	
9	Anne Arundel	MeC_WET10	39.02060133°N	-76.4183744°W	E2SS/E2FO	Field Verifed	Modified	•Surface Water of 3" in < 10% of plot (A1) •Sediment Deposits (B2) •Dry Season Water Table (C2)	•Baccharis halimifolia (40%) •Diospyros virginiana (18%) •Liquidambar styraciflua (5%) •Rosa multiflora (15%) •Phragmites australis (40%) •Smilax rotundifolia (15%)	Field verified •Depleted Matrix (F3)	N	02131002	Y	3,170	N/A	N/A	N/A	N/A	N/A	
9 &10a	Anne Arundel	MeC_WET11	39.02032836°N	-76.41810378°W	E2EM1P	Field Verified	Modified	•Surface Water to 12" (A1) •High Water Table (A2) •Saturation (A3) •Inundation Visible on Aerial Imagery (B7) •Geomorphic Position (D2)	•Phragmites australis (100%)	Published soil data indicates hydric soils	Y	02131002	Y	175,618	N/A	N/A	N/A	N/A	N/A	Represents multiple tidally influenced phragmites emergent wetlands surrounding Meredith Creek mainstem and tributary
9	Anne Arundel	MeC_WET12	39.02037286°N	-76.41802136°W	E2FO1P	Field Verified	Modified	•Surface Water at 3" (A1) •Water Marks (B1) •Sediment Deposits (B2)	•Acer rubrum (30%) •Amelanchier arborea (11%) •Liquidambar styraciflua (40%) •Phragmites australis (20%) •Hedra helix (18%) •Smilax rotundifolia (35%)	Published soil data is non-hydric however considered to be hydric based on best professional judgement	N	02131002	Y	16,220	N/A	N/A	N/A	N/A	N/A	Represents multiple tidally influenced forested wetlands surrounding MeC_WET11
9	Anne Arundel	MeC_WET13	39.01928675°N	-76.41484387°W	PFO1B	Field Verified	Routine	•High Water Table at 12" (A2) •Saturation to the surface (A3) •Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Acer rubrum (10%) •Liquidambar styraciflua (20%) •Lindera benzoin (5%) •Phragmites australis (70%) •Smilax rotundifolia (3%) •Toxicodendron radicans (10%)	Field verfied •Redox Dark Surface (F6)	Y	02131002	Y	25,461	N/A	N/A	N/A	N/A	N/A	Has potential to be a vernal pool.
9 & 10a	Anne Arundel	MeC_WET34	N/A	N/A	PFO	Approximated	Modified	N/A	N/A	N/A	N	02131002	Y	238,344	N/A	N/A	N/A	N/A	N/A	No datasheet; DNE property
10a	Anne Arundel	MeC_WUS3	39.01747141°N	-76.41795083°W	E1UB2/3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	90	39		Tidally influenced tributary to Meredith Creek
10a	Anne Arundel	MeC_WUS4	39.01752902°N	-76.41808741°W	R4SB3/4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	171	90		Intermittent tributary to WUS3
10a & 11a & 11b	Anne Arundel	MeC_WET15	39.01136895°N	-76.41082293°W	PFO1R	Field Verified	Routine	•Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Liquidambar styraciflua (50%) •Microstegium vimineum (40%) •Smilax rotundifolia (5%) •Toxicodendron radicans (5%)	Field verified •Depleted Matrix (F3)	Y	02131002	Y	72,380	N/A	N/A	N/A	N/A	N/A	Represents several nontidal forested wetland areas surrounding estuarine emergent wetland fringes (WET14) around WUS15 (lake)
10a &10b	Anne Arundel	MeC_WET17	39.0141718°N	-76.40928686°W	PSS1A	Field Verified	Modified	•Drainage Patterns (B10) •Geomorphic Position (D2)	•Fraxinus pennsylvanica sapling (30%) •Phragmites australis (20%) •Clematis virgininia (10%) •Lonicera japonica 10(%)	Published soil data indicates hydric soils	N	02131002	Y	5,687	N/A	N/A	N/A	N/A	N/A	
10a	Anne Arundel	MeC_WET18	39.01474194°N	-76.41215216°W	PFO1A	Field Verified	Modified	•Water-Stained Leaves (B9)	•Liquidambar styraciflua (60%) •Liquidambar styraciflua sapling (70%) •Lonicera japonica (30%) •Toxicodendron radicans (5%)	Published soil data indicates hydric soils	Y	02131002	Y	155,544	N/A	N/A	N/A	N/A	N/A	
10a	Anne Arundel	MeC_WET19	39.01415409°N	-76.41100767°W	PEM1A	Field Verified	Modified	•Saturation Visible on Aerial Imagery (C9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Betula nigra sapling (5%) •Liquidambar styraciflua sapling (2%) •Salix nigra (5%) •Persicaria punctata (20%) •Typha angustifolia (75%)	Published soil data indicates hydric soils	Y	02131002	Y	39,713	N/A	N/A	N/A	N/A	N/A	Nontidal emergent wetland pockets within WET18 PFO. Has potential to be a vernal pool.
10a	Anne Arundel	MeC_WET33	N/A	N/A	PEM	Approximated	Modified	N/A	N/A	N/A	N	02131002	Y	63,627	N/A	N/A	N/A	N/A	N/A	No datasheet; DNE property. Has potential to be a vernal pool.
10b	Anne Arundel	MeC_WET5	39.01720064°N	-76.40784743°W	PFO1A	Field Verified	Routine	•Saturation to the surface (A3) •Drainage Patterns (B10) •Dry Season Water Table (C2) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Liquidambar styraciflua (60%) •Liquidambar styraciflua sapling (5%) •Liquidambar styraciflua herbaceous (3%) •Phragmites australis (3%) •Symphyotrichum racemosum (2%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	N	02131002	Y	3,940	N/A	N/A	N/A	N/A	N/A	
10b	Anne Arundel	MeC_WET6	39.01945829°N	-76.40868025°W	PFO1A	Field Verified	Routine	•Drainage Patterns (B10) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Liquidambar styraciflua (80%) •Cinna arundinacea (12%) •Campsis radicans (8%) •Symphyotrichum racemosum (10%)	Field verified •Depleted Matrix (F3)	N	02131002	Y	2,027	N/A	N/A	N/A	N/A	N/A	
9 & 10b	Anne Arundel	MeC_WET8	39.01679662°N	-76.41012284°W	PEM1A/B	Field Verified	Routine	•Surface Water to 0.5" (A1) •High Water Table at 2" (A2) •Saturation to the surface (A3)	•Phragmites australis (95%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	N	02131002	Y	6,150	N/A	N/A	N/A	N/A	N/A	
10b	Anne Arundel	MeC_WET16	39.01274945°N	-76.40826216°W	PEM1R	Field Verified	Modified	•Drainage Patterns (B10) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Liquidambar styraciflua (5%) •Phragmites australis (100%)	Field verfied •Redox Dark Surface (F6)	N	02131002	Y	10,883	N/A	N/A	N/A	N/A	N/A	
10b & 11b	Anne Arundel	MeC_WET23	39.01807589°N	-76.40685143°W	E2EM1P	Field Verified	Routine	•Surface Water of 4" (A1) •High Water Table at 0" (A2) •Saturation to the surface (A3) •Inundation Visible on Aerial Imagery (B7) •Water-Stained Leaves (B9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Phragmites australis (100%)	Field verfied •Redox Dark Surface (F6) •Muck Presence (A8) (LRR U)	Y	02131002	N	641,327	N/A	N/A	N/A	N/A	N/A	Large phragmites wetland, connection to Mezick Pond

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			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
10b	Anne Arundel	MeC_WET24	39.01829482°N	-76.40776976°W	PFO1R	Field Verified	Routine	•Saturation to 10" (A3) •Dry Season Water Table (C2) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (25%) •Liquidambar styraciflua (40%) •Liquidambar styraciflua sapling (3%) •Ilex opaca (5%) •Saururus cernuus (30%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	N	02131002	Y	10,753	N/A	N/A	N/A	N/A	
10b	Anne Arundel	MeC_WET25	39.01912706°N	-76.40827381°W	PFO1A/B	Field Verified	Routine	•High Water Table at 3" (A2) •Saturation to the surface (A3) •Sparsely Vegetated Concave Surface (B8) •Geomorphic Position (D2)	•Liquidambar styraciflua (50%) •Lindera benzoin (2%) •Ilex opaca (3%)	Field verfied •Redox Dark Surface (F6)	N	02131002	Y	243	N/A	N/A	N/A	N/A	
10b	Anne Arundel	MeC_WET27	39.01950332°N	-76.4081037°W	PFO1A/B	Field Verified	Routine	•Surface Water of 0.5" (A1) •High Water Table at 3" (A2) •Saturation to the surface (A3)	•Liquidambar styraciflua (30%) •Pinus strobus (10%) •Phragmites australis (30%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	N	02131002	Y	880	N/A	N/A	N/A	N/A	
10b	Anne Arundel	MeC_WET29	39.02029196°N	-76.40764856°W	PFO1A	Field Verified	Routine	•Surface Water of 1" (A1) •Oxidized Rhizospheres along Living Roots (C3) •FAC-Neutral Test (D5) •Saturation (A3) to 2"	•Fraxinus pennsylvanica sapling (3%) •Liquidambar styraciflua (40%) •Liquidambar styraciflua sapling (3%) •Cinna arundinacea (20%) •Persicaria hydropiperoides (15%) •Poaceae sp. (30%)	Field verified •Depleted Matrix (F3)	N	02131002	Y	8,974	N/A	N/A	N/A	N/A	
10b	Anne Arundel	MeC_WUS8	39.01240348°N	-76.40778828°W	R4SB2/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A		Y	131	63	Drains directly to lake
10b & 11b	Anne Arundel	MeC_WUS9	39.01207223°N	-76.40744987°W	R4SB3/4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	173	68	Drains directly to lake
10b	Anne Arundel	MeC_WUS10	39.01842746°N	-76.40879008°W	R4SB4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	316	72	
10b	Anne Arundel	MeC_WUS11	39.01894922°N	-76.40825573°W	R4SB4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	474	249	
10b & 11b	Anne Arundel	MeC_WUS12	39.01343962°N	-76.40574748°W	E1UB2/3/4	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	II	N	347,045	2,234	Mezick Pond; east of US301 just north of Bay Bridge
10b	Anne Arundel	MeC_WUS14	39.01929345°N	-76.40826648°W	R4SB3/4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	I	Y	204	102	
11a & 11b	Anne Arundel	MeC_WUS15	39.0122338°N	-76.40964455°W	E1UB3	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	II	Y	1,367,956	2,524	Large manmade lake (Westinghouse Bay) within MDTA property, west of US301 just north of Bay Bridge. No directly observed connection to tidal waters, however classified tidal per NWI and DNR designations
11a & 11b	Anne Arundel	MeC_WET14	39.01139676°N	-76.4107006°W	E2EM1P	Field Verified	Routine	•Saturation to the surface (A3) •Water-Stained Leaves (B9) •Dry Season Water Table (C2) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Phragmites australis (100%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	Y	02131002	Y	295,470	N/A	N/A	N/A	N/A	Represents several estuarine emergent wetland fringes around WUS15 (lake)
11a & 12	Anne Arundel	MeC_WET20	39.00355525°N	-76.41113866°W	PFO1B/R	Field Verified	Modified	•Surface Water of 0.25" (A1) •Drainage Patterns (B10) •Geomorphic Position (D2)	•Acer rubrum (10%) •Liquidambar styraciflua (25%) •Liquidambar styraciflua sapling (20%) •Quercus palustris sapling (10%) •Cinna arundinacea (10%) •Solidago sp. (3%) •Vitis sp. (10%)	Published soil data indicates hydric soils	Y	02131002	Y	95,797	N/A	N/A	N/A	N/A	
11a	Anne Arundel	MeC_WET21	39.00658307°N	-76.41128179°W	PFO1A	Field Verified	Modified	•Water-Stained Leaves (B9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (20%) •Diospyros virginiana (20%) •Liquidambar styraciflua (50%) •Liquidambar styraciflua sapling (15%) •Acer rubrum sapling (5%) •Phragmites australis (70%) •Hedra helix (5%) •Smilax rotundifolia (3%) •Toxicodendron radicans (3%)	Published soil data is non-hydric however considered to be hydric based on best professional judgement	N	02131002	Y	2,985	N/A	N/A	N/A	N/A	
11a	Anne Arundel	MeC_WET22	39.00931875°N	-76.41201566°W	PFO1A	Field Verified	Modified	•Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum herbaceous layer (20%) •Liquidambar styraciflua (60%) •Solidago patula (10%) •Smilax rotundifolia (50%)	Published soil data indicates hydric soils	N	02131002	Y	1,346	N/A	N/A	N/A	N/A	
11a & 12	Anne Arundel	MeC_WET26	39.00455629°N	-76.41182779°W	E2EM1P	Field Verified	Modified	•Drainage Patterns (B10) •Saturation Visible on Aerial Imagery (C9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Phragmites australis (80%) •Toxicodendron radicans (5%)	Published soil data indicates hydric soils	Y	02131002	Y	117,056	N/A	N/A	N/A	N/A	
11a	Anne Arundel	MeC_WET30	39.00737463°N	-76.41268531°W	PEM1C	Field Verified	Modified	•Surface Water of 2" (A1) •Saturation Visible on Aerial Imagery (C9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Fraxinus pennsylvanica (5%) •Typha latifolia (80%) •Lonicera japonica (5%)	Published soil data indicated hydric soils	N	02131002	Y	14,246	N/A	N/A	N/A	N/A	Represents several small emergent wetlands on pvt property; no soils taken. Has potential to be a vernal pool.
11b	Anne Arundel	MeC_WET31	39.00647738°N	-76.40631214°W	E2EM1P	Field Verified	Routine	•High Water Table to 4" (A2) •Saturation to the surface (A3) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Phragmites australis (100%)	Field verified •Depleted Matrix (F3) •Sandy Redox (S5)	N	02131002	Y	7,943	N/A	N/A	N/A	N/A	
11b	Anne Arundel	MeC_WET32	39.00899048°N	-76.40490685°W	PEM1A/B	Field Verified	Routine	•High Water Table at the surface (A2) •Saturation to the surface (A3) •FAC-Neutral Test (D5)	•Phragmites australis (90%)	Field verified •Depleted Matrix (F3) •Redox Dark Surface (F6)	N	02131002	Y	4,840	N/A	N/A	N/A	N/A	
10b & 11b	Anne Arundel	MeC_WUS13	39.01150733°N	-76.40562065°W	R4SB4/5	Field Verified	N/A	N/A	N/A	N/A	N/A	02131002	N/A	N/A	II	Y	39	52	
11b, 12, 13	Anne Arundel to Queen Anne's	KI_WUS1	38.98164117°N	-76.33447764°W	E1UBL	Approximated	N/A	N/A	N/A	N/A	N/A	02139998 & 02130511	N/A	N/A	II	N	12,031,390	Open: 3,665 Piped: 181	Chesapeake Bay
12	Anne Arundel	MeC_WET28	39.00344223°N	-76.41132991°W	E2EM	Field Verified	Modified	•Drainage Patterns (B10) •Saturation Visible on Aerial Imagery (C9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Phragmites australis (80%) •Toxicodendron radicans (5%)	Published soil data indicates hydric soils	N	02131002	Y	9,100	N/A	N/A	N/A	N/A	

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			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
13	Queen Anne's	KI_WET1	38.98168961°N	-76.33411868°W	PEM1G	Field Verified	Routine	•Drainage Patterns (B10) •Geomorphic Position (D2)	•Paspalum dilatatum (25%) •Phragmites australis (30%) •Setaria pumila (25%)	Field verified •Depleted Matrix (F3)	N	02130511	Y	21,042	N/A	N/A	N/A	N/A	
13	Queen Anne's	KI_WET30	N/A	N/A	E2EM1P	Approximated	Modified	•High Water Table (A2)	•Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130511	Y	103,648	N/A	N/A	N/A	N/A	Approximated. Field sheet taken from a distance
14	Queen Anne's	KI_WET2	38.97900101°N	-76.32409785°W	PEM1E	Field Verified	Routine	•1" Surface Water (A1) •High Water Table to the surface (A2) •Saturation to the surface (A3)	•Juncus effusus (20%) •Juncus tenuis (40%) •Smilax rotundifolia (5%) •Mikania scandens (10%)	Field verified •Hydrogen Sulfide (A4) •Depleted Dark Surface (F7) •Redox Depressions (F8)	N	02130511	Y	6,606	N/A	N/A	N/A	N/A	
14	Queen Anne's	KI_WET3	38.9763927°N'	-76.32306956°W	PFO1	Field Verified	Routine	•1"Surface Water (A1) •High Water Table to the surface(A2) •Saturation to the surface (A3)	•Acer saccharinum (20%) •Morella cerifera (20%) •Typha angustifolia (50%)	Field verified •Depleted Matrix (F3) •Redox Depressions (F8)	N	02130511	N	878	N/A	N/A	N/A	N/A	
14	Queen Anne's	KI_WET4	38.97632022°N	-76.32228036°W	PEM	Field Verified	Routine	•High Water Table to 8" (A2) •Saturation to surface (A3)	•Cyperus strigosus (10%) •Phragmites australis (80%)	Field verified •Depleted Matrix (F3)	N	02130511	N	2,844	N/A	N/A	N/A	N/A	Drains to an ephemeral channel
14	Queen Anne's	KI_WET5	38.97616459°N	-76.32135517°W	PEM	Field Verified	Routine	•Saturation to the surface (A3)	•Echinochloa crus-galli (40%) •Typha angustifolia (30%)	Field verified •Depleted Matrix (F3)	N	02130501	Y	330	N/A	N/A	N/A	N/A	Isolated
14	Queen Anne's	KI_WET6	38.97641211°N	-76.32096089°W	PFO	Field Verified	Routine	•Surface Water to 2" (A1) •High Water Table to the surface (A2) •Saturation to the surface (A3) •Water Marks (B1)	•Quercus palustris (30%) •Morella pensylvanica (20%) •Phragmites australis (60%) •Toxicodendron radicans (20%)	Field verfied •Depleted Matrix (F3) •Redox Dark Surface (F6)	N	02130501	N	3,154	N/A	N/A	N/A	N/A	Drains to outfall
14	Queen Anne's	KI_WET28	38.9807608°N	76.3263379°W	PEM1	Field Verified	Modified	•Surface Water of 1" (A1) •High Water Table (A2) •Water Marks (B1)	•Juncus effusus (10%) •Poa sp. (20%) •Phragmites australis (60%)	Published soil data indicates hydric soils	Y	02130511	N	120,837	N/A	N/A	N/A	N/A	
15	Queen Anne's	KI_WUS2	38.97719889°N	-76.31633718°W	R2	Field Verified	N/A	N/A	N/A	N/A	N/A	02130501	N/A	N/A	I	N	7,142	330	Thompson Creek, confluent to Cox Creek
15	Queen Anne's	KI_WUS2	38.97719889°N	-76.31633718°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130501	N/A	N/A	I	N	5,490	Open: 527 Piped: 300	Thompson Creek, confluent to Cox Creek
15	Queen Anne's	KI_WET7a	38.97733902°N	-76.31696812°W	PEM	Field Verified	Routine	•Surface Water of 2" (A1) •High Water Table to the surface (A2) •Saturation to surface (A3) •Water Stained Leaves (B9)	•Salix nigra (5%) •Ludwigia palustris (15%) •Alisma subcordatum (15%) •Persicaria punctata (20%)	Field verified •Depleted Matrix (F3)	N	02130501	Y	2,274	N/A	N/A	N/A	N/A	
15	Queen Anne's	KI_WET7b	38.97721578°N	-76.3164505°W	E2EM1	Field Verified	Modified	•0.10" Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Stained Leaves (B9) •Geomorphic Position (D2)	•Iva annua (5%) •Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130501	N	26,353	N/A	N/A	N/A	N/A	
15	Queen Anne's	KI_WET8	38.97658268°N	-76.31559122°W	PEM	Field Verified	Routine	•0.5" Surface Water (A1) •High Water Table to the surface (A2) •Saturation to the surface (A3) •Water Stained Leaves (B9) •Geomorphic Position (D2)	•Liquidambar styraciflua sapling (5%) •Salix nigra sapling (5%) •Morella pensylvanica (2%) •Phragmites australis (80%)	Field verified •Depleted Matrix (F3)	N	02130501	N	11,469	N/A	N/A	N/A	N/A	Potential stormwater system, drainage connection to WET7b.
15	Queen Anne's	KI_WET27	38.9782728°N	76.3158564°W	PFO1A	Field Verified	Modified	•Surface Water to 1" (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Acer saccharinum (40%) •Liriodendrion tulipifera (10%) •Liriodendrion tulipifera sapling (10%) •Morella pensylvanica (10%) •Rosa multiflora (10%) •Phragmites australis (30%) •Lonicera japonica (10%)	Published soil data indicates hydric soils	Y	02130501	N	53,627	N/A	N/A	N/A	N/A	Receives drainage from adjacent stormwater management system
16	Queen Anne's	KI_WUS3	38.9755314°N	-76.30333229°W	E1UBL	Field Verifed	N/A	N/A	N/A	N/A	N/A	02130501	N/A	N/A	II	N	577,148	Open: 843 Piped:173	Cox Creek. Piped channel to the west of the main stem which is bridged. Calculations are a total of both stems
15 & 16	Queen Anne's	KI_WET9	38.97540196°N	-76.30791288°W	PFO	Field Verified	Modified	•Water Stained Leaves (B9) •Geomorphic Position (D2) •Saturation Visible on Aerial Imagery (C9)	•Liquidambar styraciflua (5%) •Robinia pseudoacacia (5%) •Liquidambar styraciflua sapling (5%) •Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130501	Y	38,530	N/A	N/A	N/A	N/A	
16	Queen Anne's	KI_WET26	38.9762072°N	-76.30689569°W	E2EM1P	Field Verified	Modified	• 1" Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Acer saccharinum (20%) •Juncus effusus (10%) •Phragmites australis (50%)	Published soil data indicates hydric soils	Y	02130501	N	71,074	N/A	N/A	N/A	N/A	
16	Queen Anne's	KI_WET29	38.97526081°N	-76.30735171	E2EM1P	Approximated	Modified	•Surface Water of 1" (A1) •High Water Table (A2) •Saturation (A3)	•Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130501	N	101,309	N/A	N/A	N/A	N/A	
17	Queen Anne's	KI_WET25	38.97748081°N	-76.29150858°W	PUBHx	Field Verified	Modified	• 2" Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1) •Inundation Visible on Aerial Imagery (B7)	•Juncus effusus (30%) •Phragmites australis (60%)	Published soil data indicates hydric soils	N/A	02130501	N	537	N/A	N/A	N/A	N/A	
18 & 19	Queen Anne's	KI_WUS6	39.0171454°N	-76.48255445°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	II	N	12,910	247	Macum Creek
18	Queen Anne's	KI_WUS7	39.02000231°N	-76.4765213°W	R2	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	II	N	965	119	Macum Creek
18	Queen Anne's	KI_WUS7	39.02000231°N	-76.4765213°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	II	N	17,206	Open: 278 Piped: 16	Macum Creek

WETLAND LOCATION MAP SHEET NO.	COUNTY	SYSTEM LABEL	SAMPLE PLOT COORDINATES		WATERWAY OR WETLAND CLASSIFICATION	DELINEATION ACCURACY: FIELD DELINEATION VS APPROXIMATION	DELINEATION PARAMETERS: SOIL SAMPLE (ROUTINE) VS NO SOIL SAMPLE (MODIFIED)	WETLAND SAMPLE POINT HYDROLOGY CRITERIA	WETLAND SAMPLE POINT DOMINANT VEGETATION	WETLAND SAMPLE POINT HYDRIC SOIL (FIELD VERIFIED HYDRIC SOIL INDICATOR VS PUBLISHED DATA)	WETLAND FUNCTION & VALUE ASSESSMENT	DNR 8-DIGIT WATERSHED	WETLAND AREAS		STREAM USE DESIGNATION	WATERWAY AREAS			COMMENTS
			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
18 & 19	Queen Anne's	KI_WET21	38.97560843°N	-76.27516592°W	E2EM1P	Field Verified	Modified	• 1" Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Baccharis halimifolia (20%) •Phragmites australis (80%)	Published soil data indicates hydric soils	N	02130505	N	15,403	N/A	N/A	N/A	N/A	has potential to be a vernal pool.
18	Queen Anne's	KI_WET22	38.9755958°N'	-76.27529608°W	E2EM1P	Field Verified	Modified	• 1" Surface Water (A1) •High Water Table (A2) •Saturation (A3)	•Phragmites australis (90%)	Published soil data indicates hydric soils	N	02130505	N	9,325	N/A	N/A	N/A	N/A	has potential to be a vernal pool.
18	Queen Anne's	KI_WET23	38.97676157°N	-76.27902322°W	E2SS1/EM1P	Field Verified	Modified	• 1" Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Baccharis halimifolia (20%) •Phragmites australis (80%)	Published soil data indicates hydric soils	N	02130505	N	7,080	N/A	N/A	N/A	N/A	has potential to be a vernal pool.
18	Queen Anne's	KI_WET24	38.97670198°N	-76.27909532°W	E2SS1/EM1P	Field Verified	Modified	• 1" Surface Water (A1) •High Water Table (A2) •Saturation (A3)	•Phragmites australis (90%)	Published soil data indicates hydric soils	N	02130505	N	2,944	N/A	N/A	N/A	N/A	
19	Queen Anne's	KI_WUS9	N/A	N/A	R2UB3	Approximated	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	I	N	72,796	Open: 957 Piped: 71	
19	Queen Anne's	KI_WET10	38.97402053°N	-76.2709101°W	PSS	Approximate and Field Verified	Modified	•2" Surface Water (A1) •High Water Table to the surface (A2) •Saturation to the surface (A3) •Water Stained Leaves (B9) •Geomorphic Position (D2) •Saturation Visible on Aerial Imagery (C9)	•Liquidambar styraciflua (5%) •Baccharis halimifolia (5%) •Phragmites australis (80%)	Published soil data indicates hydric soils	N	02130505	N	8,962	N/A	N/A	N/A	N/A	Potential stormwater management feature
20	Queen Anne's	KI_WUS4	38.97218693°N	-76.25847408°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	II	N	218,657	804	Piney Creek
20	Queen Anne's	KI_WET11	38.97262255°N	-76.26367824°W	PFO	Field Verified	Modified	•High Water Table to 6" (A2) •Saturation to 2" (A3)	•Acer saccharinum (10%) •Liquidambar styraciflua sapling (5%) •Salix nigra (15%) •Phragmites australis (75%)	Field verified •Depleted Matrix (F3)	Y	02130505	Y	48,425	N/A	N/A	N/A	N/A	
20	Queen Anne's	KI_WET12A	N/A	N/A	PFO4A	Field Verifed	Modified	•Drainage Patterns (B10) •Geomorphic Position (D2) •Saturation Visible on Aerial Imagery (C9)	•Acer saccharinum (15%) •Pinus strobus (30%) •Morella pensylvanica (20%)	Published soil data indicates hydric soils	Y	02130505	N	88,827	N/A	N/A	N/A	N/A	F&V forms for 12 and 12A combined. Has potential to be a vernal pool.
20	Queen Anne's	KI_WET12	38.97199765°N	-76.2621166°W	E2EM1P	Field Verified	Modified	•Drainage Patterns (B10) •Geomorphic Position (D2) •Saturation Visible on Aerial Imagery (C9)	•Phragmites australis (90%)	Field verified •Depleted Matrix (F3)	Y	02130505	N	116,267	N/A	N/A	N/A	N/A	F&V forms for 12 and 12A combined.
20	Queen Anne's	KI_WET13	38.97076149°N	-76.25457028°W	E2EM1	Field Verified	Modified	•2" Surface Water (A1) •High Water Table to surface (A2) •Saturation to surface (A3)	•Phragmites australis (90%)	Field verified •Hydrogen Sulfide (A4) •Depleted Below Dark Surface (A11) •Redox Dark Surface (F6)	Y	02130504 & 02130505	N	36,797	N/A	N/A	N/A	N/A	
20	Queen Anne's	KI_WET14	38.97116452°N	-76.25402425°W	PEM	Field Verified	Routine	•2" Surface Water (A1) •High Water Table at 2" (A2) •Saturation to the surface (A3)	•Phragmites australis (50%)	Field verified •Depleted Matrix (F3)	N	02130505	Y	1,548	N/A	N/A	N/A	N/A	
20	Queen Anne's	KI_WET16	38.973869°N	-76.25323042°W	E2EM1P	Field Verified	Modified	• Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Baccharis halimifolia (10%) •Phragmites australis (90%)	Published soil data indicates hydric soils	N	02130505	N	5,043	N/A	N/A	N/A	N/A	
20	Queen Anne's	KI_WET17	38.97347055°N	-76.25339906°W	PUBHX	Field Verified	Modified	• Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Baccharis halimifolia (10%) •Phragmites australis (80%)	Published soil data indicates hydric soils	N	02130505	N	10,519	N/A	N/A	N/A	N/A	
20	Queen Anne's	KI_WET18	38.97303475°N	-76.25768051°W	E2EM1P	Field Verified	Modified	• Surface Water (A1) •High Water Table (A2) •Saturation to surface (A3)	•Baccharis halimifolia (10%) •Phragmites australis (80%)	Published soil data indicates hydric soils	N	02130505	N	20,126	N/A	N/A	N/A	N/A	
20	Queen Anne's	KI_WET19	38.97371883°N	-76.26040725°W	E2EM1P	Field Verified	Modified	• Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Baccharis halimifolia (10%) •Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130505	N	38,301	N/A	N/A	N/A	N/A	
20	Queen Anne's	KI_WET20	38.9742670°N	76.2620598°W	PEM1E	Field Verified	Modified	• Surface Water of 1" (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Phragmites australis (100%)	Published soil data indicates hydric soils	N	02130505	N	5,028	N/A	N/A	N/A	N/A	
21	Queen Anne's	KI_WUS5	39.01770931°N	-76.48130452°W	E1UBL	Approximated	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	II	N	735,572	810	Kent Island Narrows
20 & 21	Queen Anne's	KI_WET15	38.97127205°N	-76.25203214°W	E2EM	Field Verified	Routine	•High Water Table to surface (A2) •Saturation to surface (A3) •Water Marks (B1)	•Phragmites australis (80%) •Mikania scandens (5%)	Field verified •Hydrogen Sulfide (A4) •Muck Presence (A8) •Depleted Matrix (F3)	Y	02130504 & 02130505	Y	47,762	N/A	N/A	N/A	N/A	
21 & 22	Queen Anne's	PB_WET1	38.96753192°N	-76.23756452°W	E2EM1	Field Verified	Modified	•High Water Table to 4" (A2) •Saturation to the surface (A3) •Water Marks (B1)	•Phragmites australis (70%)	Field verified •Hydrogen Sulfide (A4) •Muck Presence (A8)	Y	02130504	N	260,565	N/A	N/A	N/A	N/A	
21 & 22	Queen Anne's	PB_WET9	38.96949655°N	-76.23972238°W	E2EM1P	Field Verified	Modified	•High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Baccharis halimifolia (10%) •Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130505	N	58,482	N/A	N/A	N/A	N/A	
21	Queen Anne's	PB_WET10	38.97166814°N	-76.24417892°W	E2EM1P	Field Verified	Modified	• 2" Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Baccharis halimifolia (20%) •Phragmites australis (80%)	Published soil data indicates hydric soils	N	02130505	N	5,903	N/A	N/A	N/A	N/A	
21	Queen Anne's	PB_WET11	38.97366463°N	-76.17490833°W	E2EM1P	Field Verified	Modified	•Surface Water of 1" (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Baccharis halimifolia (20%) •Phragmites australis (80%)	Published soil data indicates hydric soils	Y	02130505	Y	25,228	N/A	N/A	N/A	N/A	

WETLAND LOCATION MAP SHEET NO.	COUNTY	SYSTEM LABEL	SAMPLE PLOT COORDINATES		WATERWAY OR WETLAND CLASSIFICATION	DELINEATION ACCURACY: FIELD DELINEATION VS APPROXIMATION	DELINEATION PARAMETERS: SOIL SAMPLE (ROUTINE) VS NO SOIL SAMPLE (MODIFIED)	WETLAND SAMPLE POINT HYDROLOGY CRITERIA	WETLAND SAMPLE POINT DOMINANT VEGETATION	WETLAND SAMPLE POINT HYDRIC SOIL (FIELD VERIFIED HYDRIC SOIL INDICATOR VS PUBLISHED DATA)	WETLAND FUNCTION & VALUE ASSESSMENT	DNR 8-DIGIT WATERSHED	WETLAND AREAS		STREAM USE DESIGNATION	WATERWAY AREAS			COMMENTS
			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
22	Queen Anne's	PB_WUS1	38.96818141°N	-76.239905273°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130504	N/A	N/A	Unknown	N	117,236	263	Enclosed lake/pond - no identified hydrologic connection to Prospect Bay or Muddy Creek
22	Queen Anne's	PB_WUS2	38.96600217°N	-76.23384893°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130504	N/A		I	N	47,634	270	Enclosed lake/pond - no hydrologic connection to Prospect Bay
22	Queen Anne's	PB_WUS4	38.96930022°N	-76.23830801°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130504	N/A	N/A	II	N	114,946	283	Portion of Muddy Creek
22 & 23	Queen Anne's	PB_WET5	38.9738503°N	-76.17519116°W	E2EM1	Field Verified	Routine	•High Water Table (A2) •Saturation to 6" (A3) •Iron Deposits (B5) •Inundation Visible on Aerial Imagery (B7)	•Phragmites australis (80%)	Field verified •Depleted Matrix (F3) •Redox Depressions (F8)	Y	02130504	N	590,887	N/A	N/A	N/A	N/A	
22 & 23	Queen Anne's	PB_WET8A	N/A	N/A	PFO	Approximated	Modified	•Geomorphic Position (D2) •Inundation Visible on Aerial Imagery (B7)	•Acer saccharinum (20%) •Baccharis halimifolia (20%) •Juniperus virginiana (20%) •Quercus bicolor (20%) •Phragmites australis (30%)	Published soil data indicates hydric soils	N	02130505	N	111,771	N/A	N/A	N/A	N/A	
22 & 23	Queen Anne's	PB_WET8	38.96655827°N	-76.22711184°W	E2EM1P	Approximated	Modified	• 2" Surface Water (A1) •High Water Table to surface (A2) •Saturation to the surface (A3) •Water Marks (B1)	•Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130505	N	720,663	N/A	N/A	N/A	N/A	This sample point was taken from the adjacent boardwalk for the estuarine system. Several PFO polygons (8A) within the estuarine WET8 have been approximated.
23	Queen Anne's	PB_WUS3	38.96533541°N	-76.22797637°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130504	N/A	N/A	II	N	22,451	273	Marshy Creek. Calculations are a total of 2 stems
23	Queen Anne's	PB_WET2	38.964883°N	-76.22623305°W	E2EM1	Field Verified & Approximated	Modified	•Geomorphic Position (D2) •Saturation Visible on Aerial Imagery (C9)	•Iva frutescens (20%) •Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130505	N	116,814	N/A	N/A	N/A	N/A	
23	Queen Anne's	PB_WET3	38.96629706°N	-76.22468077°W	PSS	Field Verified	Routine	•High Water Table to 4" (A2) •Saturation to 2" (A3) •Aquatic Fauna (B13) •Geomorphic Position (D2) •Saturation Visible on Aerial Imagery (C9)	•Baccharis halimifolia (15%) •Phragmites australis (85%)	Field verified •Depleted Matrix (F3)	Y	02130505	N	51,008	N/A	N/A	N/A	N/A	
23	Queen Anne's	PB_WET4	38.96589615°N	-76.22357589°W	PUB	Field Verified	Routine	•3"-4" Surface Water (A1) •High Water Table to surface (A2) •Saturation to the surface (A3) •Inundation Visible on Aerial Imagery (B7) •Sparsely Vegetated Concave Surface (B8) •Geomorphic Position (D2)	•Phragmites australis (25%)	Published soil data indicates hydric soils	N	02130505	Y	16,975	N/A	N/A	N/A	N/A	Drains to PB_WET7
23	Queen Anne's	PB_WET6	38.9653257°N	-76.228471°W	E2EM1	Field Verified	Modified	•High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Iva frutescens (20%) •Phragmites australis (70%)	Published soil data indicates hydric soils	Y	02130504	N	60,089	N/A	N/A	N/A	N/A	Headwaters of Marshy Creek
23	Queen Anne's	PB_WET7	38.96567073°N	-76.22396228°W	PEM	Field Verified	Routine	•High Water Table at the surface (A2) •Saturation to the surface (A3) •Water Stained Leaves (B9) •Geomorphic Position (D2)	•Ludwigia palustris (20%) •Phragmites australis (65%) •Mikania scandens (20%)	Field verified •Depleted Matrix (F3)	N	02130505	Y	12,308	N/A	N/A	N/A	N/A	
24	Queen Anne's	WC_WUS3	38.96442726°N	-76.21562491°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	I	N	9,926	370	Within 1972 mapped tidal limits; designated as Use I waterway. Tidally influenced area surrounded by development, and draining to Jackson Creek.
24	Queen Anne's	WC_WUS3	38.96442726°N	-76.21562491°W	R2SB3	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	I	N	10,942	Open: 519 Piped: 34	Nontidal headwaters of Jackson Creek, east of Beach Harbor Drive
24	Queen Anne's	WC_WET4	38.96477348°N	-76.2126142°W	PFO	Field Verified	Modified	•High Water Table to the surface (A2) •Saturation to the surface (A3)	•Phragmites australis (70%)	Published soil data indicates hydric soils	N	02130505	N	5,880	N/A	N/A	N/A	N/A	
24	Queen Anne's	WC_WET5	38.96433248°N	-76.21547146°W	PEM1C	Field Verified	Modified	•High Water Table (A2) •Saturation to the surface (A3) •Water Marks (B1)	•Phragmites australis (80%)	Published soil data indicates hydric soils	N	02130505	Y	16,781	N/A	N/A	N/A	N/A	
24	Queen Anne's	WC_WET6	38.96454918°N	-76.21678713°W	E2EM1P	Field Verified	Modified	• Surface Water (A1) •High Water Table (A2) •Saturation (A3) •Water Marks (B1)	•Iva annua (20%) •Juncus effusus (20%) •Phragmites australis (60%)	Published soil data indicates hydric soils	Y	02130505	N	101,063	N/A	N/A	N/A	N/A	
25 & 26	Queen Anne's	WC_WUS1	38.96266727°N	-76.20143367°W	E1UBL	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	II	N	102,906	Open: 949 Piped: 226	Winchester Creek
25	Queen Anne's	WC_WET1	38.96107854°N	-76.20141674°W	E2SS1/EM1P	Field Verified	Modified	• Surface Water (A1) •Saturation (A3) •Water Marks (B1)	•Phragmites australis (90%) •Smilax rotundifolia (20%)	Published soil data indicates hydric soils	Y	02130505	N	60,798	N/A	N/A	N/A	N/A	
26	Queen Anne's	WC_WUS2	38.9639671°N	76.1928500°W	PUB	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	I	N	38,644	530	Pond

WETLAND LOCATION MAP SHEET NO.	COUNTY	SYSTEM LABEL	SAMPLE PLOT COORDINATES		WATERWAY OR WETLAND CLASSIFICATION	DELINEATION ACCURACY: FIELD DELINEATION VS APPROXIMATION	DELINEATION PARAMETERS: SOIL SAMPLE (ROUTINE) VS NO SOIL SAMPLE (MODIFIED)	WETLAND SAMPLE POINT HYDROLOGY CRITERIA	WETLAND SAMPLE POINT DOMINANT VEGETATION	WETLAND SAMPLE POINT HYDRIC SOIL (FIELD VERIFIED HYDRIC SOIL INDICATOR VS PUBLISHED DATA)	WETLAND FUNCTION & VALUE ASSESSMENT	DNR 8-DIGIT WATERSHED	WETLAND AREAS		STREAM USE DESIGNATION	WATERWAY AREAS			COMMENTS
			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
25 & 26	Queen Anne's	WC_WET2	38.96419148°N	-76.19724338°W	E2EM1	Field Verified	Modified	•High Water Table to the surface (A2) •Saturation to the surface (A3)	•Phragmites australis (80%) •Lonicera japonica (10%)	Published soil data indicates hydric soils	N	02130505	Y	17,429	N/A	N/A	N/A	N/A	
26	Queen Anne's	WC_WET3	38.96428549°N	-76.19676926°W	PFO1C	Field Verified & Approximated	Modified	•1" Surface Water (A1) •High Water Table (A2) •Saturation (A3)	•Acer rubrum (10%) •Baccharis halimifolia (10%) •Phragmites australis (60%) •Lonicera japonica (10%)	Published soil data indicates hydric soils	N	02130505	Y	5,570	N/A	N/A	N/A	N/A	
26	Queen Anne's	WC_WET7	38.96388326	-76.19518109	PEM1C	Field Verified	Modified	•Surface Water (A1) •High Water Table (A2) •Saturation (A3)	•Phragmites australis (90%)	Published soil data indicates hydric soils	Y	02130505	N	58,243	N/A	N/A	N/A	N/A	
27	Queen Anne's	Wal_WUS1A	38.97080859°N	-76.18076596°W	E1	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	I	N	683	106	Wasley Creek
27	Queen Anne's	Wal_WUS1A	38.97080859°N	-76.18076596°W	R4SB5	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	I	N	936	202	Wasley Creek
27	Queen Anne's	Wal_WUS4	38.9693680°N	76.1848967°W	R4SB5	Field Verified	N/A	N/A	N/A	N/A	N/A	02130505	N/A	N/A	I	N	338	169	Tributary to Wasley Creek
27	Queen Anne's	Wal_WET1	38.96879183°N	-76.18035791°W	PFO1C	Field Verified	Modified	•Hydrogen Sulfide Odor (C1) •Crayfish Burrows (C8) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (40%) •Carya laciniosa (20%) •Saururus cernuus (15%) •Phragmites australis (30%)	Published soil data indicates hydric soils	N	02130505	N	4,094	N/A	N/A	N/A	N/A	
27	Queen Anne's	Wal_WET2	38.96956694°N	-76.18015842°W	PEM5	Field Verified	Modified	•Surface Water of 1" (A1) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Phragmites australis (100%)	Published soil data indicates hydric soils	Y	02130505	N	28,408	N/A	N/A	N/A	N/A	
27	Queen Anne's	Wal_WET3	38.9694891°N	-76.18002911°W	PFO1	Field Verified	Modified	•Water-Stained Leaves (B9) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Acer rubrum (50%) •Phragmites australis (10%) •Smilax rotundifolia (35%)	Published soil data indicates hydric soils	N	02130505	Y	5,397	N/A	N/A	N/A	N/A	
27	Queen Anne's	Wal_WET30	38.97170631°N	-76.17989629°W	E2EM1P	Field Verified	Modified	•1" Surface Water(A1) •Water-Stained Leaves (B9) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2)	•Phragmites australis (100%)	Published soil data indicates hydric soils	Y	02130505	N	73,127	N/A	N/A	N/A	N/A	
27	Queen Anne's	Wal_WET30A	38.97170631°N	-76.17989629°W	E2EM1P	Field Verified	Modified	•1" Surface Water(A1) •Water-Stained Leaves (B9) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2)	•Phragmites australis (100%)	Published soil data indicates hydric soils	Y	02130505	N	10,611	N/A	N/A	N/A	N/A	
27 & 28	Queen Anne's	Wal_WET31	38.97243423°N	-76.17805411°W	E2EM1P	Field Verified	Modified	•Inundation Visible on Aerial Imagery (B7) •Water-Stained Leaves (B9) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2)	•Phragmites australis (100%)	Published soil data indicates hydric soils	Y	02130505	Y	95,358	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET4	38.97223282°N	-76.17659706°W	PEM2	Field Verified	Modified	•Surface Water (A1) •Water Marks (B1) •Surface Soil Cracks (B6) •Sparsely Vegetated Concave Surface (B8) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Typha angustifolia (5%)	Published soil data indicates hydric soils	N	02130505	Y	3,064	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET5	39.01720064°N	-76.40784743°W	PFO1C	Field Verified	Modified	•2" Surface Water (A1) •Sparsely Vegetated Concave Surface (B8) •Water Stained Leaves (B9) •Geomorphic Position (D2)	•Typha latifolia (20%)	Published soil data indicates hydric soils	N	02130505	Y	14,200	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET6	39.01945829°N	-76.40868025°W	PEM1C	Field Verified	Modified	•3" Surface Water (A1) •Hydrogen Sulfide Odor (C1) •Surface Soil Cracks (B6) •Geomorphic Position (D2)	•Phragmites australis (80%)	Published soil data indicates hydric soils	N	02130505	Y	10,347	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET7	39.01555366°N	-76.41058284°W	PEM1C	Field Verified	Modified	•Drift Deposits (B3) •Water Stained Leaves (B9) •Geomorphic Position (D2)	•Salix nigra sapling (5%) •Phragmites australis (90%) •Microstegium vimineum (30%)	Published soil data indicates hydric soils	N	02130505	Y	13,877	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET8	39.01679662°N	-76.41012284°W	PFO1C	Field Verified	Modified	•Water Marks (B1) •Water Stained Leaves (B9) •Geomorphic Position (D2) •Sphagnum moss (D8) (LRR T,U)	•Acer rubrum (10%) •Carex lupulina (5%) •Perilla frutescens (5%) •Smilax rotundifolia (5%)	Published soil data indicates hydric soils	Y	02130505	Y	99,251	N/A	N/A	N/A	N/A	Due to size of wetland, 2 sample plots completed; table illustrates southern plot
28	Queen Anne's	Wal_WET9	39.01650176°N	-76.4120161°W	PFO1C	Field Verified	Modified	•3" Surface Water (A1) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2)	•Acer rubrum (10%) •Liquidambar styraciflua (10%) •Nyssa sylvatica sapling (10%) •Salix nigra sapling (10%) •Carex amphibola (60%) •Glyceria grandis (20%)	Published soil data indicates hydric soils	N	02130505	Y	3,429	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET10	38.9728527°N	-76.17537647°W	PFO1C	Field Verified	Modified	•Water Stained Leaves (B9) •Geomorphic Position (D2)	•Liquidambar styraciflua sapling (30%) •Salix nigra (20%) •Phragmites australis (10%)	Published soil data indicates hydric soils	N	02130505	Y	173	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET11	38.97366463°N	-76.17490833°W	PEM1C	Field Verified	Modified	•4" Surface Water (A1) •Sparsely Vegetated Concave Surface (B8) •Geomorphic Position (D2)	No vegetation observed during delineation	Published soil data indicates hydric soils	N	02130505	Y	3,048	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET12	38.97544621°N	-76.17300738°W	PEM1C	Field Verified	Modified	•3" Surface Water (A1) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Scirpus cyperinus (40%) •Panicum paludosum (40%)	Published soil data indicates hydric soils	Y	02130505	N	81,324	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET13	38.9771972°N	-76.17168743°W	PFO1C	Field Verified	Modified	•Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Acer rubrum (10%) •Liquidambar styraciflua (30%) •Poa pratensis (10%) •Smilax rotundifolia (20%) •Clethra alnifolia (15%)	Published soil data indicates hydric soils	N	02130505	Y	7,755	N/A	N/A	N/A	N/A	

WETLAND LOCATION MAP SHEET NO.	COUNTY	SYSTEM LABEL	SAMPLE PLOT COORDINATES		WATERWAY OR WETLAND CLASSIFICATION	DELINEATION ACCURACY: FIELD DELINEATION VS APPROXIMATION	DELINEATION PARAMETERS: SOIL SAMPLE (ROUTINE) VS NO SOIL SAMPLE (MODIFIED)	WETLAND SAMPLE POINT HYDROLOGY CRITERIA	WETLAND SAMPLE POINT DOMINANT VEGETATION	WETLAND SAMPLE POINT HYDRIC SOIL (FIELD VERIFIED HYDRIC SOIL INDICATOR VS PUBLISHED DATA)	WETLAND FUNCTION & VALUE ASSESSMENT	DNR 8-DIGIT WATERSHED	WETLAND AREAS		STREAM USE DESIGNATION	WATERWAY AREAS			COMMENTS
			LATITUDE	LONGITUDE									THE WETLAND IS ENTIRELY IN THE STUDY AREA	SQFT INSIDE THE STUDY AREA		THE DELINEATED WATERWAY IS ENTIRELY IN THE STUDY AREA	SQFT IN THE STUDY AREA	LF IN THE STUDY AREA	
28	Queen Anne's	Wal_WET14	38.97728502°N	-76.17122194°W	PFO1C	Field Verified	Modified	•Water-Stained Leaves (B9) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2)	•Liquidambar styraciflua (40%) •Liquidambar styraciflua sapling (5%) •Smilax rotundifolia (10%) •Clethra alnifolia (5%)	Published soil data indicates hydric soils	N	02130505	Y	14,957	N/A	N/A	N/A	N/A	
28 & 29	Queen Anne's	Wal_WET25	38.97968526°N	-76.17294078°W	PFO1C	Field Verified	Modified	•Water-Stained Leaves (B9) •Moss Trim Line (B16) •Geomorphic Position (D2)	•Acer rubrum (25%) •Liquidambar styraciflua (20%) •Quercus palustris (20%) •Smilax rotundifolia (5%)	Published soil data indicates hydric soils	Y	02130505	N	334,528	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET26	38.97697923°N	-76.17433531°W	PFO1E	Field Verified	Modified	•Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Acer rubrum (20%) •Liquidambar styraciflua (10%) •Liquidambar styraciflua sapling (15%) •Quercus palustris (20%) •Juncus effusus (10%) •Smilax rotundifolia (15%)	Published soil data indicates hydric soils	Y	02130505	N	59,456	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET27	38.97696054°N	-76.17332431°W	PEM	Field Verified	Modified	•Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Juncus effusus (10%) •Typha latifolia (20%) •Smilax rotundifolia (15%)	Published soil data indicates hydric soils	N	02130505	Y	422	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET28	38.97597045°N	-76.17486772°W	PFO1C	Field Verified	Modified	•Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Acer rubrum (20%) •Liquidambar styraciflua (15%) •Phragmites australis (100%)	Published soil data indicates hydric soils	Y	02130505	Y	100,953	N/A	N/A	N/A	N/A	
28	Queen Anne's	Wal_WET29	38.97741235°N	-76.17352119°W	PFO1C	Field Verified	Modified	•Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Liquidambar styraciflua (30%) •Ilex opaca (15%) •Smilax rotundifolia (5%)	Published soil data indicates hydric soils	Y	02130505	N	24,831	N/A	N/A	N/A	N/A	
28 & 29	Queen Anne's	Wal_WET15	38.97825113°N	-76.17008336°W	PFO	Field Verified	Modified	•Sparsely Vegetated Concave Surface (B8) •Water-Stained Leaves (B9) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2)	No vegetation observed during delineation	Published soil data indicates hydric soils	N	02130503	Y	7,331	N/A	N/A	N/A	N/A	
29	Queen Anne's	Wye_WUS3	38.98058155°N	-76.1647063°W	R4SB	Field Verified	N/A	N/A	N/A	N/A	N/A	02130503	N/A	N/A	I	N	1,296	417	Tributary to Wye River
29	Queen Anne's	Wye_WET16	38.98072082°N	-76.16465209°W	PFO	Field Verified	Modified	•Water-Stained Leaves (B9) •Hydrogen Sulfide Odor (C1) •Crayfish Burrows (C8) •Geomorphic Position (D2)	•Acer rubrum (30%) •Liquidambar styraciflua (20%) •Quercus bicolor (20%) •Clethra alnifolia (5%) •Toxicodendron radicans (20%) •Smilax rotundifolia (10%)	Published soil data indicates hydric soils	Y	02130503	N	48,005	N/A	N/A	N/A	N/A	
29	Queen Anne's	Wye_WET23	38.98029307°N	-76.17032743°W	PFO1C	Field Verified	Routine	•Water-Stained Leaves (B9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Pinus taeda (40%) •Quercus phellos (40%) •Ilex opaca (5%) •Smilax rotundifolia (5%)	Field verified •Depleted Matrix (F3)	Y	02130503	Y	53,372	N/A	N/A	N/A	N/A	
29	Queen Anne's	Wye_WET24	38.98147075°N	-76.17043193°W	PFO1C	Field Verified	Modified	•Water-Stained Leaves (B9) •Hydrogen Sulfide Odor (C1) •Geomorphic Position (D2)	•Acer rubrum (25%) •Nyssa sylvatica (35%) •Pinus taeda (20%) •Lonicera maackii (10%) •Fagus grandifolia sapling (10%) •Ilex opaca (10%) •Smilax rotundifolia (15%)	Published soil data indicates hydric soils	Y	02130503	N	108,075	N/A	N/A	N/A	N/A	
29 & 30	Queen Anne's	Wye_WET22	38.98430585°N	-76.16132346°W	PEM	Field Verified	Routine	•4" Surface Water (A1) •Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Phragmites australis (100%)	Field Verified •Depleted Matrix (F3)	Y	02130503	Y	34,674	N/A	N/A	N/A	N/A	
30	Queen Anne's	Wye_WET17	38.98125111°N	-76.15906675°W	PFO	Field Verified	Modified	•Sparsely Vegetated Concave Surface (B8) •Water-Stained Leaves (B9) •Geomorphic Position (D2)	No vegetation observed during delineation	Published soil data indicates hydric soils	N	02130503	Y	3,040	N/A	N/A	N/A	N/A	
30	Queen Anne's	Wye_WET18	38.98157175°N	-76.15869858°W	PEM	Field Verified	Routine	•4" Surface Water (A1) •Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Acer rubrum sapling (5%) •Symphyotrichum pilosum (10%) •Typha angustifolia (15%)	Field Verified •Depleted Matrix (F3)	N	02130503	Y	5,336	N/A	N/A	N/A	N/A	roadside wet swale
30	Queen Anne's	Wye_WET19	38.98137853°N	-76.1582964°W	PFO	Field Verified	Modified	•Water-Stained Leaves (B9) •Geomorphic Position (D2)	•Acer rubrum (10%) •Smilax rotundifolia (15%)	Published soil data indicates hydric soils	N	02130503	Y	939	N/A	N/A	N/A	N/A	
30	Queen Anne's	Wye_WET20	38.98152791°N	-76.15848361°W	PEM	Field Verified	Routine	•Surface Water of 0.5" (A1) •Water-Stained Leaves (B9) •Geomorphic Position (D2) •FAC-Neutral Test (D5)	•Carex amphibola (10%) •Symphyotrichum pilosum (10%) •Typha angustifolia (20%) •Juncus effusus (10%)	Field Verified •Depleted Matrix (F3)	N	02130503	Y	2,571	N/A	N/A	N/A	N/A	roadside wet swale
30	Queen Anne's	Wye_WET21	38.98116061°N	-76.15818407°W	PFO	Field Verified	Modified	•Sparsely Vegetated Concave Surface (B8) •Water-Stained Leaves (B9) •Geomorphic Position (D2)	No vegetation observed during delineation	Published soil data indicates hydric soils	N	02130503	Y	450	N/A	N/A	N/A	N/A	

APPENDIX C PHOTOGRAPHIC LOGS

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: Southeast (Downstream) **Description:** SR_WUS1 (Severn River)		**Direction photograph taken:** Northwest (Upstream) **Description:** SR_WUS1 (Severn River)	





Refer to Map Sheet 1

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: Northwest **Description:** SR_WET1		**Direction photograph taken:** Southeast **Description:** SR_WET1/2/3_UPL	





Refer to Map Sheet 1

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: East **Description:** SR_WET2		**Direction photograph taken:** Southeast **Description:** SR_WET1/2/3_UPL	





Refer to Map Sheet 1

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/3/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: East **Description:** SR_WET3		**Direction photograph taken:** Southeast **Description:** SR_WET1/2/3_UPL	





Refer to Map Sheet 1

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/3/2023	**Photograph No.:** 02	**Date:** 10/3/2023
Direction photograph taken: South (Downstream) **Description:** SR_WUS2		**Direction photograph taken:** North (Upstream) **Description:** SR_WUS2	





Refer to Map Sheet 2a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/3/2023	**Photograph No.:** 02	**Date:** 10/3/2023
Direction photograph taken: West (Downstream) **Description:** SR_WUS3		**Direction photograph taken:** East (Upstream) **Description:** SR_WUS3	





Refer to Map Sheet 2a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/5/2023	**Photograph No.:** 02	**Date:** 10/5/2023
Direction photograph taken: Southwest (Downstream) **Description:** SR_WUS4		**Direction photograph taken:** Northeast (Upstream) **Description:** SR_WUS4	





Refer to Map Sheet 2a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/5/2023	**Photograph No.:** 02	**Date:** 10/5/2023
Direction photograph taken: South (Downstream) **Description:** SR_WUS5		**Direction photograph taken:** North (Upstream) **Description:** SR_WUS5	





Refer to Map Sheet 2 & 2a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/5/2023	**Photograph No.:** 02	**Date:** 10/5/2023
Direction photograph taken: Southeast **Description:** SR_WET4		**Direction photograph taken:** West **Description:** SR_WET4/5_UPL	





Refer to Map Sheet 2a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/5/2023	**Photograph No.:** 02	**Date:** 10/5/2023
Direction photograph taken: South **Description:** SR_WET5		**Direction photograph taken:** West **Description:** SR_WET4/5_UPL	





Refer to Map Sheet 2a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/10/2023

Direction photograph taken: North
Description: SR_WET6 (In-line SWM Pond)



Refer to Map Sheet 2 & 2a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/10/2023	**Photograph No.:** 02	**Date:** 10/10/2023
Direction photograph taken: South **Description:** SR_WET7		**Direction photograph taken:** South **Description:** SR_WET7_UPL	





Refer to Map Sheet 2 & 2a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/18/2023	**Photograph No.:** 02	**Date:** 10/18/2023
Direction photograph taken: Southeast (Downstream) **Description:** MC_WUS4		**Direction photograph taken:** West (Upstream) **Description:** MC_WUS4	





Refer to Map Sheet 2

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/18/2023	**Photograph No.:** 02	**Date:** 10/18/2023
Direction photograph taken: East **Description:** MC_WET3		**Direction photograph taken:** West **Description:** MC_WET3_UPL	





Refer to Map Sheet 2 & 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/10/2023	**Photograph No.:** 02	**Date:** 10/10/2023
Direction photograph taken: South (Downstream) **Description:** MC_WUS1 (Mill Creek – R2EM2 portion)		**Direction photograph taken:** North (Upstream) **Description:** MC_WUS1 (Mill Creek – R2EM2 portion)	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/10/2023	**Photograph No.:** 02	**Date:** 10/10/2023
Direction photograph taken: South (Downstream) **Description:** MC_WUS2 (Mill Creek – R2UB1/2 portion)		**Direction photograph taken:** North (Upstream) **Description:** MC_WUS2 (Mill Creek – R2UB1/2 portion)	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/10/2023	**Photograph No.:** 02	**Date:** 10/10/2023
Direction photograph taken: Southeast (Downstream) **Description:** MC_WUS3		**Direction photograph taken:** Northwest (Upstream) **Description:** MC_WUS3	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/18/2023	**Photograph No.:** 02	**Date:** 10/18/2023
Direction photograph taken: Northeast (Downstream) **Description:** MC_WUS5		**Direction photograph taken:** Southwest (Upstream) **Description:** MC_WUS5	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/18/2023	**Photograph No.:** 02	**Date:** 10/18/2023
Direction photograph taken: East (Downstream) **Description:** MC_WUS6		**Direction photograph taken:** West (Upstream) **Description:** MC_WUS6	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/18/2023	**Photograph No.:** 02	**Date:** 10/18/2023
Direction photograph taken: South (Downstream) **Description:** MC_WUS7		**Direction photograph taken:** North (Upstream) **Description:** MC_WUS7	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/10/2023	**Photograph No.:** 02	**Date:** 10/10/2023
Direction photograph taken: East **Description:** MC_WET1		**Direction photograph taken:** West **Description:** MC_WET1_UPL	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/10/2023	**Photograph No.:** 02	**Date:** 10/10/2023
Direction photograph taken: Southwest **Description:** MC_WET2		**Direction photograph taken:** Southwest **Description:** MC_WET2_UPL	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/18/2023	**Photograph No.:** 02	**Date:** 10/18/2023
Direction photograph taken: South **Description:** MC_WET4		**Direction photograph taken:** South **Description:** MC_WET4_UPL	





Refer to Map Sheet 3

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/13/2023	**Photograph No.:** 02	**Date: 10/19/2023**
Direction photograph taken: West (Upstream) **Description:** WhC_WUS1 (Whitehall Creek)		**Direction photograph taken:** East (Downstream) **Description:** WhC_WUS1 (Whitehall Creek)	





Refer to Map Sheet 4, 5, 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/13/2023	**Photograph No.:** 02	**Date:** 10/13/2023
Direction photograph taken: Southwest **Description:** WhC_WET1 .1		**Direction photograph taken:** South **Description:** WhC_WET1.2	
			
Photograph No.: 03	**Date: 10/13/2023**	**Photograph No.:** 04	**Date: 10/20/2023**
Direction photograph taken: South **Description:** WhC_WET1_UPL1		**Direction photograph taken:** Northeast **Description:** WhC_WET1/2/3_UPL	
			

Refer to Map Sheet 4, 5, 6a, 6b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 05	**Date:** 10/19/2023	**Photograph No.:**	**Date:**
Direction photograph taken: Southwest **Description:** WhC_WET1_UPL2		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 4, 5, 6a, 6b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/19/2023	**Photograph No.:** 02	**Date:** 10/19/2023
Direction photograph taken: West **Description:** WhC_WET2		**Direction photograph taken:** Northeast **Description:** WhC_WET1/2/3_UPL	





Refer to Map Sheet 4

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/19/2023	**Photograph No.:** 02	**Date:** 10/19/2023
Direction photograph taken: Northwest **Description:** WhC_WET3		**Direction photograph taken:** Northeast **Description:** WhC_WET1/2/3_UPL	





Refer to Map Sheet 4

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/13/2023	**Photograph No.:** 02	**Date:** 10/13/2023
Direction photograph taken: North (Upstream) **Description:** WhC_WUS2		**Direction photograph taken:** South (Downstream) **Description:** WhC_WUS2	





Refer to Map Sheet 4 & 5

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/19/23	**Photograph No.:** 02	**Date:** 10/19/23
Direction photograph taken: Northwest (Upstream) **Description:** WhC_WUS3		**Direction photograph taken:** South **Description:** WhC_WUS3	





Refer to Map Sheet 5

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/19/23	**Photograph No.:** 02	**Date:** 10/19/23
Direction photograph taken: North (Upstream) **Description:** WhC_WUS4		**Direction photograph taken:** South (Downstream) **Description:** WhC_WUS4	





Refer to Map Sheet 5

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01 **Date:** 10/19/23	**Photograph No.:** 02 **Date:** 10/19/23
Direction photograph taken: East (Upstream) **Description:** WhC_WUS5	**Direction photograph taken:** West (Downstream) **Description:** WhC_WUS5
	

Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/19/23	**Photograph No.:** 02	**Date:** 10/19/23
Direction photograph taken: East (Upstream) **Description:** WhC_WUS6		**Direction photograph taken:** West (Downstream) **Description:** WhC_WUS6	





Refer to Map Sheet 7

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/26/23	**Photograph No.:**	**Date:**
Direction photograph taken: North **Description:** WhC_WUS9		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/29/23	**Photograph No.:** 02	**Date:** 10/19/23
Direction photograph taken: East **Description:** WhC_WET4		**Direction photograph taken:** East **Description:** WhC_WET4/5_UPL	





Refer to Map Sheet 6a & 6b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/19/2023	**Photograph No.:** 02	**Date:** 10/19/2023
Direction photograph taken: West **Description:** WhC_WET5		**Direction photograph taken:** East **Description:** WhC_WET4/5_UPL	





Refer to Map Sheet 6a & 6b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel/Queen Anne's County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/26/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: Northeast **Description:** WhC_WET6		**Direction photograph taken:** East **Description:** WhC_WET6/7/8/10_UPL	





Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel/Queen Anne's County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/24/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: Northwest **Description:** WhC_WET7		**Direction photograph taken:** East **Description:** WhC_WET6/7/8/10_UPL	





Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel/Queen Anne's County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/24/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: Northwest **Description:** WhC_WET8		**Direction photograph taken:** East **Description:** WhC_WET6/7/8/10_UPL	





Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/24/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: Southeast **Description:** WhC_WET9		**Direction photograph taken:** Southwest **Description:** WhC_WET9_UPL	





Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel/Queen Anne's County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/24/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: West **Description:** WhC_WET10		**Direction photograph taken:** East **Description:** WhC_WET6/7/8/10_UPL	





Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel/Queen Anne's County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/26/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: West **Description:** WhC_WET11		**Direction photograph taken: East** **Description:** WhC_WET6/7/8/10/11_UPL	





Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/26/23	**Photograph No.:** 02	**Date:** 10/26/23
Direction photograph taken: West **Description:** WhC_WET13		**Direction photograph taken:** East **Description:** WhC_WET13_UPL	





Refer to Map Sheet 6a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/26/23	**Photograph No.:** 02	**Date:** 10/26/23
Direction photograph taken: West **Description:** WhC_WUS8		**Direction photograph taken:** East **Description:** WhC_WUS8	





Refer to Map Sheet 7

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/26/2023	**Photograph No.:** 02	**Date:**
Direction photograph taken: South **Description:** WhC_WET12		**Direction photograph taken:** **Description:**	



No upland plot was completed, WhC_WET12 is on a “Do not enter” property and was therefore assessed from the road.

Refer to Map Sheet 7

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel/Queen Anne's County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/26/2023	**Photograph No.:** 02	**Date: 11/28/2023**
Direction photograph taken: East **Description:** WhC_WET14		**Direction photograph taken: Southwest** **Description:** WhC_WET14_UPL	





CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/30/23	**Photograph No.:** 02	**Date:** 10/30/23
Direction photograph taken: North (Upstream) **Description:** MeC_WUS1		**Direction photograph taken:** South (Downstream) **Description:** MeC_WUS1	
			

Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/7/23	**Photograph No.:** 02	**Date:** 11/7/23
Direction photograph taken: Northwest (Upstream) **Description:** MeC_WUS2		**Direction photograph taken:** Southeast (Downstream) **Description:** MeC_WUS2	





Refer to Map Sheet 9 & 10a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/13/2023	**Photograph No.:** 02	**Date:** 11/13/2023
Direction photograph taken: North (Upstream) **Description:** MeC_WUS5		**Direction photograph taken:** South (Downstream) **Description:** MeC_WUS5	





Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/13/2023	**Photograph No.:** 02	**Date:** 11/13/2023
Direction photograph taken: East (Upstream) **Description:** MeC_WUS6		**Direction photograph taken:** West (Downstream) **Description:** MeC_WUS6	





Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/14/23	**Photograph No.:** 02	**Date:** 11/14/23
Direction photograph taken: West **Description:** MeC_WUS7		**Direction photograph taken:** East **Description:** MeC_WUS7	





Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel County

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/30/23	**Photograph No.:** 02	**Date:** 10/30/2023
Direction photograph taken: South **Description:** MeC_WET1		**Direction photograph taken:** South **Description:** MeC_WET1/2_UPL	





Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 10/30/23	**Photograph No.:** 02	**Date:** 10/30/2023
Direction photograph taken: South **Description:** MeC_WET2		**Direction photograph taken:** South **Description:** MeC_WET1/2_UPL	





Refer to Map Sheet 9

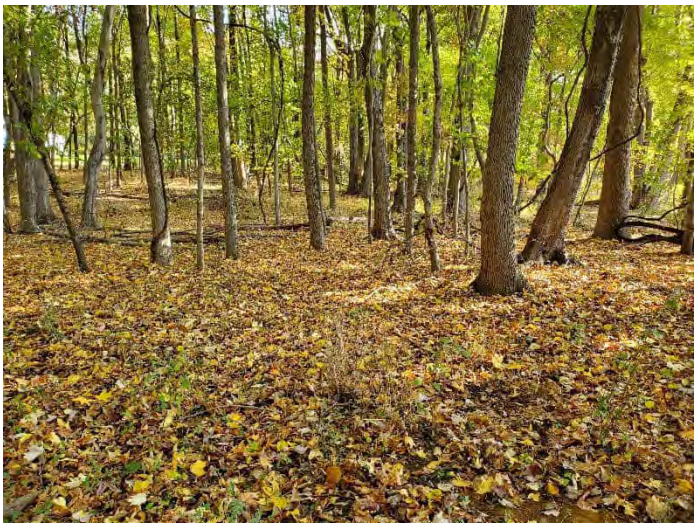
CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/1/23	**Photograph No.:** 02	**Date:** 11/1/2023
Direction photograph taken: Southeast **Description:** MeC_WET3		**Direction photograph taken:** East **Description:** MeC_WET3_UPL	





Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/1/23	**Photograph No.:** 02	**Date:** 11/1/23
Direction photograph taken: Northeast **Description:** MeC_WET4		**Direction photograph taken:** Northeast **Description:** MeC_WET4/5/6_UPL	





Refer to Map Sheet 9 & 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/2/23	**Photograph No.:** 02	**Date:** 11/2/2023
Direction photograph taken: Southwest **Description:** MeC_WET7		**Direction photograph taken:** Southwest **Description:** MeC_WET7/9_UPL	





Refer to Map Sheet 9, 10a, 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/2/23	**Photograph No.:** 02	**Date:**11/2/23
Direction photograph taken: South **Description:** MeC_WET9		**Direction photograph taken:** Southwest **Description:** MeC_WET7/9_UPL	





Refer to Map Sheet 9 & 10a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/7/23	**Photograph No.:** 02	**Date:** 11/7/23
Direction photograph taken: South **Description:** MeC_WET10		**Direction photograph taken:** West **Description:** MeC_WET10/11/12_UPL	





Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/7/23	**Photograph No.:** 02	**Date:** 11/7/23
Direction photograph taken: East **Description:** MeC_WET11		**Direction photograph taken:** West **Description:** MeC_WET10/11/12_UPL	





Refer to Map Sheet 9 & 10a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/7/23	**Photograph No.:** 02	**Date:** 11/7/23
Direction photograph taken: East **Description:** MeC_WET12		**Direction photograph taken:** West **Description:** MeC_WET10/11/12_UPL	





Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/13/23	**Photograph No.:** 02	**Date:** 11/13/2023
Direction photograph taken: Northeast **Description:** MeC_WET13		**Direction photograph taken:** Northwest **Description:** MeC_WET13_UPL	





Refer to Map Sheet 9

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/10/23	**Photograph No.:** 02	**Date:** 11/10/23
Direction photograph taken: West (Upstream) **Description:** MeC_WUS3		**Direction photograph taken:** East (Downstream) **Description:** MeC_WUS3	





Refer to Map Sheet 10a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/10/23	**Photograph No.:** 02	**Date:** 11/10/23
Direction photograph taken: West (Upstream) **Description:** MeC_WUS4		**Direction photograph taken:** East (Downstream) **Description:** MeC_WUS3	





CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/14/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: South **Description:** MeC_WET15		**Direction photograph taken:** South **Description:** MeC_WET14/15_UPL	





Refer to Map Sheet 10a & 11a & 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/15/2023	**Photograph No.:** 02	**Date:** 11/15/2023
Direction photograph taken: Southwest **Description:** MeC_WET17		**Direction photograph taken:** West **Description:** MeC_WET17/18/19_UPL	





Refer to Map Sheet 10a & 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/15/2023	**Photograph No.:** 02	**Date:** 11/15/2023
Direction photograph taken: East **Description:** MeC_WET18		**Direction photograph taken:** West **Description:** MeC_WET17/18/19_UPL	





Refer to Map Sheet 10a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/15/2023	**Photograph No.:** 02	**Date:** 11/15/2023
Direction photograph taken: East **Description:** MeC_WET19		**Direction photograph taken:** West **Description:** MeC_WET17/18/19_UPL	





Refer to Map Sheet 10a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/1/23	**Photograph No.:** 02	**Date:** 11/1/23
Direction photograph taken: Northeast **Description:** MeC_WET5		**Direction photograph taken:** Northeast **Description:** MeC_WET4/5/6_UPL	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/1/23	**Photograph No.:** 02	**Date:** 11/1/23
Direction photograph taken: Southwest **Description:** MeC_WET6		**Direction photograph taken:** Northeast **Description:** MeC_WET4/5/6_UPL	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 12/13/2023	**Photograph No.:** 02	**Date:** 12/13/2023
Direction photograph taken: North **Description:** MeC_WET8		**Direction photograph taken:** South **Description:** MeC_WET8_UPL	





Refer to Map Sheet 9 &10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/14/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: South **Description:** MeC_WET16		**Direction photograph taken:** South **Description:** MeC_WET16/31/32_UPL	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/20/2023	**Photograph No.:** 02	**Date:** 11/20/2023
Direction photograph taken: Southeast **Description:** MeC_WET23		**Direction photograph taken:** Northwest **Description:** MeC_WET23/24_UPL	





Refer to Map Sheet 10b & 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/20/2023	**Photograph No.:** 02	**Date:** 11/20/2023
Direction photograph taken: North **Description:** MeC_WET24		**Direction photograph taken:** Northwest **Description:** MeC_WET23/24_UPL	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: Southeast **Description:** MeC_WET25		**Direction photograph taken:** North **Description:** MeC_WET25/27/29_UPL	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: Southwest **Description:** MeC_WET27		**Direction photograph taken:** North **Description:** MeC_WET25/27/29_UPL	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/23	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: Northwest **Description:** MeC_WET29		**Direction photograph taken:** North **Description:** MeC_WET25/27/29_UPL	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/14/23	**Photograph No.:** 02	**Date:** 11/14/23
Direction photograph taken: Northwest **Description:** MeC_WUS8		**Direction photograph taken:** Southeast **Description:** MeC_WUS8	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/14/23	**Photograph No.:** 02	**Date:** 11/14/23
Direction photograph taken: Northwest **Description:** MeC_WUS9		**Direction photograph taken:** Southeast **Description:** MeC_WUS9	





Refer to Map Sheet 10b & 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/20/2023	**Photograph No.:** 02	**Date:** 11/20/2023
Direction photograph taken: Northwest (Upstream) **Description:** MeC_WUS10		**Direction photograph taken:** Southeast (Downstream) **Description:** MeC_WUS10	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/20/2023	**Photograph No.:** 02	**Date:** 11/20/2023
Direction photograph taken: North **Description:** MeC_WUS11		**Direction photograph taken:** South **Description:** MeC_WUS11	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/20/2023	**Photograph No.:** 02	**Date:**
Direction photograph taken: Southeast **Description:** MeC_WUS12 (Westinghouse Pond)		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 10b & 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: Northeast **Description:** MeC_WUS14		**Direction photograph taken:** Southwest **Description:** MeC_WUS14	





Refer to Map Sheet 10b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/14/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: East **Description:** MeC_WUS15		**Direction photograph taken:** South **Description:** MeC_WUS15	





Refer to Map Sheet 11a & 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/14/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: East **Description:** MeC_WET14		**Direction photograph taken:** South **Description:** MeC_WET14/15_UPL	





Refer to Map Sheet 11a & 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/15/2023	**Photograph No.:** 02	**Date:** 11/15/2023
Direction photograph taken: Northeast **Description:** MeC_WET20		**Direction photograph taken:** West **Description:** MeC_WET20/26/28_UPL	





Refer to Map Sheet 11a & 12

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/16/2023	**Photograph No.:** 02	**Date:** 11/16/2023
Direction photograph taken: North **Description:** MeC_WET21		**Direction photograph taken:** Northwest **Description:** MeC_WET21_UPL	





Refer to Map Sheet 11a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/16/2023	**Photograph No.:** 02	**Date:** 11/16/2023
Direction photograph taken: West **Description:** MeC_WET22		**Direction photograph taken:** West **Description:** MeC_WET22_UPL	





Refer to Map Sheet 11a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: Southwest **Description:** MeC_WET26		**Direction photograph taken:** East **Description:** MeC_WET20/26/28_UPL	





Refer to Map Sheet 11a & 12

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: North **Description:** MeC_WET30		**Direction photograph taken:** Southwest **Description:** MeC_WET30_UPL	





Refer to Map Sheet 11a

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: North **Description:** MeC_WET31		**Direction photograph taken:** South **Description:** MeC_WET16/31/32_UPL	





Refer to Map Sheet 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: West **Description:** MeC_WET32		**Direction photograph taken:** South **Description:** MeC_WET16/31/32_UPL	





Refer to Map Sheet 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/20/2023	**Photograph No.:** 02	**Date:** 11/20/2023
Direction photograph taken: West (Upstream) **Description:** MeC_WUS13		**Direction photograph taken:** East (Downstream) **Description:** MeC_WUS13	





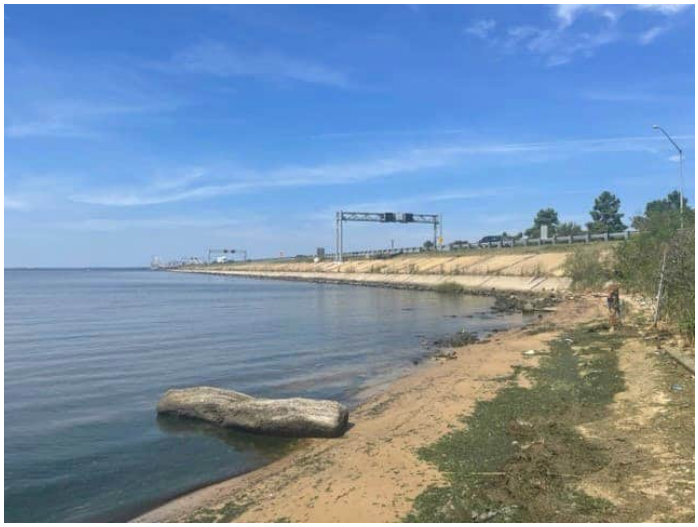
Refer to Map Sheet 10b & 11b

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/05/2023	**Photograph No.:** 02	**Date:** 9/05/2023
Direction photograph taken: North **Description:** KI_WUS1		**Direction photograph taken:** South **Description:** KI_WUS1	





Refer to Map Sheet 11b, 12, 13

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Anne Arundel

Photographing Team Company: CRI

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: West **Description:** MeC_WET28		**Direction photograph taken:** Northwest **Description:** MeC_WET20/26/28_UPL	





Refer to Map Sheet 12

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/05/2023
Direction photograph taken: East	
Description: KI_WET1 - WET	



Photograph No.: 02	**Date:** 9/05/2023
Direction photograph taken: East	
Description: KI_WET1 - WET	



Photograph No.: 03	**Date:** 9/05/2023
Direction photograph taken: Northwest	
Description: KI_WET1 – UPL	



Refer to Map Sheet 13

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 1/05/2024	**Photograph No.:**	**Date:**
Direction photograph taken: Aerial **Description:** KI_WET30 - WET		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 13

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/12/2023
Direction photograph taken: Southeast	
Description: KI_WET2 - WET	



Photograph No.: 02	**Date:** 9/12/2023
Direction photograph taken: Southwest	
Description: KI_WET2 - WET	



Photograph No.: 03	**Date:** 9/12/2023
Direction photograph taken: Northwest	
Description: KI_WET2 – UPL	



Refer to Map Sheet 14

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/12/2023
Direction photograph taken: Northeast	
Description: KI_WET3 - WET	



Photograph No.: 02	**Date:** 9/12/2023
Direction photograph taken: Southwest	
Description: KI_WET3 - WET	



Photograph No.: 03	**Date:** 9/12/2023
Direction photograph taken: Southwest	
Description: KI_WET3 – UPL	



Refer to Map Sheet 14

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/14/2023
Direction photograph taken: Southwest	
Description: KI_WET4 - WET	



Photograph No.: 02	**Date:** 9/14/2023
Direction photograph taken: East	
Description: KI_WET4 - WET	



Photograph No.: 03	**Date:** 9/14/2023
Direction photograph taken: Southeast	
Description: KI_WET4 – UPL	



Refer to Map Sheet 14

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/14/2023	**Photograph No.:** 02	**Date:** 9/14/2023
Direction photograph taken: Southeast **Description:** KI_WET5 - WET		**Direction photograph taken:** Northeast **Description:** KI_WET5 - UPL	





Refer to Map Sheet 14

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/14/2023
Direction photograph taken: Southwest	
Description: KI_WET6 - WET	



Photograph No.: 02	**Date:** 9/14/2023
Direction photograph taken: Northeast	
Description: KI_WET6 - WET	



Photograph No.: 03	**Date:** 9/14/2023
Direction photograph taken: Northwest	
Description: KI_WET6 – UPL	



Refer to Map Sheet 14

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 12/05/2023	**Photograph No.:** 02	**Date:** 12/05/2023
Direction photograph taken: North **Description:** KI_WET28 - WET		**Direction photograph taken:** East **Description:** KI_WET28 - UPL	





Refer to Map Sheet 14

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/05/2023	**Photograph No.:** 02	**Date:** 9/05/2023
Direction photograph taken: South **Description:** KI_WUS2		**Direction photograph taken:** North **Description:** KI_WUS2	





Refer to Map Sheet 15

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/20/2023
Direction photograph taken: West **Description:** KI_WET7A - WET	



Photograph No.: 02	**Date:** 9/20/2023
Direction photograph taken: East **Description:** KI_WET7A - WET	



Photograph No.: 03	**Date:** 9/20/2023
Direction photograph taken: South **Description:** KI_WET7B – WET	



Photograph No.: 04	**Date:** 9/20/2023
Direction photograph taken: South **Description:** KI_WET7B – UPL	



Refer to Map Sheet 15

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/20/2023
Direction photograph taken: East	
Description: KI_WET8 - WET	



Photograph No.: 02	**Date:** 9/20/2023
Direction photograph taken: Northwest	
Description: KI_WET8 - WET	



Photograph No.: 03	**Date:** 9/20/2023
Direction photograph taken: West	
Description: KI_WET8 – UPL	



Refer to Map Sheet 15

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 12/05/2023	**Photograph No.:** 02	**Date:** 12/05/2023
Direction photograph taken: West **Description:** KI_WET27 - WET		**Direction photograph taken:** East **Description:** KI_WET27 - UPL	





Refer to Map Sheet 15

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/30/2023	**Photograph No.:**	**Date:**
Direction photograph taken: South **Description:** KI_WUS3		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 16

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/21/2023	**Photograph No.:** 02	**Date:** 9/21/2023
Direction photograph taken: Northeast **Description:** KI_WET9 - WET		**Direction photograph taken:** Southeast **Description:** KI_WET9 - UPL	





Refer to Map Sheet 16

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/30/2023	**Photograph No.:** 02	**Date:** 11/30/2023
Direction photograph taken: Southwest **Description:** KI_WET26- WET		**Direction photograph taken:** North **Description:** KI_WET26- UPL	





Refer to Map Sheet 16

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 1/05/2024	**Photograph No.:** 02	**Date:** 1/05/2024
Direction photograph taken: South **Description:** KI_WET29 - WET		**Direction photograph taken:** East **Description:** KI_WET29 - UPL	





Refer to Map Sheet 16

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/30/2023	**Photograph No.:** 02	**Date:** 11/30/2023
Direction photograph taken: North **Description:** KI_WET25- WET		**Direction photograph taken:** North **Description:** KI_WET25- UPL	





Refer to Map Sheet 17

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:**	**Date:**
Direction photograph taken: North **Description:** KI_WUS6		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 18 & 19

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/14/2023	**Photograph No.:**	**Date:**
Direction photograph taken: Northwest **Description:** KI_WUS7		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 18 & 19

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: Northeast **Description:** KI_WET21- WET		**Direction photograph taken:** North **Description:** KI_WET21- UPL	





Refer to Map Sheet 18 & 19

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: Northwest **Description:** KI_WET22- WET		**Direction photograph taken:** North **Description:** KI_WET22- UPL	





Refer to Map Sheet 18

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: North **Description:** KI_WET23- WET		**Direction photograph taken:** North **Description:** KI_WET23- UPL	





Refer to Map Sheet 18

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/28/2023	**Photograph No.:** 02	**Date:** 11/28/2023
Direction photograph taken: South **Description:** KI_WET24- WET		**Direction photograph taken:** Northwest **Description:** KI_WET24- UPL	





Refer to Map Sheet 18

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/21/2023
Direction photograph taken: South **Description:** KI_WET10 - WET	



Photograph No.: 02	**Date:** 9/21/2023
Direction photograph taken: Southwest **Description:** KI_WET10 - WET	



Photograph No.: 03	**Date:** 9/21/2023
Direction photograph taken: Northeast **Description:** KI_WET10-UPL	



Refer to Map Sheet 19

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/26/2023	**Photograph No.:** 02	**Date:** 9/26/2023
Direction photograph taken: North **Description:** KI_WUS4		**Direction photograph taken:** South **Description:** KI_WUS4	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/26/2023	**Photograph No.:** 02	**Date:** 9/26/2023
Direction photograph taken: East **Description:** KI_WET11 - WET		**Direction photograph taken:** South **Description:** KI_WET11 - UPL	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/26/2023	**Photograph No.:** 02	**Date:** 9/26/2023
Direction photograph taken: East **Description:** KI_WET12 - WET		**Direction photograph taken:** North **Description:** KI_WET12 - WET	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: East **Description:** KI_WET13 - WET		**Direction photograph taken:** East **Description:** KI_WET13 - UPL	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: East **Description:** KI_WET14 - WET		**Direction photograph taken:** East **Description:** KI_WET14 - UPL	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/09/2023	**Photograph No.:** 02	**Date:** 11/09/2023
Direction photograph taken: North **Description:** KI_WET16- WET		**Direction photograph taken:** Northwest **Description:** KI_WET16- UPL	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/09/2023	**Photograph No.:** 02	**Date:** 11/09/2023
Direction photograph taken: Northwest **Description:** KI_WET17- WET		**Direction photograph taken:** Southwest **Description:** KI_WET17- UPL	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/14/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: Northeast **Description:** KI_WET18- WET		**Direction photograph taken:** East **Description:** KI_WET18- UPL	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/14/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: North **Description:** KI_WET19- WET		**Direction photograph taken:** Northeast **Description:** KI_WET19- UPL	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/14/2023	**Photograph No.:** 02	**Date:** 11/14/2023
Direction photograph taken: North **Description:** KI_WET20- WET		**Direction photograph taken:** East **Description:** KI_WET20- UPL	





Refer to Map Sheet 20

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: South **Description:** KI_WUS5		**Direction photograph taken:** North **Description:** KI_WUS5	





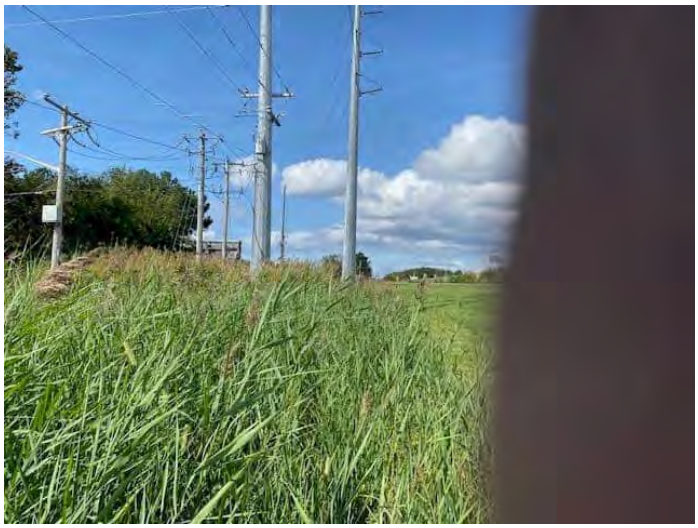
Refer to Map Sheet 21

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/05/2023	**Photograph No.:** 02	**Date:** 10/05/2023
Direction photograph taken: Northwest **Description:** KI_WET15 - WET		**Direction photograph taken:** Southeast **Description:** KI_WET15 - UPL	





Refer to Map Sheet 20 & 21

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/05/2023	**Photograph No.:** 02	**Date:** 10/05/2023
Direction photograph taken: Southwest **Description:** PB_WET1 - WET		**Direction photograph taken:** North **Description:** PB_WET1 - UPL	





Refer to Map Sheet 21 & 22

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/02/2023	**Photograph No.:** 02	**Date:** 11/02/2023
Direction photograph taken: West **Description:** PB_WET9- WET		**Direction photograph taken:** West **Description:** PB_WET9- UPL	





Refer to Map Sheet 21 & 22

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/02/2023	**Photograph No.:** 02	**Date:** 11/02/2023
Direction photograph taken: Southeast **Description:** PB_WET10- WET		**Direction photograph taken:** Southeast **Description:** PB_WET10- UPL	





Refer to Map Sheet 21

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/09/2023	**Photograph No.:** 02	**Date:** 11/09/2023
Direction photograph taken: West **Description:** PB_WET11- WET		**Direction photograph taken:** West **Description:** PB_WET11- UPL	





Refer to Map Sheet 21 & 22

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/5/2023	**Photograph No.:**	**Date:**
Direction photograph taken: South **Description:** PB_WUS 1		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 22

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/13/2023	**Photograph No.:**	**Date:**
Direction photograph taken: North **Description:** PB_WUS 2		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 22

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/17/2023	**Photograph No.:**	**Date:**
Direction photograph taken: North **Description:** PB_WUS 4		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 22

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/13/2023	**Photograph No.:** 02	**Date:** 10/13/2023
Direction photograph taken: Southeast **Description:** PB_WET5 - WET		**Direction photograph taken:** South **Description:** PB_WET5 - UPL	





Refer to Map Sheet 22 & 23

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 11/02/2023	**Photograph No.:** 02	**Date:** 11/02/2023
Direction photograph taken: Northwest **Description:** PB_WET8- WET		**Direction photograph taken:** Southeast **Description:** PB_WET8- UPL	





Refer to Map Sheet 22 & 23

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/13/2023	**Photograph No.:**	**Date:**
Direction photograph taken: South **Description:** PB_WUS 3		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 23

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/11/2023	**Photograph No.:** 02	**Date:** 10/11/2023
Direction photograph taken: Northeast **Description:** PB_WET2 - WET		**Direction photograph taken:** East **Description:** PB_WET2 - UPL	





Refer to Map Sheet 23

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/11/2023	**Photograph No.:** 02	**Date:** 10/11/2023
Direction photograph taken: East **Description:** PB_WET3 - WET		**Direction photograph taken:** North **Description:** PB_WET3 - UPL	





Refer to Map Sheet 23

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/11/2023	**Photograph No.:** 02	**Date:** 10/17/2023
Direction photograph taken: South **Description:** PB_WET4 - WET		**Direction photograph taken:** East **Description:** PB_WET4 - UPL	





Refer to Map Sheet 23

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/13/2023	**Photograph No.:** 02	**Date:** 10/13/2023
Direction photograph taken: South **Description:** PB_WET6 - WET		**Direction photograph taken:** South **Description:** PB_WET6 - UPL	





Refer to Map Sheet 23

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/17/2023	**Photograph No.:** 02	**Date:** 10/17/2023
Direction photograph taken: West **Description:** PB_WET7 - WET		**Direction photograph taken:** Northeast **Description:** PB_WET7 - UPL	





Refer to Map Sheet 23

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/26/2023	**Photograph No.:** 02	**Date:** 10/26/2023
Direction photograph taken: East **Description:** WC_WUS 3 (E1)		**Direction photograph taken:** West **Description:** WC_WUS 3 (E1)	





Refer to Map Sheet 24

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/24/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: Northeast **Description:** WC_WET4- WET		**Direction photograph taken:** Southwest **Description:** WC_WET4- UPL	





Refer to Map Sheet 24

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/26/2023	**Photograph No.:** 02	**Date:** 10/26/2023
Direction photograph taken: Northeast **Description:** WC_WET5- WET		**Direction photograph taken:** South **Description:** WC_WET5- UPL	





Refer to Map Sheet 24

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/26/2023	**Photograph No.:** 02	**Date:** 10/26/2023
Direction photograph taken: West **Description:** WC_WET6- WET		**Direction photograph taken:** East **Description:** WC_WET6- UPL	





Refer to Map Sheet 24

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/17/2023	**Photograph No.:**	**Date:**
Direction photograph taken: North **Description:** WC_WUS 1		**Direction photograph taken:** **Description:**	



Refer to Map Sheet 25 & 26

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/19/2023	**Photograph No.:** 02	**Date:** 10/19/2023
Direction photograph taken: East **Description:** WC_WET1- WET		**Direction photograph taken:** South **Description:** WC_WET1- UPL	





Refer to Map Sheet 25

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/19/2023	**Photograph No.:** 02	**Date:** 10/19/2023
Direction photograph taken: Southwest **Description:** WC_WUS 2		**Direction photograph taken:** West **Description:** WC_WUS 2	





Refer to Map Sheet 26

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/24/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: North **Description:** WC_WET2- WET		**Direction photograph taken:** West **Description:** WC_WET2- UPL	





Refer to Map Sheet 25 & 26

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 10/24/2023	**Photograph No.:** 02	**Date:** 10/24/2023
Direction photograph taken: Northeast **Description:** WC_WET3- WET		**Direction photograph taken:** East **Description:** WC_WET3- UPL	





Refer to Map Sheet 26

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: CEM

Photograph No.: 01	**Date:** 01/05/2024	**Photograph No.:** 02	**Date:** 1/5/2024
Direction photograph taken: West **Description:** WC_WET7- WET		**Direction photograph taken:** East **Description:** WC_WET7- UPL	





Refer to Map Sheet 26

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 9/19/2023	**Photograph No.:** 02	**Date:** 9/19/2023
Direction photograph taken: East **Description:** Wal_WUS1 looking downstream		**Direction photograph taken:** South **Description:** Wal_WUS1 looking upstream	
			
Photograph No.: 03	**Date:** 9/19/2023	**Photograph No.:** 04	**Date:** 9/19/2023
Direction photograph taken: East **Description:** Wal_WUS1 looking at WUS		**Direction photograph taken:** East **Description:** Wal_WUS1 looking upstream	
			

Refer to Map Sheet 27

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 11/7/2023	**Photograph No.:** 02 **Date:** 11/7/2023
Direction photograph taken: North **Description:** Wal_WUS1-A looking downstream	**Direction photograph taken:** South **Description:** Wal_WUS1-A looking upstream
	
Photograph No.: 03 **Date:** 11/7/2023	**Photograph No.:** 04 **Date:** 11/7/2023
Direction photograph taken: North **Description:** Wal_WUS1-A looking at WUS Vegetation	**Direction photograph taken:** West **Description:** Wal_WUS1-A looking a leaf debris
	

Refer to Map Sheet 27

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 11/7/2023	**Photograph No.:** 02 **Date:** 11/7/2023
Direction photograph taken: North **Description:** Wal_WUS 4 looking downstream	**Direction photograph taken:** South **Description:** Wal_WUS 4 looking upstream
	
Photograph No.: 03 **Date:** 11/7/2023	**Photograph No.:** 04 **Date:** 11/7/2023
Direction photograph taken: Northeast **Description:** Wal_WUS 4 looking at downstream erosion	**Direction photograph taken:** Northwest **Description:** Wal_WUS 4 looking at downstream erosion
	

Refer to Map Sheet 27

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

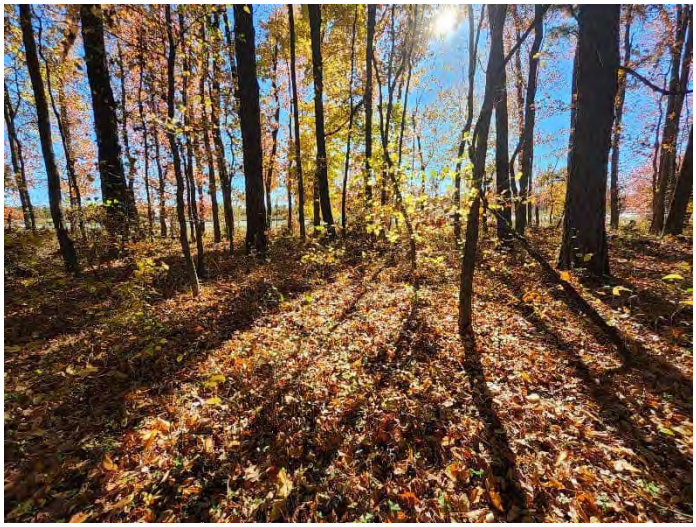
Photograph No.: 05 **Date:** 11/9/2023	**Photograph No.:** 06 **Date:** 11/9/2023
Direction photograph taken: North **Description:** Wal_WUS 4A looking downstream	**Direction photograph taken:** South **Description:** Wal_WUS 4A looking upstream
	
Photograph No.: 07 **Date:** 11/9/2023	**Photograph No.:** 08 **Date:** 11/9/2023
Direction photograph taken: Southwest **Description:** Wal_WUS 4A looking at upstream erosion	**Direction photograph taken:** Northwest **Description:** Wal_WUS 4A leaf debris.
	

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 05	**Date:** 11/14/2023	**Photograph No.:** 06	**Date:** 11/14/2023
Direction photograph taken: South **Description:** Upland looking towards road.		**Direction photograph taken:** East **Description:** Looking along upland.	





Refer to Map Sheet 27

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 9/19/2023	**Photograph No.:** 02 **Date:** 9/19/2023
Direction photograph taken: East **Description:** Wal_WET1_Wetland Crayfish burrow	**Direction photograph taken:** East **Description:** Wal_WET1_Wetland
	
Photograph No.: 03 **Date:** 9/19/2023	**Photograph No.:** 04 **Date:** 9/19/2023
Direction photograph taken: North **Description:** Wal_WET1_Wetland looking towards the road	**Direction photograph taken:** South **Description:** Wal_WET1_Wetland away from road
	

Refer to Map Sheet 27

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 5	**Date:** 9/19/2023	**Photograph No.:** 6	**Date:** 9/19/2023
Direction photograph taken: South **Description:** Wal_WET 1 Upland		**Direction photograph taken:** West **Description:** Wal_WET 1 Upland	
			

Refer to Map Sheet 27

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 9/19/2023	**Photograph No.:** 02 **Date:** 9/19/2023
Direction photograph taken: West **Description:** Wal_WET2 parallel to road	**Direction photograph taken:** North **Description:** Wal_WET2 edge of WET1 and WET2
	
Photograph No.: 03 **Date:** 9/19/2023	**Photograph No.:** 04 **Date:** 9/19/2023
Direction photograph taken: **Description:** Wal_WET2 standing water	**Direction photograph taken:** **Description:** Wal_WET2 organic top soil layer
	

Refer to Map Sheet 27

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 9/28/2023	**Photograph No.:** 02 **Date:** 9/28/2023
Direction photograph taken: West **Description:** Wal_WET3 into the PFO wetland	**Direction photograph taken:** West **Description:** Wal_WET3 Saturated soil and decaying organics.
	
Photograph No.: 03 **Date:** 9/28/2023	**Photograph No.:** 04 **Date:** 9/28/2023
Direction photograph taken: South **Description:** Wal_WET3 Typical PFO Wetland 3.	**Direction photograph taken:** South **Description:** Along boundary of Wal_WET2 and Wal_WET3.
	

Refer to Map Sheet 27

		Project Location:Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 5	**Date:** 9/19/2023	**Photograph No.:** 6	**Date:** 9/19/2023
Direction photograph taken: South **Description:** Upland for Wal_WET2 and Wal_WET3		**Direction photograph taken:** East **Description:** Upland for Wal_WET2 and Wal_WET3	
			

Refer to Map Sheet 27

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 11/14/2023	**Photograph No.:** 02 **Date:** 11/14/2023
Direction photograph taken: North **Description:** Wal_WET30 looking into wetland	**Direction photograph taken:** dawn **Description:** Wal_WET30 standing water.
	
Photograph No.: 03 **Date:** 11/14/2023	**Photograph No.:** 04 **Date:** 11/14/2023
Direction photograph taken: **Description:**Wal_WET30 looking west along wetland edge.	**Direction photograph taken:** East **Description:** Wal_WET30 looking at wetland from private road.
	

Refer to Map Sheet 27

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 11/14/2023
Direction photograph taken: West **Description:** Wal_WET31 looking from private road.	



Photograph No.: 02	**Date:** 11/14/2023
Direction photograph taken: South **Description:** Looking into wetland from sample point.	



Photograph No.: 03	**Date:** 11/14/2023
Direction photograph taken: North **Description:** Looking along North edge of wetland	



Photograph No.: 04	**Date:** 11/14/2023
Direction photograph taken: South **Description:** Looking along East edge of wetland	



Refer to Map Sheet 27

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 5	**Date:** 9/21/2023	**Photograph No.:** 6	**Date:** 9/21/2023
Direction photograph taken: Southeast **Description:** Wal_WET4 Upland		**Direction photograph taken:** Southwest **Description:** Wal_WET4 Upland	
			

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 9/21/2023	**Photograph No.:** 02	**Date:** 9/21/2023
Direction photograph taken: West **Description:** Wal_WET4 soil cracking		**Direction photograph taken:** West **Description:** Wal_WET4 standing water	





Photograph No.: 03	**Date:** 9/21/2023	**Photograph No.:** 04	**Date:** 9/21/2023
Direction photograph taken: South **Description:** Wal_WET4 facing upland point		**Direction photograph taken:** West **Description:** Wal_WET4 cattails	





Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/05/2023	**Photograph No.:** 02 **Date:** 10/05/2023
Direction photograph taken: South **Description:** Wal_WET5 standing water	**Direction photograph taken:** West **Description:** Wal_WET5 cattails
	
Photograph No.: 03 **Date:** 10/05/2023	**Photograph No.:** 04 **Date:** 10/05/2023
Direction photograph taken: East **Description:** Wal_WET5 sparsely vegetated	**Direction photograph taken:** South east **Description:** Wal_WET5 looking towards East end
	

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Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: West **Description:** Wal_WET6 looking into the wetland		**Direction photograph taken:** East **Description:** Wal_WET6 vegetation	
			
Photograph No.: 03	**Date:** 9/28/2023	**Photograph No.:** 04	**Date:** 9/28/2023
Direction photograph taken: West **Description:** Wal_WET6 standing water		**Direction photograph taken:** South east **Description:** Wal_WET6 adjacent to access road	
			

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 05	**Date:** 10/5/2023	**Photograph No.:** 06	**Date:** 10/5/2023
Direction photograph taken: East **Description:** Upland for Wal_WET6 and Wal_WET11		**Direction photograph taken:** Southwest **Description:** Upland for Wal_WET6 and Wal_WET11	
			

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 9/28/2023	**Photograph No.:** 02 **Date:** 9/28/2023
Direction photograph taken: North **Description:** Wal_WET7 looking into wetland from sample point	**Direction photograph taken:** Northwest **Description:** Wal_WET7 edge of wetland
	
Photograph No.: 03 **Date:** 9/28/2023	**Photograph No.:** 04 **Date:** 9/28/2023
Direction photograph taken: East **Description:** Wal_WET7 Sample point	**Direction photograph taken:** South east **Description:** Wal_WET7 Boundary between Wal_WET7 and Wal_WET8
	

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: West **Description:** Moss growing in wetland		**Direction photograph taken:** East **Description:** Water stained leaves	





Photograph No.: 03	**Date:** 9/28/2023	**Photograph No.:** 04	**Date:** 9/28/2023
Direction photograph taken: East **Description:** Wal_WET8		**Direction photograph taken:** South **Description:** Wal_WET8 vegetation	





Refer to Map Sheet 28

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 05	**Date:** 10/10/2023	**Photograph No.:** 06	**Date:** 10/10/2023
Direction photograph taken: Southwest **Description:** Expanded extent of Wal_Wetland 8		**Direction photograph taken:** Northwest **Description:** Expanded extent of Wal_Wetland 8	
			

Refer to Map Sheet 28

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 05	**Date:** 10/05/2023	**Photograph No.:** 06	**Date:** 10/05/2023
Direction photograph taken: 05 **Description:** Upland for Wal_WET5, 7, and 8		**Direction photograph taken:** 06 **Description:** Upland for Wal_WET5, 7, and 8	
			

Refer to Map Sheet 28

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 05	**Date:** 10/17/2023	**Photograph No.:** 06	**Date:** 10/17/2023
Direction photograph taken: North **Description:** Upland for Wal_WET5, 7, and 8		**Direction photograph taken:** South **Description:** Upland for Wal_WET5, 7, and 8	
			

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 9/28/2023	**Photograph No.:** 02	**Date:** 9/28/2023
Direction photograph taken: South **Description:** Wal_WET9 looking into the wetland		**Direction photograph taken:** West **Description:** Wal_WET9 standing water	
			
Photograph No.: 03	**Date:** 9/28/2023	**Photograph No.:** 04	**Date:** 9/28/2023
Direction photograph taken: East **Description:** Wal_WET9 Boundary with Wal_WET6		**Direction photograph taken:** South east **Description:** Wal_WET9	
			

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/5/2023	**Photograph No.:** 02	**Date:** 10/5/2023
Direction photograph taken: Southeast **Description:** Wal_WET10 looking at wetland		**Direction photograph taken:** Eastwest **Description:** Wal_WET10 looking at wetland	
			
Photograph No.: 03	**Date:** 10/5/2023	**Photograph No.:** 04	**Date:** 10/5/2023
Direction photograph taken: West **Description:** Wal_WET10 looking out of the wetland into the woods		**Direction photograph taken:** North **Description:** Wal_WET10 looking into the wetland	
			

Refer to Map Sheet 28

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 5	**Date:** 10/5/2023	**Photograph No.:** 6	**Date:** 10/5/2023
Direction photograph taken: Looking North **Description:** Wal_Upland 10		**Direction photograph taken:** Looking South **Description:** Wal_Upland 10	
			

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/5/2023	**Photograph No.:** 02 **Date:** 10/5/2023
Direction photograph taken: North **Description:** Wal_WET11 standing water	**Direction photograph taken:** East **Description:** Wal_WET11
	
Photograph No.: 03 **Date:** 10/5/2023	**Photograph No.:** 04 **Date:** 10/5/2023
Direction photograph taken: West **Description:** looking along Wal_WET11	**Direction photograph taken:** Southeast **Description:** Wal_WET11 "Oil Sheen" starting to appear
	

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/10/2023	**Photograph No.:** 02 **Date:** 10/10/2023
Direction photograph taken: East **Description:** Wal_Wet12 standing water	**Direction photograph taken:** West **Description:** Wal_WET12
	
Photograph No.: 03 **Date:** 10/10/2023	**Photograph No.:** 04 **Date:** 10/10/2023
Direction photograph taken: East **Description:** Wal_WET12 woolgrass	**Direction photograph taken:** South east **Description:** Wal_WET12 Hairy white oldfield aster
	

Refer to Map Sheet 28

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 05	**Date:** 10/10/2023	**Photograph No.:** 06	**Date:** 10/0102023
Direction photograph taken: South **Description:** Upland for Wal_WET12		**Direction photograph taken:** East **Description:** Upland for Wal_WET12	
			

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/10/2023	**Photograph No.:** 02 **Date:** 10/10/2023
Direction photograph taken: East **Description:** Wal_WET13 edge	**Direction photograph taken:** South **Description:** Wal_WET13 edge
	
Photograph No.: 03 **Date:** 10/10/2023	**Photograph No.:** 04 **Date:** 10/10/2023
Direction photograph taken: South **Description:** Wal_WET13 Water stained leaves	**Direction photograph taken:** South east **Description:** Upland Wal_WET13 and Wal_WET14 looking east
	

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/05/2023	**Photograph No.:** 02	**Date:** 10/05/2023
Direction photograph taken: West **Description:** Wal_Wet14 looking west		**Direction photograph taken:** East **Description:** Wal_WET14 looking east	
			
Photograph No.: 03	**Date:** 10/05/2023	**Photograph No.:** 04	**Date:** 10/05/2023
Direction photograph taken: North **Description:** Wal_WET14 looking north		**Direction photograph taken:** South **Description:** Wal_WET14 looking south	
			

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/31/2023
Direction photograph taken:	
Description: Water stained leaves Wal_WET25	



Photograph No.: 02	**Date:** 10/31/2023
Direction photograph taken: South	
Description: Wal_WET25 looking towards on-ramp	



Photograph No.: 03	**Date:** 10/31/2023
Direction photograph taken: North	
Description: Wal_WET25 looking into wetland	



Photograph No.: 04	**Date:** 10/31/2023
Direction photograph taken: North	
Description: Moss in wetland	



Refer to Map Sheet 28 & 29

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 05	**Date:** 10/31/2023	**Photograph No.:** 06	**Date:** 10/31/2023
Direction photograph taken: South **Description:** Wal_WET25 upland vegetation		**Direction photograph taken:** North **Description:** Wal_WET25 upland vegetation	





Refer to Map Sheet 28 & 29

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/31/2023	**Photograph No.:** 02 **Date:** 10/31/2023
Direction photograph taken: Down **Description:** Wal_WET26 soil and water stained leaves	**Direction photograph taken:** West **Description:** Wal_WET26
	
Photograph No.: 03 **Date:** 10/31/2023	**Photograph No.:** 04 **Date:** 10/31/2023
Direction photograph taken: South **Description:** Wal_WET26 looking towards road	**Direction photograph taken:** North **Description:** Wal_WET26 Upland
	

Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/31/2023
Direction photograph taken: West	
Description: Wal_WET27 looking towards WB lanes	



Photograph No.: 02	**Date:** 10/31/2023
Direction photograph taken: Southwest	
Description: Wal_WET27 looking along WB lanes	



Photograph No.: 03	**Date:** 10/31/2023
Direction photograph taken: Southeast	
Description: Wal_WET27 looking at roadside ditch	



Photograph No.: 04	**Date:** 10/31/2023
Direction photograph taken: Southwest	
Description: Wal_WET27 Wetland plants	



Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 11/02/2023	**Photograph No.:** 02	**Date:** 11/02/2023
Direction photograph taken: Down **Description:** Wal_WET28 soil and leaves		**Direction photograph taken:** East **Description:** Wal_WET28 looking into wetland	





Photograph No.: 03	**Date:** 11/02/2023	**Photograph No.:** 04	**Date:** 11/02/2023
Direction photograph taken: North **Description:** Wal_WET28 looking edge of investigation area		**Direction photograph taken:** West **Description:** Wal_WET28 Upland	





Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 11/2/2023	**Photograph No.:** 02	**Date:** 11/2/2023
Direction photograph taken: North **Description:** Wal_WET29 looking towards WB lanes		**Direction photograph taken:** **Description:** Water stained leaves	
			
Photograph No.: 03	**Date:** 11/2/2023	**Photograph No.:** 04	**Date:** 11/2/2023
Direction photograph taken: North **Description:** Looking at Wal_WET29		**Direction photograph taken:** South **Description:** Looking at Wal_WET29	
			

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 05	**Date:** 11/2/2023	**Photograph No.:** 06	**Date:** 11/2/2023
Direction photograph taken: North **Description:** Wal_29 Upland vegetation		**Direction photograph taken:** **Description:** Wal_29 Upland	





Refer to Map Sheet 28

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/05/2023	**Photograph No.:** 02 **Date:** 10/05/2023
Direction photograph taken: East **Description:** Wal_Wet15 Water stained leaves	**Direction photograph taken:** West **Description:** Wal_WET15 Saturated soil
	
Photograph No.: 03 **Date:** 10/05/2023	**Photograph No.:** 04 **Date:** 10/05/2023
Direction photograph taken: Southeast **Description:** Wal_WET15 sparsely vegetated	**Direction photograph taken:** Southeast **Description:** Wal_WET15 looking towards East end
	

Refer to Map Sheet 28 & 29

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 05	**Date:** 10/05/2023	**Photograph No.:** 06	**Date:** 10/05/2023
Direction photograph taken: 05 **Description:** Upland for Wal_WET15		**Direction photograph taken:** 06 **Description:** Upland for Wal_WET15	
			

Refer to Map Sheet 28 & 29

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/17/2023	**Photograph No.:** 02 **Date:** 10/17/2023
Direction photograph taken: West **Description:** Wye_WUS 3 Upstream	**Direction photograph taken:** East **Description:** Wye_WUS 3 Downstream
	
Photograph No.: 03 **Date:** 10/17/2023	**Photograph No.:** 04 **Date:** 10/17/2023
Direction photograph taken: East **Description:** Crayfish Burrow	**Direction photograph taken:** South **Description:** Frogs/Tadpoles
	

Refer to Map Sheet 29

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/11/2023	**Photograph No.:** 02 **Date:** 10/11/2023
Direction photograph taken: Northeast **Description:** Wye_Wet16 vegetation	**Direction photograph taken:** West **Description:** Looking at Wye_wet16
	
Photograph No.: 03 **Date:** 10/11/2023	**Photograph No.:** 04 **Date:** 10/11/2023
Direction photograph taken: East **Description:** Wye_WET16 vegetation	**Direction photograph taken:** South **Description:** Wye_Wet16 adjacent to stream
	

Refer to Map Sheet 29

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/26/2023	**Photograph No.:** 02 **Date:** 10/26/2023
Direction photograph taken: South **Description:** Wye_WET23 looking towards RT301 WB	**Direction photograph taken:** North **Description:** Wye_WET23 looking towards on-ramp
	
Photograph No.: 03 **Date:** 10/26/2023	**Photograph No.:** 04 **Date:** 10/26/2023
Direction photograph taken: East **Description:** Wye_WET23 looking into wetland from west side.	**Direction photograph taken:** West **Description:** Wye_WET23 Upland looking towards road
	

Refer to Map Sheet 29

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/31/2023	**Photograph No.:** 02	**Date:** 10/31/2023
Direction photograph taken: South **Description:** Wye_WET24 looking towards RT301 WB		**Direction photograph taken:** North **Description:** Wye_WET 24	
			
Photograph No.: 03	**Date:** 10/31/2023	**Photograph No.:** 04	**Date:** 10/31/2023
Direction photograph taken: **Description:** Water stained leaves		**Direction photograph taken:** West **Description:** Wye_WET24 looking at vegetation	
			

Refer to Map Sheet 29

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 05	**Date:** 10/31/2023	**Photograph No.:** 06	**Date:** 10/31/2023
Direction photograph taken: South **Description:** Wye_Upland 24		**Direction photograph taken:** North **Description:** Wye_Upland 24	





Refer to Map Sheet 29

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01 **Date:** 10/18/2023	**Photograph No.:** 02 **Date:** 10/18/2023
Direction photograph taken: West **Description:** Wye_WET22 vegetation	**Direction photograph taken:** East **Description:** Standing water
	
Photograph No.: 03 **Date:** 10/18/2023	**Photograph No.:** 04 **Date:** 10/18/2023
Direction photograph taken: South **Description:** Wye_WET 22 vegetation	**Direction photograph taken:** West **Description:** Wye_WET 22 vegetation
	

Refer to Map Sheet 29 & 30

		Project Location: Queen Anne's County	
		Photographing Team Company: MERCADO	
Photograph No.: 05	**Date:** 10/18/2023	**Photograph No.:** 06	**Date:** 10/18/2023
Direction photograph taken: 05 **Description:** Wye_Upland 22		**Direction photograph taken:** 06 **Description:** Wye_Upland 22	
			

Refer to Map Sheet 29 & 30

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/17/2023
Direction photograph taken: Southwest **Description:** Wye_WET17 vegetation away from road	



Photograph No.: 02	**Date:** 10/17/2023
Direction photograph taken: Northeast **Description:** Looking along Wye_WET17 towards road	



Photograph No.: 03	**Date:** 10/17/2023
Direction photograph taken: West **Description:** Wye_WET17 Upland along forest edge	



Photograph No.: 04	**Date:** 10/17/2023
Direction photograph taken: South **Description:** Wye_WET17 Looking into upland	



Refer to Map Sheet 30

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/17/2023
Direction photograph taken: Northeast	
Description: Wye_Wet18 vegetation	



Photograph No.: 02	**Date:** 10/17/2023
Direction photograph taken: East	
Description: Looking at Wye_wet 18 mulch	



Photograph No.: 03	**Date:** 10/18/2023
Direction photograph taken: West	
Description: Wye_WET18 mulch	



Photograph No.: 04	**Date:** 10/18/2023
Direction photograph taken: South	
Description: Wye_Wet 18 vegetation	



Refer to Map Sheet 30

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/17/2023
Direction photograph taken: North	
Description: Wye_WET19 towards road	



Photograph No.: 02	**Date:** 10/17/2023
Direction photograph taken: East	
Description: Looking at Wye_WET19	



Photograph No.: 03	**Date:** 10/17/2023
Direction photograph taken: East	
Description: Looking at Wye_WET19	



Photograph No.: 04	**Date:** 10/17/2023
Direction photograph taken: North	
Description: Looking at Wye_Upland 19 towards the road	



Refer to Map Sheet 30

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/17/2023
Direction photograph taken: South	
Description: Wye_WET20 from road	



Photograph No.: 02	**Date:** 10/17/2023
Direction photograph taken: South	
Description: View of area of standing water	



Photograph No.: 03	**Date:** 10/18/2023
Direction photograph taken: North	
Description: View towards road viewing Wye_WET20	



Photograph No.: 04	**Date:** 10/18/2023
Direction photograph taken: East	
Description: View along road looking at Wye_WET20	



Refer to Map Sheet 30

CHESAPEAKE BAY CROSSING TIER 2 STUDY PHOTOGRAPHIC LOG

Project Location: Queen Anne's County

Photographing Team Company: MERCADO

Photograph No.: 01	**Date:** 10/18/2023	**Photograph No.:** 02	**Date:** 10/18/2023
Direction photograph taken: Northeast **Description:** Wye_WET21		**Direction photograph taken:** East **Description:** Wye_WET21 water stained leaves	





Photograph No.: 03	**Date:** 10/18/2023	**Photograph No.:** 04	**Date:** 10/18/2023
Direction photograph taken: East **Description:** Looking at Wye_WET21		**Direction photograph taken:** West **Description:** Looking at Wye_WET21	





Refer to Map Sheet 30

APPENDIX D WETLAND FUNCTION AND VALUE FORMS

Wetland Function-Value Evaluation Form

Total area of wetland 0.73 ac Human made? Yes Is wetland part of a wildlife corridor? ✓ or a "habitat island"? _____

Adjacent land use forest, highway, residential Distance to nearest roadway or other development 50'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present ~50'

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. SR wet 6/7

Latitude 39.0120742 Longitude -76.4911526

Prepared by: DRS, MW Date 10/10/23

Wetland Impact:
Type — Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,4,5,7,10,13,15	✓	discharge through riser
Floodflow Alteration	✓		2,3,4,5,6,7,8,9,10,13,15,16,17,18	✓	ponded portion
Fish and Shellfish Habitat	✓		4,8,16,17		potential for fish unknown
Sediment/Toxicant Retention	✓		2,4,5,10,12,14,		
Nutrient Removal	✓		2,3,4,5,7,8,9,10,11,12,13,14	✓	
Production Export	✓		1,2,4,5,7,10,13,		
Sediment/Shoreline Stabilization	✓		1,2,3,4,6,7,9,15	✓	half of shoreline >10'
Wildlife Habitat	✓		5,6,7,8,13,17,18,20,21		deer tracks, beaver
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage	✓		7,19,21,23		connects to Severn River
Visual Quality/Aesthetics	✓		6		
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 3.6ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, highway Distance to nearest roadway or other development 75'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 75'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MC-WET3

Latitude 39.016939 Longitude -76.48407

Prepared by: EB, GS Date 10/17/23

Wetland Impact:

Type _____ Area _____

Evaluation based on:

Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,4,5,7,9,13,15	✓	Well connected floodplain to watercourse, also receives hydrology from toe-of-slope seeps
Floodflow Alteration	✓		1,2,3,4,5,6,7,8,9,10,13,14,18	✓	Wetland well connected to streams, spans entire valley + can hold floodwaters.
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,3,4,5,9,10,12,13,16	✓	Dense understory and herb layers, stream + drainage patterns have slow flow. Receives run off from roads + nearby commercial areas. Receives lawn run-off, landscaped areas upslope as well
Nutrient Removal	✓		1,3,4,5,7,8,9,10,11	✓	
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		3,5,6,7,8,9,11,13,15,17,19,20	✓	Large wetland largely untouched by development + connected via stream + wooded uplands to other wetlands - >1/2 wetland bordered by forest
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.88 ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Roadway, forest, residential Distance to nearest roadway or other development 20'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 20'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? LDW

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MC_WET1

Latitude 39.018879 Longitude -76.48246

Prepared by: EB, MB Date 10/10/23

Wetland Impact:
Type ____ Area ____

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		4,5,9,10,11,13,15		PFO fringe of the beaver impounded portion of Mill Creek
Fish and Shellfish Habitat	✓		1,2,3,4,5,6,7,8,10,13,14 16	✓	Aquatic wildlife in Mill Creek can easily access wetland
Sediment/Toxicant Retention	✓		1,2,3,4,5,9,10,12,13,15	✓	Residential properties upslope, hillslopes have woody veg but lack a thick herb layer. Beaver dam has created minimal flow allowing particles to settle
Nutrient Removal	✓		2,3,4,5,7,8,9,13,14		Residential runoff and road runoff received by wetland, beaver dam slows flow to near zero.
Production Export	✓		1,2,4,6,9,10,12,	✓	
Sediment/Shoreline Stabilization		✓			Beaver pond ideal stop for migrating waterfowl + other birds, herps + mammals observed, majority of uplands are undeveloped w/ one house
Wildlife Habitat	✓		1,3,4,5,7,8,9,11,12,17,18 19,20,21	✓	PUSS6/20I at DS end.
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.64ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, Commercial Distance to nearest roadway or other development 40'

Dominant wetland systems present PFOIE Contiguous undeveloped buffer zone present 40'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MC_WET2

Latitude 39.018958 Longitude -76.479267

Prepared by: EB, MB Date 10/10/23

Wetland Impact:
Type ___ Area ___

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N ___

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,4,5,7,8,10,13	✓	Groundwater seeping from toe-of-slope along northern + eastern edge of WL, RH concentrates some flow but signs that water sits for long durations observed.
Floodflow Alteration	✓		1,3,4,5,6,7,8,9,10,11,13 14,	✓	Within floodplain of Mill Creek, car dealerships/paved surfaces upslope, wide + flat area w/ small RH stream, channelizing flow
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		2,3,5,9,10,12,13,14,	✓	Water appears to sit for long durations, commercial properties + roads upslope,
Nutrient Removal	✓		1,3,4,5,10,12,14	✓	Receives runoff from roads + commercial properties, flat wetland where water sits.
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		3,5,6,7,8,11,17		
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 3.85 Human made? No Is wetland part of a wildlife corridor? ✓ or a "habitat island"? _____

Adjacent land use forest, highway, residential Distance to nearest roadway or other development 20'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 20'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WhC-wet1.1

Latitude 39.027062 Longitude -76.460332

Prepared by: DRS, MWD Date 10/10/23

Wetland Impact: ✓

Type _____ Area _____

Evaluation based on:

Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,5,7,9,13,15		
Floodflow Alteration	✓		1,2,3,4,5,6,7,8,10,13,14,18	✓	W/in floodplain of Whitehall Creek, WUS is well connected to the floodplain
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,3,5,9,10,14,16	✓	Residential, commercial, + highway adjacent, broad FP wetland that can trap sediment before reaching Whitehall Creek
Nutrient Removal	✓		1,3,4,5,8,9,11,13,14	✓	See notes for Sed/Tox.
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		4,5,8,9,11,13,14,15,17,19,20,	✓	Southern half of wetland borders undeveloped, upland forest. Fruiting trees + shrubs observed, as well as animal tracks
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.6ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Highway, Residential Distance to nearest roadway or other development 100'

Dominant wetland systems present PSS Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Headwaters

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WLC_WET2

Latitude 39.026493 Longitude -76.466646

Prepared by: DBS, MB Date 10/19/23

Wetland Impact:
Type — Area —

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2, 5, 7, 13		
Floodflow Alteration	✓		1, 2, 3, 4, 5, 6, 8, 9, 10, 13, 14 18	✓	Dense, shrubby vegetation, well connected floodplain to stream, part of a larger wetland system
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		2, 3, 4, 5, 9, 10, 12, 13, 15, 16	✓	Drainage patterns holding excess water w/ sediment from adjacent uplands, dense veg + slow moving water help trap sediment
Nutrient Removal	✓		1, 3, 4, 5, 7, 8, 9, 10, 13, 14	✓	Dominated by alders, receives road & residential runoff
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		5, 6, 7, 8, 9, 13, 15, 17, 19, 20	✓	Observed tracks + birds in wetland, food sources available and w/in lower density development w/ upland forest adjacent.
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.17ac Human made?* ____ Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Open water, PEM, roadway Distance to nearest roadway or other development 15'

Dominant wetland systems present PSS Contiguous undeveloped buffer zone present 15'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WhC-WET4

Latitude 39.026580B Longitude -76.45230604

Prepared by: EB/MB Date 10/30/23

Wetland Impact:
Type ____ Area ____

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,3,4,5,6,7,8,9,10,13,14 16,18	✓	Part of a larger wetland + dammed stream system that receives SW runoff from adjacent roads + flood waters from Whitehall Cr.
Fish and Shellfish Habitat	✓		2,3,4,5,8,9,10,12,14,16 17	✓	Wetland does not have a defined boundary from stream in some areas + does in others. Vegetation provides cover + spawning opportunity
Sediment/Toxicant Retention	✓		1,2,4,5,9,10,11,12,13,14, 15,16	✓	Receives runoff from adjacent roads, vegetation is dense enough to trap sediments + toxicants.
Nutrient Removal	✓		1,2,3,4,5,7,8,9,10,12,13, 14	✓	See Sed/Tox notes
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes: * Part of SHA Mitigation Site

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.76 ac Human made? * Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Highway/PFO Distance to nearest roadway or other development 100'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present 100'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WhC-WET 7

Latitude 29.026164 Longitude -76.448426

Prepared by: EB, JS Date 10/24/23

Wetland Impact:
Type ___ Area ___

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N ___

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2, 5, 7, 9, 10, 15		
Floodflow Alteration	✓		1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15	✓	Within the floodplain of Whitehall creek + interchange that receives significant runoff from roadways.
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1, 2, 3, 4, 5, 7, 9, 10, 12, 13, 16	✓	Dense herbaceous veg + floodwater storage potential observed, receives runoff from roadways + adjacent uplands.
Nutrient Removal	✓		1, 3, 4, 5, 7, 8, 9, 10, 13, 14	✓	Dense herbaceous veg + receives runoff from adjacent roadway
Production Export		✓			
Sediment/Shoreline Stabilization	✓		3, 4, 6, 7, 9, 12, 13, 15	✓	Abuts Whitehall Creek as well as receives overflow from the creek, helping to reduce flows in the mainstem
Wildlife Habitat	✓				
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes: *Part of SHA Mitigation site, however historic topo show a wetland/stream complex was here before the mitigation site!

Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.9 ac Human made? * Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Highway / PEM / Forest Distance to nearest roadway or other development 40'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 40'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WNC-WETID

Latitude 39.07672 Longitude -76.44901

Prepared by: EB, JS Date 10/24/23

Wetland Impact:
Type ~~—~~ Area ~~—~~

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N ~~—~~

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,5,7,9,13,15		
Floodflow Alteration	✓		1,3,4,5,6,7,8,9,10,13,18	✓	Large floodplain wetland abutting Whitehall Creek, receives flow waters from stream + road runoff.
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,3,4,5,9,10,12,13,15,16	✓	Receives stormwater runoff from surrounding uplands + roads, dense veg + inundation allow trapping to occur.
Nutrient Removal	✓		1,3,4,7,8,9,10,12,13,14	✓	Receives runoff from adjacent roadways, dense herbaceous veg help slow flow + attenuate nutrients
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes: * Part of SHA Mitigation site, however historic topo shows a wetland/stream complex was here before the mitigation site.

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.2ac Human made? N Is wetland part of a wildlife corridor? Y or a "habitat island"? No

Adjacent land use Forest, highway, commercial Distance to nearest roadway or other development 50'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Y

Is the wetland a separate hydraulic system? N If not, where does the wetland lie in the drainage basin? Middle

How many tributaries contribute to the wetland? >5 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WHC-WET13

Latitude 39.025429 Longitude -76.447496

Prepared by: DBS, MW Date 26 Oct 2023

Wetland Impact: Type — Area —

Evaluation based on: Office — Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,7,8		Some toe of slope discharge possible in wet season
Floodflow Alteration	✓		1,5,6,7,8,9,10,13,18	✓	In broad floodplain of Whitehall Creek
Fish and Shellfish Habitat	✓		4,8,14,17		
Sediment/Toxicant Retention	✓		1,2,4,5,9,10,12,14,15,16	✓	Receives direct runoff from Whitehall Rd.
Nutrient Removal	✓		3,4,5,7,8,9,11,12,13,	✓	Receives runoff from plant nursery
Production Export	✓		1,3,4,7,8,10,13,	✓	Flows to Whitehall creek
Sediment/Shoreline Stabilization	✓		2,3,6,8,9,		
Wildlife Habitat	✓		6,8,9,11,13,15,17		See list
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage	✓		22		
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.9 (ac) Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, roadway Distance to nearest roadway or other development 40'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 40'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WhC-WET12

Latitude _____ Longitude _____

Prepared by: EB, GS Date 10/26/23

Wetland Impact:
Type — Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✳ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,3,5,6,8,9,10,13	✓	Broad floodplain wetland able to store floodwaters
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,10		Unable to determine if some qualifiers would actually apply since we could not access the wetland + assessed from road
Nutrient Removal	✓		1,3,4		See sed/tox note.
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		1,3,5,6,7,8,19,20	✓	
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes: DNE property, assessed from road

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.61 ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, residential, roadway Distance to nearest roadway or other development 10'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 10'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC-WET1

Latitude 39.022142 Longitude -76.418646

Prepared by: EB, MB Date 10/30/23

Wetland Impact:
Type ____ Area ____

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2, 5, 7, 13, 15		
Floodflow Alteration	✓		1, 5, 6, 7, 8, 9, 10, 11, 13	✓	Wetland dissipates flow from stream outside study area, likely holds floodwaters during storm events
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention		✓			
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		3, 4, 5, 6, 7, 8, 17, 19, 20	✓	Part of a larger stream/wetland system. Majority of wetland is adjacent to forested uplands
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 3.6ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, highway Distance to nearest roadway or other development 75'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 75'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? high

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

MeC_WET 3

Wetland I.D. _____

Latitude 39.016939 Longitude -76.48407

Prepared by: EB, GS Date 10/17/23

Wetland Impact: _____

Type _____ Area _____

Evaluation based on:

Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,4,5,7,9,13,15	✓	Well connected floodplain to watercourse, also receives hydrology from toe-of-slope seeps
Floodflow Alteration	✓		1,2,3,4,5,6,7,8,9,10,13,14,18	✓	Wetland well connected to streams, spans entire valley + can hold floodwaters.
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,3,4,5,9,10,12,13,16	✓	Dense understory and herb layers, stream + drainage patterns have slow flow. Receives run off from roads + nearby commercial areas. Receives lawn run-off, landscaped areas upslope as well
Nutrient Removal	✓		1,3,4,5,7,8,9,10,11	✓	
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		3,5,6,7,8,9,11,13,15,17,19,20	✓	Large wetland largely untouched by development + connected via stream + wooded uplands to other wetlands - >1/2 wetland bordered by forest
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.71 ac Human made? Y Is wetland part of a wildlife corridor? No or a "habitat island"? Y

Adjacent land use Roadway Distance to nearest roadway or other development 20'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 20'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Headwaters

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MdC_WET4

Latitude 39.018341 Longitude -76.409689

Prepared by: DRS/MB Date 11/1/23

Wetland Impact:
Type — Area —

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,3,4,5,6,7,8,9,11,15,17,	✓	Receives stormwater runoff from US 50/301, flows to culvert constricting flow + allows wetland to hold flood waters
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,3,4,5		
Nutrient Removal	✓		1,4,5,7		
Production Export	✓		2,11		
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.180c Human made? Y Is wetland part of a wildlife corridor? N/ or a "habitat island"? Y

Adjacent land use Roadway Distance to nearest roadway or other development ≈ 20'

Dominant wetland systems present PFO1A Contiguous undeveloped buffer zone present N

Is the wetland a separate hydraulic system? N If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC_WET 7

Latitude 39.015555 Longitude -76.410585

Prepared by: SS Date 11/2/23

Wetland Impact:
Type ____ Area ____

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,2,3,4,5,6,7,8,9,15 17	✓	Series of wetland ditches connected via culverts w/ in Oceanic Dr. interchange designed to retain SW runoff
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,3,4		
Nutrient Removal	✓		1,3,4,7		
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 4.13ac Human made? No Is wetland part of a wildlife corridor? ✓ or a "habitat island"? _____

Adjacent land use Road, Residential, forest Distance to nearest roadway or other development 25'

Dominant wetland systems present R2EM Contiguous undeveloped buffer zone present 25'

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Low

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC_WET11

Latitude 39.020328 Longitude -76.418104

Prepared by: DR, MB, TT Date 11/7/23

Wetland Impact:
Type ___ Area ___

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,3,5,6,7,8,9,10,11,13,	✓	Emergent tidal fringe along Meredith Creek
Fish and Shellfish Habitat	✓		1,2,3,4,5,6,7,12,14,15,16	✓	Abuts Meredith Creek, majority of wetland is flooded by stream
Sediment/Toxicant Retention	✓		1,2,3,4,5,7,9,10,12,13,14,15,16	✓	Receives sediment + toxicants from residential + road runoff, dense veg slows flow to Meredith Creek
Nutrient Removal	✓		1,2,3,4,5,8,9,10,12,14	✓	Receives surface runoff from residences + roadway, dense veg slows flow
Production Export	✓		6,7,10,11,		
Sediment/Shoreline Stabilization	✓		1,3,4,5,7,9,11,12,13,15	✓	Densely vegetated emergent tidal wetland
Wildlife Habitat	✓		3,5,6,7,8,9,11,12,13,18 21,	✓	Likely used by migrating waterfowl + provides fish/shellfish habitat
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.58 ac Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use Forest, roadway Distance to nearest roadway or other development 20'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 20'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC-WET3

Latitude 39.019287 Longitude -76.414844

Prepared by: EB, LN Date 11/13/23

Wetland Impact:
Type — Area —

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2, 5, 7, 8, 9, 10, 13, 15	✓	Receives runoff from adjacent uplands + roadway. Toe-of-slope seeps observed
Floodflow Alteration	✓		3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 17	✓	Able to receive + store floodwaters from roads, uplands, + adjacent watercourse
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1, 2, 4, 7, 10, 12		
Nutrient Removal	✓		1, 4, 7, 8, 9, 10, 11	✓	Receives excess nutrients from runoff, vegetation diversity + density able to utilize nutrients
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.66 ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use forest, E2EM, Open Water Distance to nearest roadway or other development

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC-WETTS

Latitude 39.011369 Longitude -76.410823

Prepared by: EB, TT Date 11/14/23

Wetland Impact:
Type ✓ Area —

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,3,4,5,6,8,10,13	✓	PFO fringe of tidal pond, likely receives higher than ave tides on a seasonal basis
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention		✓			
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		5,6,7,8,7,12,17,18,	✓	PFO fringe of large pond likely used by migrating waterfowl, observed signs of mammals w/in wetland, surrounded by upland forest along western edge
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 3.57ac Human made? * Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use forest, roadway Distance to nearest roadway or other development 50'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 50'

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? N/A

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC-WET18

Latitude 39.013975 Longitude -76.409298

Prepared by: SS, IT, LP Date 11/15/23

Wetland Impact:
Type — Area —

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration		✓			
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention		✓			
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		1, 3, 5, 7, 8, 13, 14, 15, 17, 18, 20,	✓	Part of a larger wetland that has vernal pool potential
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes: Appears to likely be part of a wetland creation/restoration project

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.91ac Human made? * Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, PSS, Roadway Distance to nearest roadway or other development 75'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present 75'

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? —

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC_WET19

Latitude 39.014154 Longitude -76.411058

Prepared by: SS, TT, LP Date 11/15/23

Wetland Impact:
Type — Area —

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration		✓			
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention		✓			
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		1,3,5,7,8,13,14,15,17,18,20	✓	Potential vernal pool habitat
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes: Appears to likely be part of a wetland creation/restoration project * Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 16.69ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, roadway, open water Distance to nearest roadway or other development 10 - 100'

Dominant wetland systems present E2EM Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Low

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC_WET23

Latitude 39.018076 Longitude -76.406851

Prepared by: EB, TT Date 11/20/23

Wetland Impact:
Type — Area —

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,3,5,6,7,8,9,10,11,13	✓	Emergent tidal fringe along Mezick Pond
Fish and Shellfish Habitat	✓		1,2,3,4,5,6,7,12,14,15,16	✓	Abuts Mezick Pond, tidally flooded w/ no defined topo boundary between wetland + open water
Sediment/Toxicant Retention	✓		1,2,3,4,5,7,9,10,12,13,14,15,16	✓	Receives runoff from surrounding uplands + development. dense veg slows flow to pond
Nutrient Removal	✓		1,2,3,4,5,8,9,10,12,14	✓	Receives runoff from adjacent lands, dense veg slows flow
Production Export	✓		6,7,10,11		
Sediment/Shoreline Stabilization	✓		1,3,4,5,7,9,11,12,13,15	✓	Densely vegetated emergent tidal wetland
Wildlife Habitat	✓		3,5,6,7,8,9,11,12,13,18,21	✓	Used by migrating waterfowl, provides fish
Recreation	✓		1,2,5,7,8,9,12	✓	Within Sandy Point State Park
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 6.78ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Open water, forest, institutional Distance to nearest roadway or other development 50'

Dominant wetland systems present E2EM Contiguous undeveloped buffer zone present 50'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Low

How many tributaries contribute to the wetland? 0* Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC_WET14

Latitude 39.011397 Longitude -76.410701

Prepared by: EB, TT Date 11/14/23

Wetland Impact:
Type ____ Area ____

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,3,5,6,7,8,9,10,11,13	✓	Emergent tidal fringe along Westinghouse Pond
Fish and Shellfish Habitat	✓		1,2,3,4,5,6,7,12,14,15,16	✓	Abuts Westinghouse Pond, tidally flooded w/ no defined topo boundary between wetland & open water
Sediment/Toxicant Retention	✓		1,2,3,4,5,7,9,10,12,13,14,15,16	✓	Receives runoff from surrounding uplands + development, dense veg slows flow to pond
Nutrient Removal	✓		1,2,3,4,5,8,9,10,12,14	✓	Receives runoff from adjacent lands, dense veg slows flow
Production Export	✓		6,7,10,11		
Sediment/Shoreline Stabilization	✓		1,3,4,5,7,9,11,12,13,15	✓	Densely vegetated emergent tidal wetland
Wildlife Habitat	✓		3,5,6,7,8,9,11,12,13,18,21	✓	Used by migrating waterfowl + provides fish/shellfish habitat
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes: * E2EM fringe of tidal pond

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.20ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forest, commercial Distance to nearest roadway or other development 350'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present 350'

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC-WET20

Latitude 39.003578 Longitude -76.411468

Prepared by: SS, TT Date 11/28/23

Wetland Impact:
Type ___ Area ___

Evaluation based on:
Office ___ Field ✓

Corps manual wetland delineation completed? Y ✓ N ___

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		5,7,8,10		
Floodflow Alteration	✓				
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention		✓			
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		1,3,4,5,6,7,8,11,17	✓	Majority of wetland surrounded upland forest, adjacent to Chesapeake Bay
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.61ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Residential, Forest, Open Water Distance to nearest roadway or other development 50'

Dominant wetland systems present E2EM Contiguous undeveloped buffer zone present 50'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. MeC-WET26

Latitude 39.0045747 Longitude -76.4118300

Prepared by: SS, TT Date 11/28/23

Wetland Impact:
Type ✓ Area ✓

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration	✓		1,3,5,6,7,8,10,11,18	✓	Tidally flooded phrag wetland
Fish and Shellfish Habitat	✓		1,2,3,4,5,6,7,11,14,15,16,	✓	Abuts Chesapeake Bay, tidally flooded w/ no defined topo break between wetland + open water
Sediment/Toxicant Retention	✓		1,2,3,4,5,7,9,10,12,13 14,15,16	✓	Receives runoff from surrounding uplands + residence, dense veg traps sediment
Nutrient Removal	✓		1,2,3,4,5,8,9,10,12,14	✓	Receives runoff from adjacent residence, dense veg
Production Export	✓		6,7,10,11		
Sediment/Shoreline Stabilization	✓		1,3,4,5,7,9,11,12,13 15	✓	Densely vegetated emergent tidal wetland
Wildlife Habitat	✓		3,5,6,7,8,9,11,12,13,18, 21	✓	Used by migrating waterfowl + provides fish/shellfish habitat
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.38 Human made? Yes Is wetland part of a wildlife corridor? NO or a "habitat island"?

Adjacent land use Transportation Distance to nearest roadway or other development 50' to 301

Dominant wetland systems present EZEMIP Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KI-Wet 30

Latitude Longitude

Prepared by: JTB Date 1/4/24

Wetland Impact: Type EZEMIP Area 2.38

Evaluation based on: Office Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	2,7,9,10,13	✓	located in northern portion of watershed, about KI-WS1 receives overland sheet flow from 301
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	10		
Nutrient Removal	Y	3,9		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	8,19,20		
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.77 Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? _____

Adjacent land use Forested / transportation Distance to nearest roadway or other development 38' to private drive

Dominant wetland systems present PEMI Contiguous undeveloped buffer zone present _____

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KJ_Wet 28

Latitude 38.98014 Longitude -76.3263

Prepared by: JJ, PS Date 12/5/23

Wetland Impact:
Type PEMI Area 2.77

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	2,5,6,9,		located in northern section of watershed, surrounded by uplands
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	N			
Nutrient Removal	Y	3,5,8		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	1,3,4,5,13,18,20	✓	surrounded by upland and potential for insects and amphibian populations
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.64 Human made? natural Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use maintained roadway/ comm. Distance to nearest roadway or other development 30ft

Dominant wetland systems present E2EM1 Contiguous undeveloped buffer zone present NA

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? abuts KI-WUS2

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KI-Wet 7B

Latitude 38.97721 Longitude -76.31645

Prepared by: JTKH Date 9/19/23

Wetland Impact:
Type E2EM1 Area 0.64

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	y	7		Connected to Thompson Creek
Floodflow Alteration	y	4,5,10,13,18		connected to Thompson Creek, covered in Privy and adjacent to Roadway
Fish and Shellfish Habitat	y	3,4,7,8,14,17	✓	Connected to Thompson Creek, [illegible] vegetation on Stream Side for Fish to Feed
Sediment/Toxicant Retention	y	2,10,16		Roadway culvert wetland can give runoff. Area is dense privy Wetland is adjacent to Thompson Creek
Nutrient Removal	y	2,3,4,8,		Connected to Thompson Creek, directly connected to privy Adjacent to major Roadway
Production Export	n	None		
Sediment/Shoreline Stabilization	n	None		
Wildlife Habitat	y	3,4,5,6,8		area is large and contains, Adjacent to forested area and perennial Stream. Food sources can be in wetland or Stream
Recreation	n	None		
Educational/Scientific Value	n	None		
Uniqueness/Heritage	n	None		
Visual Quality/Aesthetics	n	None		
ES Endangered Species Habitat	n	None		
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.23 Human made? _____ Is wetland part of a wildlife corridor? NO or a "habitat island"? _____

Adjacent land use Forested / transportation Distance to nearest roadway or other development 123' to 301

Dominant wetland systems present PFO1A Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? YES If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KI-Wet27

Latitude 38.97825 Longitude -76.3159

Prepared by: JT, PS Date 12/5/23

Wetland Impact:
Type PFO1A Area 1.23

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	2,5,6,9,10,11,13	✓	KI-WQS2 abuts wetland, Comercial and Private Property down stream of Wetland
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	6,10,		
Nutrient Removal	Y	3,8,9,		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	1,4,5,19,20		has potential for insect and amphibian populations
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.98Ac Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Row/Commercial Distance to nearest roadway or other development 139Ft from 301

Dominant wetland systems present PFO/EEMI Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? YES If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KT-WET9

Latitude 38.9754 Longitude -76.30791

Prepared by: SKH Date 9/21/23

Wetland Impact:
Type PFO/EEMI Area 0.98Ac

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,7		Private' norres down Stream, Drains into Cox creek
Floodflow Alteration	Y	4,5,6,10,11		Drains into Cox Creek, Cracker barrel is adjacent to wetland
Fish and Shellfish Habitat	N	None		
Sediment/Toxicant Retention	Y	10		wetland drains into Cox creek
Nutrient Removal	Y	4		adjacent to 301 and Parking lot
Production Export	N	None		
Sediment/Shoreline Stabilization	N	None		
Wildlife Habitat	Y	16		Deer observed
Recreation	N	None		
Educational/Scientific Value	N	None		
Uniqueness/Heritage	N	None		
Visual Quality/Aesthetics	N	None		
ES Endangered Species Habitat	N	None		
Other				

Notes: KT-WET9 drains into Cox creek

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.63 Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Maintained lawn/cemetery Distance to nearest roadway or other development 87 ft to cemetery Rd

Dominant wetland systems present E2EM1P Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KI_Wet26

Latitude 38.976057 Longitude -76.306957

Prepared by: JT, PS Date 11/30/23

Wetland Impact:
Type E2EM1P Area 1.63Ac

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	2,4,5,9	✓	Surrounded by uplands
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	6		
Nutrient Removal	Y	4,9,		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	19,20		Potential for insect and amphibian populations
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.32 Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? _____

Adjacent land use Waterway Distance to nearest roadway or other development 70' to 301

Dominant wetland systems present E2EMIP Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KI-Wet29

Latitude _____ Longitude _____

Prepared by: JTPS Date 1/4/24

Wetland Impact:
Type E2EMIP Area 2.32

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	5,6,9,13	✓	Grounded by KI-WWS3 on 3 sides. Receives runoff from upland adjacent to wetland
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	10,16		
Nutrient Removal	Y	9		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	1,3,19,20	✓	Potential for insect and amphibian populations
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.17 Human made? Y Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use commercial/ roadway Distance to nearest roadway or other development 15'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. K1-wet 11-wet

Latitude 38.9726 Longitude -76.2648

Prepared by: JT, KH Date 9/26/23

Wetland Impact:
Type PFO Area 1.17

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			None
Floodflow Alteration	Y	3,4,5,9		Runoff from Soil and from Vanaglot, mapped Hydric Soils
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	2,10		Runoff from Soil, Houses and Shopping Center South/Southwest
Nutrient Removal	Y	8		Dense Phrag
Production Export	N			None
Sediment/Shoreline Stabilization	N			None
Wildlife Habitat	N			None
Recreation	N			None
Educational/Scientific Value	N			None
Uniqueness/Heritage	N			None
Visual Quality/Aesthetics	N			None
ES Endangered Species Habitat	N			None
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 4.86 Human made? Y ? Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use residential / roadway Distance to nearest roadway or other development 20ft

Dominant wetland systems present E2EM1/PFO Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? YES If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KY-WET 12/12A WET

Latitude 38.972 Longitude -76.262.12

Prepared by: JT, KH Date 9/24/23

Wetland Impact: Type E2EM1/PFO Area 4.86

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,7		Houses South 9g wetland also connected to KY-WW54
Floodflow Alteration	Y	6,10,11		KYWW54 Possible overflow into wetland, houses South 9g wetland
Fish and Shellfish Habitat	Y	4		Connected to KY-WW54,
Sediment/Toxicant Retention	Y	10,16		Dense Phrag, Connected to KY-WW54
Nutrient Removal	Y	2,3,4,8	✓	Connected to KY-WW54, Dense Phrag, runoff from 301
Production Export	N	None		
Sediment/Shoreline Stabilization	N	None		
Wildlife Habitat	Y	13,20,19,17	✓	Dense Phrag, Area Could Contain Turtles, Birds there in the area
Recreation	N	None		
Educational/Scientific Value	N	None		
Uniqueness/Heritage	N	None		
Visual Quality/Aesthetics	N	None		
ES Endangered Species Habitat	N	None		
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.09Ac Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Row/Forest Distance to nearest roadway or other development 83Ft from Main St

Dominant wetland systems present E2EM1 Contiguous undeveloped buffer zone present NO, Main St and Wart St

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KY_Wet 13

Latitude 38.97674 Longitude -76.25457

Prepared by: JTPS Date 10/5/23

Wetland Impact:
Type E2EM1 Area 1.09Ac

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	None		
Floodflow Alteration	Y	4,5,6	Y	Adjacent to Main St and Wart St
Fish and Shellfish Habitat	N	None		
Sediment/Toxicant Retention	Y	3		Dense vegetation to slow water
Nutrient Removal	Y	3,8		Dense phrag
Production Export	N	None		
Sediment/Shoreline Stabilization	N	None		
Wildlife Habitat	Y	4,8,13	Y	Surrounded by Forest
Recreation	N	None		
Educational/Scientific Value	N	None		
Uniqueness/Heritage	N	None		
Visual Quality/Aesthetics	N	None		
ES Endangered Species Habitat	N	None		
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.88 Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Forested Distance to nearest roadway or other development 196FT to 301

Dominant wetland systems present E2EM1 Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KJ-Wet 19

Latitude 38.97377 Longitude -76.26041

Prepared by: JT, PS Date 11/14/2023

Wetland Impact:
Type E2EM1 Area 0.88AC

Evaluation based on:
Office _____ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	5,6		
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	N			
Nutrient Removal	Y	3,9		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	1,3,4,5,19,20	✓	Adjacent to KJ-WUS4 and surrounded by upland, has potential for insect and amphibian populations
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes: Adjacent to KJ-WUS4

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.1 AC Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use R&W/Marina Distance to nearest roadway or other development 73 Ft from Main St

Dominant wetland systems present EZEM Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? ———

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. KI_Wet 15

Latitude 39.97127 Longitude -76.25203

Prepared by: JTPS Date 10/5/23

Wetland Impact:
Type EEEM Area 1.1 AC

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	None		
Floodflow Alteration	Y	4,5,6,10,13	Y	Drains into Prospect Bay
Fish and Shellfish Habitat	N	None		
Sediment/Toxicant Retention	Y	2,16		Adjacent to Main St, may receive downstream of WUS with wetland drainage
Nutrient Removal	Y	4,9		30' grass wetland buffer, Juncus tenuis, and Hydrocotyle americana present
Production Export	N	None		
Sediment/Shoreline Stabilization	N	None		
Wildlife Habitat	Y	8,13,17		Space observed in wetland, Areas of dense phragmites.
Recreation	N	None		
Educational/Scientific Value	N	None		
Uniqueness/Heritage	N	None		
Visual Quality/Aesthetics	N	None		
ES Endangered Species Habitat	N	None		
Other				

Notes: KI_WET15 drains into KI_WUS5

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 5.98Ac Human made?_____ Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Row/Commercial Distance to nearest roadway or other development 200ft to Ramp to 301 and main St

Dominant wetland systems present E2EMI Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. PB-Wet1

Latitude 38.96753 Longitude -76.23756

Prepared by: JT, PS Date 10/5/23

Wetland Impact:
Type E2EMI Area 5.98Ac

Evaluation based on:
Office_____ Field ✓

Corps manual wetland delineation completed? Y ✓ N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	None		
Floodflow Alteration	Y	4,5,6,11,13		Surrounded by roads and parking lots, hydric soils, flat area, comercial property adjacent, Drains into PB-WUS1
Fish and Shellfish Habitat	Y	3,5,7,8,12,17	Y	Fish observed, stream channel near northern portion of wetland
Sediment/Toxicant Retention	Y	6		Adjacent to commercial properties
Nutrient Removal	Y	2,5		open water adjacent to wetland, ponded water in northern section
Production Export	N	None		
Sediment/Shoreline Stabilization	N	None		
Wildlife Habitat	Y	16		Fish and turtles observed in Northern portion of Wetland
Recreation	N	None		
Educational/Scientific Value	N	None		
Uniqueness/Heritage	N	None		
Visual Quality/Aesthetics	N	None		
ES Endangered Species Habitat	N	None		
Other				

Notes: PB-Wet1 Drains into PB-WUS1

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.34Ac Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Comercial Distance to nearest roadway or other development 65Ft to Mauney Rd

Dominant wetland systems present EZEMP Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? YES If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. PB-Wet 9

Latitude 35.9695 Longitude -76.23972

Prepared by: JT, RS Date 11/2/2023

Wetland Impact:
Type EZEMP Area 1.34Ac

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	5,6,10,11	✓	Abuts PB-WUS4
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1,2,6,10	✓	Abuts PB-WUS4, Adjacent to Comercial Property
Nutrient Removal	Y	3,2		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	8,19,20		
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes: PB-Wet 9 Drains into PB-WUS4

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.5A Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use COMERCIAL Distance to nearest roadway or other development 62FT to Kent Narrows Way N

Dominant wetland systems present E2EM1P Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. PFO-WET 11

Latitude 38.9707 Longitude -76.2441

Prepared by: JT, PS Date 11/9/2023

Wetland Impact:
Type E2EM1P Area 0.58Ac

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	6,9		Impervious runoff from areas surrounding wetland
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	N			
Nutrient Removal	Y	3,9		Emergent Vegetation
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	N			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 13.56 Human made?_____ Is wetland part of a wildlife corridor? NO or a "habitat island"?_____

Adjacent land use ROW/Transportation Distance to nearest roadway or other development 77 Ft to pond from 301 to Main St

Dominant wetland systems present E2EMI Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. PB-Wet5

Latitude 38.96773 Longitude -76.23684

Prepared by: JT, BS Date 10/12/2023

Wetland Impact:
Type E2EMI Area 13.56AC

Evaluation based on:
Office_____ Field ✓

Corps manual wetland delineation completed? Y ✓ N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	6, 11		Wetland Surrounds Power Substation
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1, 3		
Nutrient Removal	Y	2, 5, 8		Ponded water observed
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	8, 10, 13, 19, 20	✓	Has Potential to have abundant insects and amphibians
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes: PB-WQ2 in middle of Wetland

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 16.07Ac Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use ROW Transportation Distance to nearest roadway or other development

Dominant wetland systems present E2EMIP/PFO Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. PB-Wet B/8A

Latitude 38.9665 Longitude 76.2271

Prepared by: JT, PS Date 11/2/2023

Wetland Impact:
Type E2EMIP/PFO Area 16.07Ac

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	4, 6, 11, 13	✓	Private Property & adjacent road outfalls Perennial stream
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	6, 7, 10		
Nutrient Removal	Y	1, 2, 3, 5	✓	large compared to watershed
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	3, 8, 19, 20, 21		large enough to have Potential of a diverse, insect, avian and amphibian population
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes: PB_Wet 8 drains to the Lower Chester River

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.166 Human made? no Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use Mdia row/residential Distance to nearest roadway or other development 190 ft from Pierson Rd

Dominant wetland systems present tidal-emergent scrubshrub Contiguous undeveloped buffer zone present no

Is the wetland a separate hydraulic system? yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. PB Wet 2

Latitude 38.9649 Longitude -76.2262

Prepared by: JT, KH Date 10/10/23

Wetland Impact:
Type e2 em1 Area 2.166 AC

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	n	None		
Floodflow Alteration	y	2,3,4,6	y	Adjacent to Main St and Pierson Rd
Fish and Shellfish Habitat	n	None		
Sediment/Toxicant Retention	y	2		adjacent to Main St and Pierson Rd
Nutrient Removal	y	3,9		
Production Export	n	None		
Sediment/Shoreline Stabilization	n	None		
Wildlife Habitat	y	9,13		open water in wetland.
Recreation	n	None		
Educational/Scientific Value	n	None		
Uniqueness/Heritage	n	None		
Visual Quality/Aesthetics	n	None		
ES Endangered Species Habitat	n	None		
Other				

Notes: PB Wet 2 drains into Marshy Creek. observed tiny fish @ delineation. wetland is located on a DNA property

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.17Ac Human made? no Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use ROW / residential / recreational Distance to nearest roadway or other development 5ft from Jackson Creek Ln

Dominant wetland systems present PSS Contiguous undeveloped buffer zone present no

Is the wetland a separate hydraulic system? yes If not, where does the wetland lie in the drainage basin? ____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. PB Wet 3

Latitude 38.9663 Longitude -76.2247

Prepared by: JT, KH Date 10/10/23

Wetland Impact: Type PSS Area 1.17Ac

Evaluation based on: Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	n	None		
Floodflow Alteration	y	4,6	Y	surrounded by Long Pointe Rd and Jackson Creek Ln
Fish and Shellfish Habitat	y	1		fish observed @ pipe outfall
Sediment/Toxicant Retention	N	None		
Nutrient Removal	y	5		Ponded water by Pipe
Production Export	n	None		
Sediment/Shoreline Stabilization	n	None		
Wildlife Habitat	y	11b		Fish observed
Recreation	n	None		
Educational/Scientific Value	n	None		
Uniqueness/Heritage	n	None		
Visual Quality/Aesthetics	n	None		
ES Endangered Species Habitat	n	None		
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.38Ac Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Transportation Distance to nearest roadway or other development 34ft to Main St

Dominant wetland systems present E2EM1 Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. PB-Wet 6

Latitude 38.96532 Longitude -76.27847

Prepared by: JT, PS Date 10/12/2023

Wetland Impact:
Type E2EM1 Area 1.38AC

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	6,11,13	✓	adjacent to PB-WS3
Fish and Shellfish Habitat	N		✓	
Sediment/Toxicant Retention	Y	6,7,10		
Nutrient Removal	Y	9,10		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	6,8		Fish observed Adjacent in PB-WS3
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes: PB-Wet 6 drains into PB-WS3

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.32 Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Transportation Distance to nearest roadway or other development 186Ft to Beach Harbor Dr

Dominant wetland systems present E2EM1Pd Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WC-Wetl6

Latitude 38.96155 Longitude -76.2167A

Prepared by: JT, RS Date 10/26/2023

Wetland Impact:
Type E2EM1Pd Area 2.32 Ac

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	7		Drains into WC-WUS3
Floodflow Alteration	Y	4,5,6,10,11,13	Y	Adjacent to Saddler Rd and WC-WUS3
Fish and Shellfish Habitat	Y	3,4,5,12		Potential for fish
Sediment/Toxicant Retention	Y	6,10		Adjacent to WC-WUS3, Private homes adjacent to Wetland
Nutrient Removal	Y	2,5		Area was saturated
Production Export	N	None		
Sediment/Shoreline Stabilization	N	None		
Wildlife Habitat	Y	13,20		Potential Frog habitat
Recreation	N	None		
Educational/Scientific Value	N	None		
Uniqueness/Heritage	N	None		
Visual Quality/Aesthetics	N	None		
ES Endangered Species Habitat	N	None		
Other				

Notes: WC-Wetl6 Drains into WC-WUS3

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.4Ac Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Transportation Distance to nearest roadway or other development 135FT to Refuse Center

Dominant wetland systems present E2SSI/EMIP Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? YES If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WC-Wet 1

Latitude 38.96107 Longitude -76.20154

Prepared by: JT, PS Date 10/19/2023

Wetland Impact: Type E2SSI/EMIP Area 1.4Ac.

Evaluation based on: Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	4,5,6,8,9	✓	impervious surface surrounds wetland adjacent to 301 & Commercial property
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	6,18		Private and Comercial buildings downstream, plots WC WUS1
Nutrient Removal	Y	9		Emergent vegitation
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes: WC-Wet1 Drains into WC-WUS1

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.26 Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO

Adjacent land use Transportation, Commercial Distance to nearest roadway or other development 102' to 301

Dominant wetland systems present PEMIC Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WC-Wet 7

Latitude 38.96388 Longitude -76.19518

Prepared by: JTPS Date 1/5/24

Wetland Impact:
Type PEMIC Area 1.26

Evaluation based on:
Office ____ Field ✓

Corps manual wetland delineation completed? Y ✓ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	5,6,7,9	✓	Ponded water observed during visit
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	6		
Nutrient Removal	Y	3,5,9,10	✓	Ponded water observed during visit
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	1,19,20		
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.66 acres + Human made? No Is wetland part of a wildlife corridor? X or a "habitat island"?

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 140 ft.

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present Yes along non road sides

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Yes

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal_WET2

Latitude 38.969575°N Longitude 76.180160°W

Prepared by: DB/DL Date 9/19/23

Wetland Impact:
Type Unk Area Unk

Evaluation based on:
Office ____ Field ✔

Corps manual wetland delineation completed? Y ✔ N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	7		
Floodflow Alteration	Y	5,6,7,9,13,15,18	✔	
Fish and Shellfish Habitat	Y	4,6,8,10,17		Frogs, tadpoles and crayfish burrows noted in standing water of wetland.
Sediment/Toxicant Retention	Y	3,4,5,9,10,12,16	✔	Water flow leaving the wetland is restricted by culvert under road.
Nutrient Removal	Y	3,5,6,7,9,13,14		Water flow leaving the wetland is restricted by culvert under road.
Production Export	N	1,2,4,6,7		
Sediment/Shoreline Stabilization	N	1		
Wildlife Habitat	Y	3,4,5,13,17,19,20	✔	Crayfish burrows located within wetland
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.69 Acres Human made? No Is wetland part of a wildlife corridor? x or a "habitat island"? _____

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 150ft.

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes along non road sides

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Yes

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal_Wet30/30A

Latitude 38°97'17"N Longitude 76°17'98"W

Prepared by: DB/DL Date 11/9/23

Wetland Impact:
Type Unk Area Unk

Evaluation based on:
Office _____ Field ✔

Corps manual wetland delineation completed? Y ✔ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	7,15		culvert runs through wetland
Floodflow Alteration	Y	5,6,7,8,9,10,13,15,18	✔	
Fish and Shellfish Habitat	Y	1,4,8,10,17		
Sediment/Toxicant Retention	Y	3,5,10,12,16	✔	
Nutrient Removal	Y	3,5,7,9,13,14	✔	culvert runs through wetland
Production Export	N	7		common reed
Sediment/Shoreline Stabilization	N	1		
Wildlife Habitat	Y	3,4,6,13,19,20	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.17 Acres Human made? No Is wetland part of a wildlife corridor? x or a "habitat island"? _____

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 200ft.

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes along non road sides

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Yes

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal_Wet31

Latitude 38°58'20"N Longitude 76°10'40"W

Prepared by: DB/DL Date 11/9/23

Wetland Impact:
Type Unk Area Unk

Evaluation based on:
Office _____ Field ✔

Corps manual wetland delineation completed? Y ✔ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	7,15		culvert runs through wetland
Floodflow Alteration	Y	5,6,7,8,9,10,13,15,18	✔	
Fish and Shellfish Habitat	Y	1,4,8,10,17		
Sediment/Toxicant Retention	Y	3,5,10,12,16	✔	
Nutrient Removal	Y	3,5,7,9,13,14	✔	culvert runs through wetland
Production Export	N	7		common reed
Sediment/Shoreline Stabilization	N	1		
Wildlife Habitat	Y	3,4,6,13,19,20	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.3 acres Human made? No Is wetland part of a wildlife corridor? X or a "habitat island"? _____

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 65.5ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Yes

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal_Wet-8

Latitude 38.583123° N Longitude 76.102509° W

Prepared by: DB/DL Date 9/28/23

Wetland Impact:
Type UNK Area UNK

Evaluation based on:
Office _____ Field ✔

Corps manual wetland delineation completed? Y ✔ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	4		
Floodflow Alteration	Y	6,9		
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	7		
Nutrient Removal	Y	8,9,10,11	✔	
Production Export	Y	1,2,4,8	✔	
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	1,3,4,5,7,8,10,15,17,19,21	✔	Deer tracks noted
Recreation	Y	12		
Educational/Scientific Value	N			
Uniqueness/Heritage	Y	7,12		
Visual Quality/Aesthetics	Y	1,2,11		
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.9 acres Human made? No Is wetland part of a wildlife corridor? x or a "habitat island"? No

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 150 ft.

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Yes

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal-Wet 12

Latitude 38° 58' 32.88" Longitude 76° 10' 22.29"

Prepared by: DB/DL Date 10/10/23

Wetland Impact:
Type UNK Area UNK

Evaluation based on:
Office Field ✔

Corps manual wetland delineation completed? Y ✔ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	15		Standing water
Floodflow Alteration	Y	6,7,10,18	✔	
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1		
Nutrient Removal	Y	3,5,8		
Production Export	N	1,4,7		
Sediment/Shoreline Stabilization	N	1		
Wildlife Habitat	Y	3,4,5,13,19	✔	Insects, standing water for tadpoles
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 7.86 Acres Human made? No Is wetland part of a wildlife corridor? X or a "habitat island"? No

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 50 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal-Wet 25

Latitude 38.979693°N Longitude 76.172943°W

Prepared by: DB/DL Date 10/31/23

Wetland Impact:
Type Unk Area Unk

Evaluation based on:
Office Field ✔

Corps manual wetland delineation completed? Y ✔ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	4		
Floodflow Alteration	Y	6,10,18	✔	
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1,9		
Nutrient Removal	N	3		
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	3,4,5,19	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.35 Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 45ft.

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present _____

Is the wetland a separate hydraulic system? _____ If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal-Wet-26

Latitude 38.976987°N Longitude 76.174337°W

Prepared by: DB/DL Date 10/31/23

Wetland Impact:
Type UNK Area UNK

Evaluation based on:
Office _____ Field ✔

Corps manual wetland delineation completed? Y ✔ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	6,10,18	✔	
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	N	1,9		
Nutrient Removal	N	3		
Production Export	N			
Sediment/Shoreline Stabilization	N	1		
Wildlife Habitat	Y	3,4,5,19	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.3 Acres Human made? _____ Is wetland part of a wildlife corridor? X or a "habitat island"? _____

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 30 ft.

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present _____

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal-Wet-28

Latitude 38° 58' 33.52" N Longitude 76° 10' 29.53"

Prepared by: DB/DL Date 11/2/23

Wetland Impact:
Type Unk Area unk

Evaluation based on:
Office _____ Field ✔

Corps manual wetland delineation completed? Y ✔ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	4		
Floodflow Alteration	Y	6,10,18	✔	Common reed
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1,4,9	✔	
Nutrient Removal	N	3,11		
Production Export	N			
Sediment/Shoreline Stabilization	N	1		
Wildlife Habitat	Y	3,4,5,19	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.57Acres Human made?_____ Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 50 ft.

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present_____

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wal-Wet29

Latitude 38° 58' 38.71" N Longitude 76° 10' 24.68" W

Prepared by: DB/DL Date 11/2/23

Wetland Impact:
Type Unk Area Unk

Evaluation based on:
Office_____ Field ✔

Corps manual wetland delineation completed? Y ✔ N_____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	4		
Floodflow Alteration	Y	6,10		
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1,4	✔	top layer organic material
Nutrient Removal	N	3		
Production Export	N			
Sediment/Shoreline Stabilization	N	1		
Wildlife Habitat	Y	3,4,5,19	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.05acres Human made? No Is wetland part of a wildlife corridor? X or a "habitat island"? _____

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 150 ft.

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present _____

Is the wetland a separate hydraulic system? N0 If not, where does the wetland lie in the drainage basin? Yes

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wye_Wet16

Latitude 38.980729°N Longitude 76.164654°W

Prepared by: DB/DL Date 10/11/23

Wetland Impact:
Type UNK Area UNK

Evaluation based on:
Office _____ Field ✔

Corps manual wetland delineation completed? Y ✔ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	7		
Floodflow Alteration	Y	5,6,7,9,13,15,18	✔	
Fish and Shellfish Habitat	Y	4,6,8,10,17	✔	Frogs and tadpoles in standing water
Sediment/Toxicant Retention	Y	3,4,5,9,10,12,16	✔	
Nutrient Removal	Y	3,5,6,7,9,13,14	✔	
Production Export	Y	1,2,4,6,7	✔	
Sediment/Shoreline Stabilization	Y	1		
Wildlife Habitat	Y	3,4,5,13,17,19,20	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.35 acres Human made? N Is wetland part of a wildlife corridor? N or a "habitat island"? Y

Adjacent land use Residential / Commercial Distance to nearest roadway or other development 100'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? lower portion

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wye_WET23

Latitude 38°56'45.56"N Longitude 76°10'10.66"W

Prepared by: DB/DL Date 10/26/23

Wetland Impact:
Type PEM Area

Evaluation based on:
Office Field ✔

Corps manual wetland delineation completed? Y ✔ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	3,6,7		
Floodflow Alteration	Y	5,6,9,10,15	✔	
Fish and Shellfish Habitat	Y	1,2		
Sediment/Toxicant Retention	Y	7		
Nutrient Removal	Y	3		
Production Export	Y	1,2,4		
Sediment/Shoreline Stabilization	Y	1,2		
Wildlife Habitat	Y	5,8,17,19,21	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.48 acres Human made? No Is wetland part of a wildlife corridor? x or a "habitat island"? No

Adjacent land use Rural Agricultural Areas/Residential Distance to nearest roadway or other development 340 ft.

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wye-Wet 24

Latitude 38.981479°N Longitude 76.170434°W

Prepared by: DB/DL Date 10/10/23

Wetland Impact:
Type UNK Area UNK

Evaluation based on:
Office Field ✔

Corps manual wetland delineation completed? Y ✔ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N	4		
Floodflow Alteration	Y	6,10	✔	
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1,4	✔	top layer organic material
Nutrient Removal	N	3		
Production Export	N			
Sediment/Shoreline Stabilization	N	1		
Wildlife Habitat	Y	3,4,5,19	✔	
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 1.2 acres Human made? Y Is wetland part of a wildlife corridor? N or a "habitat island"? Y

Adjacent land use Residential / Commercial Distance to nearest roadway or other development < 25'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wye-WET22

Latitude 38°59'03.49"N Longitude 76°09'41.83"W

Prepared by: DB/DL Date 10/18/23

Wetland Impact:
Type PEM Area

Evaluation based on:
Office Field ✔

Corps manual wetland delineation completed? Y ✔ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	5,6,8,9	✔	
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	N	5		
Nutrient Removal	N			
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	N	8,19		
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

APPENDIX F: HYDRODYNAMIC MODELING REPORT

Appendix F: Hydrodynamic Modeling Analysis

October 2025

TABLE OF CONTENTS

1 BACKGROUND 3
2 METHODOLOGY 4
2.1 Model Approach 4
2.2 Model Setup 5
2.2.1 Project Domain and Data Collection 5
2.2.2 Grid and Bathymetry 9
2.3 Structure Representation 9
2.4 Boundary Conditions 9
2.4.1 Tides 9
2.4.2 Wind 9
2.4.3 River Discharge 11
2.5 Model Calibration of Roughness Coefficient 11
3 RESULTS 15
3.1 Scenarios Evaluated 15
3.2 Velocity Magnitude 16
4 ENVIRONMENTAL IMPACTS 19
4.1 Velocity Magnitude Differences 19
4.1.1 Existing vs. Build Alternative (Present Day Water Level) 22
4.1.2 Existing vs. Build Alternative (2100 Water Level) 24
4.2 Potential Impacts of Hydrodynamic Changes 26
4.2.1 Sediment Transport 26
4.2.2 Benthic Habitat 28
4.2.3 Navigation 28
4.3 Summary 29

LIST OF FIGURES

Figure 1. Observation Points 8
Figure 2. Existing bridge pier alignment represented in the model. 10
Figure 3. MDTA RPA bridge pier alignment represented in the model. 11
Figure 4. Tide Calibration 12
Figure 5. Velocity Calibration U-Velocity Component 14
Figure 6. Velocity Calibration V-Velocity Component 14
Figure 7. Peak velocities throughout the model domain during a flood tide at 8:30 AM on 07/03/2025 for existing bridge conditions. 17

Figure 8. Peak velocities throughout the model domain during a flood tide at 8:30 AM on 07/03/2025 for build alternative conditions 17
Figure 9. Peak velocities throughout the model domain during a flood tide at 8:30 AM on 07/03/2025 for existing bridge conditions in 2100. 18
Figure 10. Peak velocities throughout the model domain during a flood tide at 8:30 AM on 07/03/2025 for build alternative conditions in 2100. 18
Figure 11. Location of observation points 20
Figure 12. Time series comparison at a point within the main channel (Observation Point 1) for existing and build alternative pier configuration. 21
Figure 13. Time series comparison at a point 0.5 miles beyond the main channel bridge span (Observation Point 2) for existing and build alternative pier configuration. 22
Figure 14. Velocity difference between existing and build alternative conditions during peak velocity at 8:30 AM on 7/3/2025 for the bottom layer. 23
Figure 15. Velocity difference between existing and build alternative during peak velocity at 8:30 AM on 7/3/2025 for the surface layer. 24
Figure 16. Velocity difference between existing and build alternative during peak velocity at 8:30 AM on 7/3/2025 for the bottom layer with 3.5 ft of sea level change 25
Figure 17. Velocity difference between existing and build alternative during peak velocity at 8:30 AM on 7/3/2025 for the surface layer with 3.5 ft of sea level change. 26
Figure 18. Mapped sediment layers relative to near bed velocities 27

LIST OF TABLES

Table 1. Data Sources 7
Table 2. Water level calibration statistics 13

1 Background

This modeling study assesses the hydrodynamics of the existing Chesapeake Bay Bridge area and proposed conditions of the build alternatives alignment identified in the Chesapeake Bay Crossing Study: Tier 2 NEPA (Tier 2 Study). The application of a hydrodynamic model enables a detailed evaluation of flow patterns, tidal dynamics, and water level fluctuations under present-day and future (i.e., 2100) scenarios. By simulating existing and build alternative conditions, the study provides an understanding of how infrastructure modifications may alter circulation and hydrodynamic processes in this region of the Bay.

The Chesapeake Bay is the largest estuary in the United States and is characterized by its complex interaction of tidal forcing from the Atlantic Ocean, freshwater inflows, and highly variable meteorological events. These processes drive spatial and temporal variability in currents which impact sediment transport and habitat. Because the Bay supports a diverse range of ecological communities and unique habitats—including oyster reefs, submerged aquatic vegetation (SAV), and benthic communities—changes to hydrodynamic conditions have the potential to impact natural systems and human activities.

Characterization of these processes is therefore important for the design and resilience of future bridge infrastructure and ensuring that construction and long-term operations minimize adverse impacts to navigation, shoreline stability, water quality, and habitat health. This study supports informed decision-making for the Tier 2 Study and contributes to broader coastal management and climate adaptation planning in the Chesapeake Bay.

2 Methodology

The methodology applied in this study was designed to evaluate hydrodynamic conditions in the vicinity of the Chesapeake Bay Bridge under existing and future build scenarios. A three-dimensional numerical modeling framework was implemented to simulate tidal circulation, water level variations, and flow velocities in the study area. The Delft3D Flexible Mesh (FM) Suite was selected for this analysis because of its proven capability to represent estuarine systems influenced by tides, winds, freshwater inflows, and complex shoreline geometries.

2.1 Model Approach

The 3-D hydrodynamic analysis conducted for this study utilized the D-Flow module within the Delft 3D Flexible Mesh (FM) Suite (Delft FM) (Version 2021.05). Delft FM D-FLOW, a three-dimensional (3D) hydrodynamic model, is a product of Deltares. This model solves the depth-averaged continuity equation (Equation 1) by employing the Navier Stokes equations for an incompressible fluid, incorporating Boussinesq and shallow water approximations (Equations 2 - 4). The continuity equation emerges from mass conservation while the Navier Stokes equations emerge from momentum conservation. Consistent with shallow water approximations, the model neglects vertical accelerations, simplifying the momentum conservation in the vertical direction to the hydrostatic pressure equation (Equation 4).

$$\boldsymbol{Q = \int_0^h (q_{in} - q_{out})\, dz + P - E} \quad (\mathbf{1})$$

Where Q represents fluxes in and out of a control volume; h is depth of the fluid with respect to mean surface level; q_{in} and q_{out} are local sources and sinks, respectively, of water per unit volume; P_{precip} is the non-local source term of precipitation; and E is the non-local sink term due to evaporation.

$$\frac{\partial u}{\partial t} + u\frac{\partial u}{\partial x} + v\frac{\partial u}{\partial y} + w\frac{\partial u}{\partial z} - fv = -\frac{1}{\rho_0}\frac{\partial P}{\partial x} + F_x + \frac{\partial}{\partial z}\left(v_V \frac{\partial u}{\partial z}\right) + M_x \quad (2)$$

$$\frac{\partial v}{\partial t} + u\frac{\partial v}{\partial x} + v\frac{\partial v}{\partial y} + w\frac{\partial v}{\partial z} - fu = -\frac{1}{\rho_0}\frac{\partial P}{\partial y} + F_y + \frac{\partial}{\partial z}\left(v_V \frac{\partial v}{\partial z}\right) + M_y \quad (3)$$

$$\frac{\partial P}{\partial z} = -\rho g h \quad (4)$$

Where u and v represent the velocity components of a fluid parcel in the x and y directions, respectively; f is the Coriolis parameter (dependent on latitude and the angular speed of the rotation of the Earth); ρ_0 is density of the incompressible fluid; P is pressure; F_x and F_y are forces emerging from any unbalanced Reynolds stresses; v_V is the vertical eddy viscosity coefficient; and M_x and M_y are moments imposed via momentum sources or sinks onto the fluid.

The above equations are applied to a spatially and temporally discretized region of interest. The spatial discretization relies on a finite volume (FV) approach, and the temporal discretization

employs a finite difference (FD) method. The volumes used for spatial discretization are defined by a generated mesh. The Delft FM D-FLOW model marches through each element of the mesh to produce solutions, starting with the boundary conditions.

Four key boundary conditions characterize model performance. The kinematic boundary condition maintains the impermeability of the free surface and bottom (i.e. fluid particles on the surface remain on the surface, and vice versa). The bed boundary condition defines components of the bed stress due to flow and waves. The surface boundary condition defines stress at the free surface as induced by winds. Finally, open boundary conditions are used to prescribe incoming waves into the finite volume, with direction assumed normal to the open boundary.

D-FLOW is particularly suitable for wind- and tide-dominated flows, such as those encountered in coastal applications, and it accommodates various inputs for boundary conditions and hydrodynamic forcings. These inputs comprise of tidal harmonic forcing, specified elevation and/or velocity time-series, surface stresses (wind and/or wave radiation stresses), slip or no-slip boundary conditions, and atmospheric pressure. Key parameters guiding the hydrodynamic model include water levels and bed bathymetry, bed roughness, wind forcing, and tidal harmonics.

Temperature and salinity dynamics were not incorporated into the model due to limitations of the three-dimensional Delft3D FM version applied in this study, which does not currently support three-dimensional temperature and salinity boundary conditions. While these parameters can influence density-driven circulation in estuarine systems, the primary objective of this study was to assess relative differences between existing and build alternatives under consistent forcing. By focusing on comparative changes in velocity and water levels across scenarios, the modeling results remain effective for evaluating hydrodynamic impacts of the build alternatives. This simplification aligns with this modeling study's objectives to highlight the relative differences in system response rather than provide absolute predictions of stratification or hydrodynamics.

2.2 Model Setup

2.2.1 Project Domain and Data Collection

The Delft3D model domain extended from 76.586W to 72.807W and from 38.077N to 39.665N, as shown in Figure 1. The model domain captured the Chesapeake Bay from upstream of the Potomac River to the Susquehanna River and incorporated the Susquehanna River up to the Conowingo Dam. This study used public environmental data to develop and calibrate the hydrodynamic model. Tidal data from two National Oceanic and Atmospheric Administration (NOAA) Operational Oceanographic Products and Services (CO-OPS) stations were used to develop tidal boundary conditions. Wind speed, wind direction, and atmospheric pressure data from five NOAA National Data Buoy Center (NDBC) stations were used to develop wind boundary conditions for the hydrodynamic model.

Finally, a discharge boundary condition at the Susquehanna River was developed using discharge data collected by the United States Geological Survey (USGS). Five NOAA tidal stations were used

to calibrate the model. Three NOAA current prediction stations and observation data from two NOAA active current stations were used. The stations used to develop the hydrodynamic model boundary conditions and calibrate the model are presented in Table 1 and Figure 1.

Table 1. Data Sources

Type of Station	Application	Station Name	Longitude (°W)	Latitude (°N)
Tidal Elevation	Boundary Condition	NOAA 8571421	76.04	38.22
		NOAA 8573927	75.81	39.53
	Model Calibration	NOAA 8573927	-75.81	39.53
		NOAA 8573364	-76.24	39.21
		NOAA 8574680	-76.58	39.27
		NOAA 8571421	-76.04	38.22
		NOAA 8575512	-76.48	38.98
River Discharge	Boundary Condition	USGS 01578310	-76.17	39.66
Current Measurement	Model Calibration	cb1001	-76.38	38.40
		cb1101	-76.38	38.98
		CHB0301	-76.27	38.30
		CHB0302	-76.30	39.07
		CHB0304	-76.36	38.49
Wind Measurement	Boundary Condition	NDBC tcbm2	76.24	39.21
		NDBC tplm2	76.44	38.90
		NDBC fskm2	76.53	39.22
		NDBC 44062	76.42	38.56
		NDBC 44063	76.45	38.96

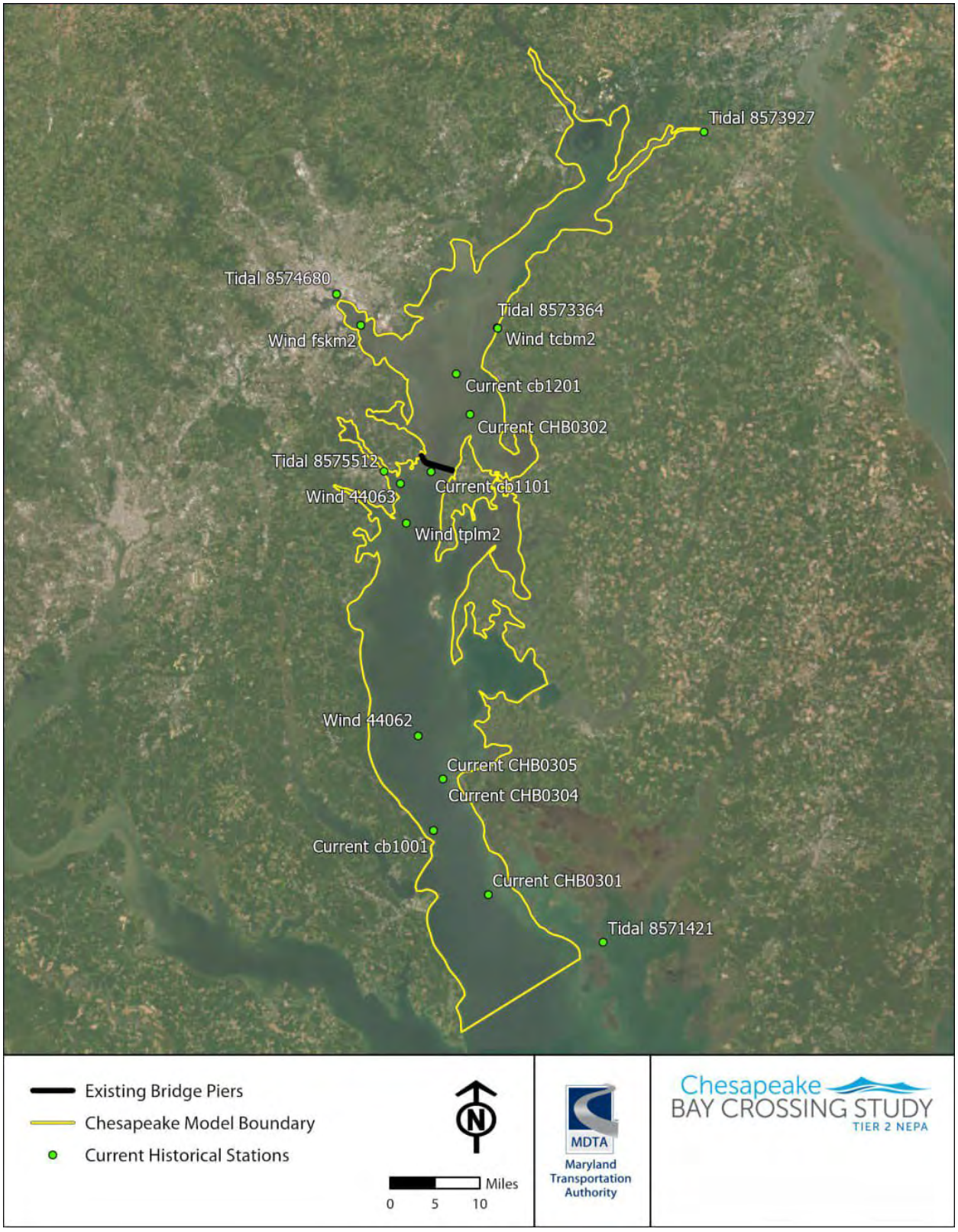


Figure 1. Observation Points

2.2.2 Grid and Bathymetry

The shoreline of the model domain was developed with recent shoreline data from the Maryland Department of Natural Resources (MDNR), which was projected into the geographic coordinate system World Geodetic System (WGS) 1984. The model grid domain has a minimum horizontal resolution of approximately 100 meters and a maximum of 1 kilometer, with finer resolution near the Bay Bridge and along the Susquehanna River.

The bathymetry sources include recent U.S. Army Corps of Engineers (USACE) hydrographic survey data incorporated in the Chesapeake Bay Topobathymetric DEM (TBDEM), with surveys extending through 2015, and more recent navigation channel condition monitoring by the USACE Baltimore District documented as late as 2023.

With respect to the vertical distribution, a 6 sigma-layer distribution was implemented. The number of layers was selected to balance computational efficiency and representation of conditions. Model elevations were with respect to the NAVD88 vertical datum.

2.3 Structure Representation

In the Delft3D model, structures were represented by thin dams for both existing (Figure 2) and the build alternative (Figure 3) conditions. Representation of these structures required the specification of cells where flow was restricted or blocked to approximate the physical location of bridge piers. For the build alternative conditions, new pier placements and changes to span spacing were explicitly encoded into the model grid to accurately capture the hydraulic influence of these structures on surrounding flow fields. Other structures represented in the model by thin dams included shoreline stabilization features (e.g., groins, jetties), which were similarly implemented by modifying the grid and applying appropriate flow resistance parameters. By incorporating these structural representations, the model captures the influence of both existing and build alternative alignments, as well as other pertinent coastal structures.

2.4 Boundary Conditions

2.4.1 Tides

Water levels were prescribed as a function of time at the two tidal boundary conditions using 6-minute observation data from NOAA (Figure 1). In Delft3D FM, tidal boundary conditions are typically defined by specifying water level time series at open boundaries of the computational domain, which then propagate inward through the model according to the governing hydrodynamic equations. The use of high-frequency (6-minute) NOAA observations properly resolved the tidal variability, including higher-frequency fluctuations such as tidal asymmetry and spring-neap modulation.

2.4.2 Wind

Atmospheric pressure and u- and v-components of wind speed were applied to the model based on 6-minute observation data from NOAA. In Delft3D FM, wind and pressure boundary conditions

are incorporated as surface forcing terms that act directly on the free surface and influence circulation patterns throughout the domain. The use of 6-minute observational data allowed for the accurate representation of short-term variability in wind forcing, such as gusts and directional shifts, as well as barometric pressure changes associated with passing weather systems.



Figure 2. Existing bridge pier alignment represented in the model.



Figure 3. MDTA RPA bridge pier alignment represented in the model.

2.4.3 River Discharge

The discharge boundary condition at the Susquehanna River was prescribed using high-resolution 15-minute flow data obtained from the USGS monitoring station at Conowingo Dam. This dataset captures the temporal variability of river discharge, including short-term fluctuations driven by precipitation events and reservoir operations, allowing the model to represent riverine contributions to the Bay accurately. In the Delft3D-FM model, the Susquehanna discharge was applied at the upstream river boundary as a flow rate time series, ensuring that both magnitude and timing of peak and low flows were represented in the hydrodynamic simulations. Discharges from smaller tributaries entering the Chesapeake Bay were not explicitly included in the model, as their contributions are small relative to the dominant tidal forcing.

2.5 Model Calibration of Roughness Coefficient

Calibration of the model hydrodynamics was important to maintain the accuracy and reliability of the Delft3D model outputs. Calibration involves the refinement of model parameters and input data to align simulated tides and currents with observed values, thereby enhancing the model's predictive capabilities of hydrodynamic processes.

A bottom roughness coefficient was used to calibrate the model. Bottom roughness is a fundamental parameter that represents the resistance to flow within the water body and is essential for accurately predicting flow velocities and distributions. The calibration process involved adjusting the values of roughness based on bottom substrate to achieve the best

agreement between simulated and observed flow velocities. Roughness coefficients were either specified as Manning's 'n' or Chezy coefficient as part of the calibration process to evaluate which reduced error.

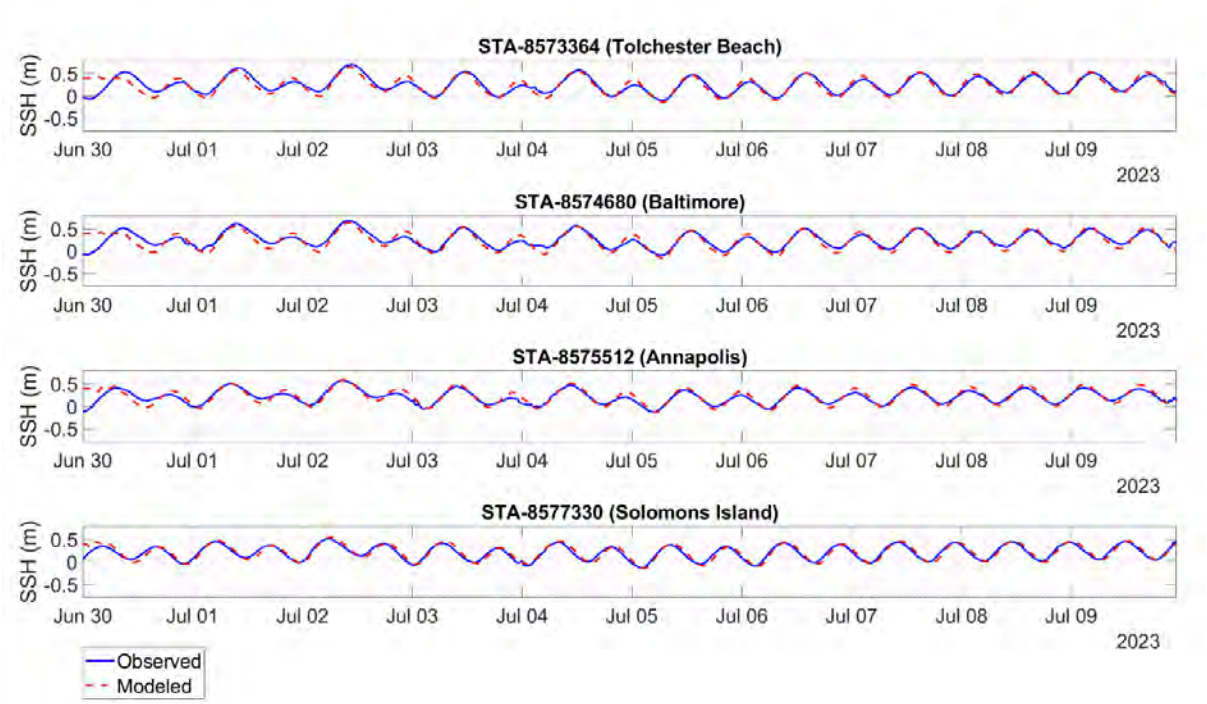


Figure 4. Tide Calibration

Table 2. Water level calibration statistics

Water Level Statistics					
Location	**Station ID**	**R^2**	**RMSE (m)**	**Mean Water Level (observed) (m NAVD88)**	**Mean Water Level (modeled) (m NAVD88)**
Manning 0.023					
Tolchester Beach	8573364	0.78	0.11	0.25	0.24
Baltimore	8574680	0.77	0.11	0.26	0.24
Annapolis	8575512	0.80	0.09	0.21	0.23
Solomons Island	8577330	0.89	0.06	0.21	0.21
Manning 0.03					
Tolchester Beach	8573364	0.78	0.09	0.25	0.24
Baltimore	8574680	0.76	0.09	0.26	0.24
Annapolis	8575512	0.79	0.08	0.21	0.23
Solomons Island	8577330	0.89	0.05	0.21	0.21
Manning 0.05					
Tolchester Beach	8573364	0.73	0.10	0.25	0.24
Baltimore	8574680	0.71	0.09	0.26	0.24
Annapolis	8575512	0.75	0.07	0.21	0.23
Solomons Island	8577330	0.90	0.05	0.21	0.22
Chezy 70					
Tolchester Beach	8573364	0.77	0.11	0.25	0.24
Baltimore	8574680	0.77	0.11	0.26	0.24
Annapolis	8575512	0.81	0.09	0.21	0.23
Solomons Island	8577330	0.90	0.06	0.21	0.21

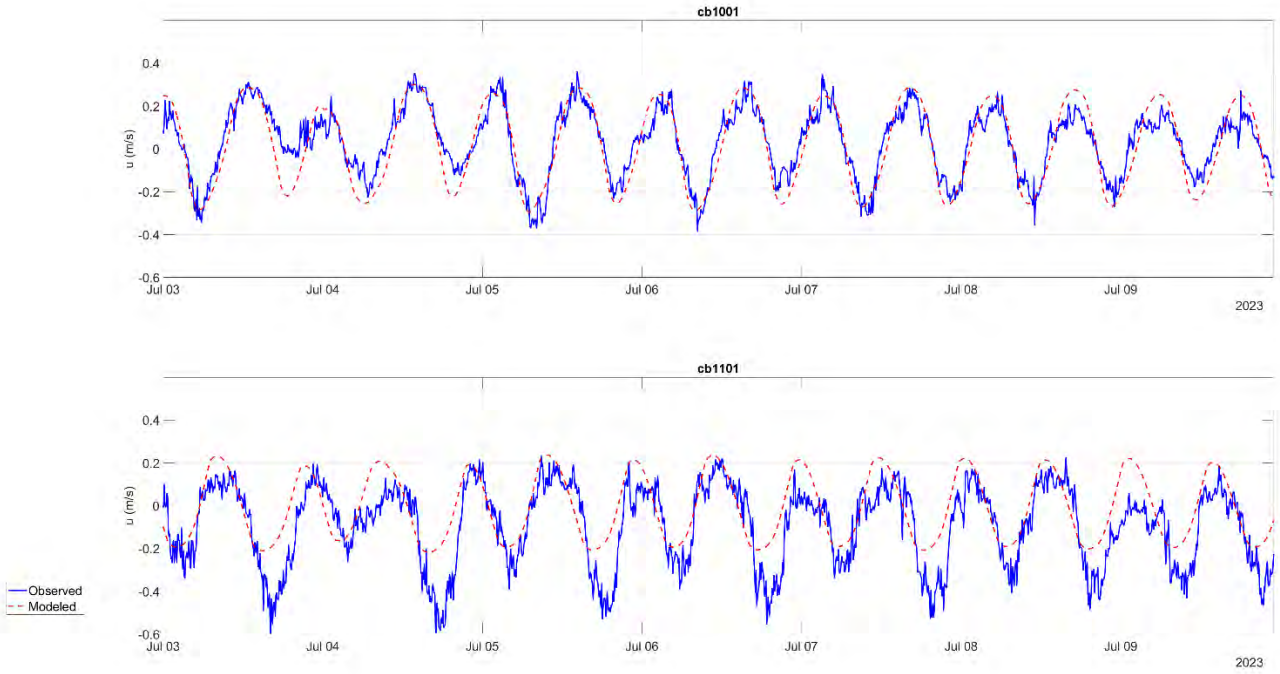


Figure 5. Velocity Calibration U-Velocity Component

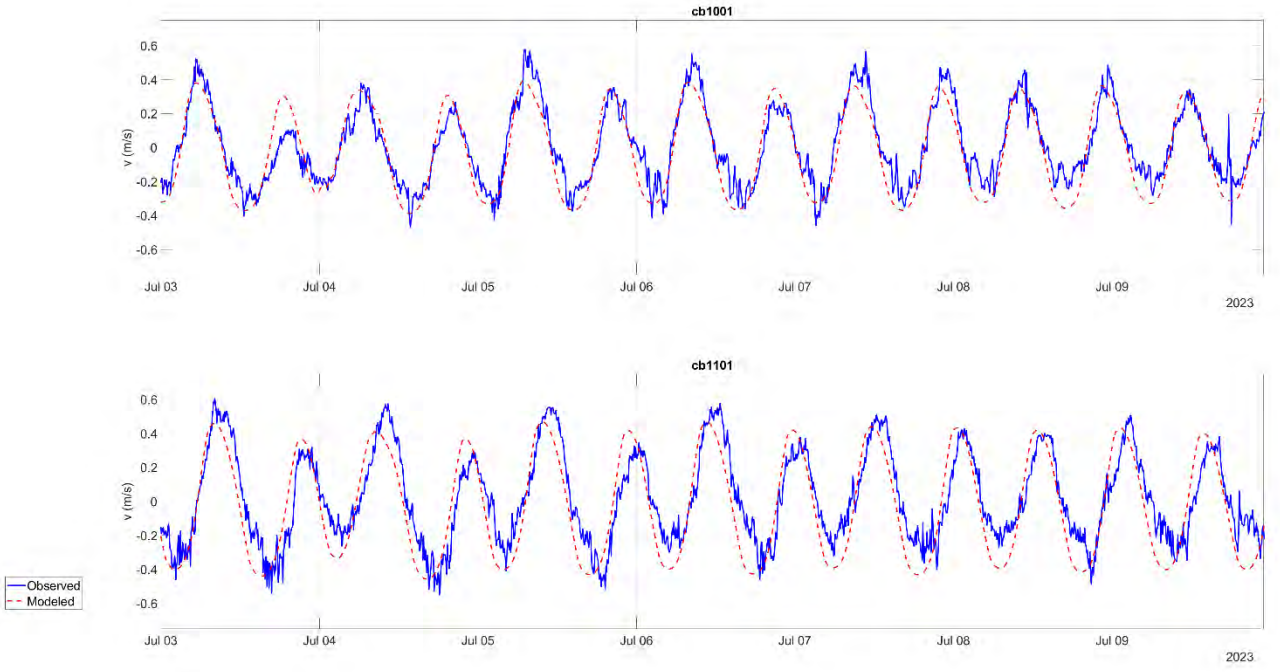


Figure 6. Velocity Calibration V-Velocity Component

3 Results

The model was run for the period from June 30 to July 9, 2023, with three days of model spin-up to allow the system to stabilize prior to the analysis window. This period was selected because it encompassed large tidal swings associated with a spring tide during the time period in which collected data were available. By focusing on a period with pronounced tidal forcing, the model results allow for an assessment of the influence of the bridge build alternative on flow velocities during conditions which may impact environmental conditions. The following sections summarize these results, highlighting differences between existing and build alternative conditions and their potential implications for the surrounding estuarine system.

3.1 Scenarios Evaluated

To evaluate the potential hydrodynamic impacts associated with the Chesapeake Bay Bridge and build alternative conditions in the surrounding system, four scenarios were developed and simulated using the hydrodynamic model. A summary of each scenario and its representation in the model is provided below.

- Existing Bridge Conditions (Present Day): This scenario represents existing hydrodynamic conditions in the Chesapeake Bay Bridge study area. Bathymetry, shoreline configuration, and existing bridge infrastructure were represented in the model as surveyed. Boundary conditions reflect present-day tidal forcing, freshwater inflows, and meteorological conditions, providing a baseline for comparison against the build alternative and future conditions.

- Build Alternative Conditions (Present Day): The build alternative conditions (present day) scenario incorporates conceptual design elements associated with bridge modifications and associated structures. These modifications include adjustments to pier placement. All other forcing conditions (tides, inflows, meteorology) are held consistent with the existing conditions scenario to isolate the influence of structural changes.

- Existing Bridge Conditions (2100): This future condition scenario reflects projected changes in hydrodynamics due to sea level change, assuming no structural modifications to the bridge beyond current conditions. This scenario allows for evaluation of how changes in environmental conditions alter tidal circulation and velocity distributions in the study area.

- Build Alternative Conditions (2100): This scenario combines the build alternative structural modifications (as described in the Build Alternative Conditions scenario) with the projected 2100 future conditions (as described in the existing bridge conditions [2100] scenario). The representation includes modified pier and channel configurations under a higher sea level baseline. The purpose of this scenario is to assess the interaction of long-term water

level change with the build alternative conditions and to evaluate potential cumulative impacts on tidal hydrodynamics, velocity magnitude.

3.2 Velocity Magnitude

Spatially varying current velocity results from the modeled existing conditions during a period of strong tidal flows are shown for the entire study area in Figure 7. These results depict spatial variations in current velocity across the study area with color-coded contours overlayed onto a geographic base map to show patterns of water movement and distribution during peak flow. Current velocities are more pronounced in the model domain due to the Bay's bathymetry, coastline morphology, and structures (e.g., existing Bay Bridge) which can constrict flows. Deeper channels represented by the model bathymetry exhibit stronger tidal currents, while shallower regions and tributary mouths experience reduced velocities. For example, faster currents are found in the constricted parts of the Bay (e.g., between Sandy Point and Kent Island) in the vicinity of the existing bridge.

Peak modeled velocities in the vicinity of the bridge during the simulation period were found to be consistent along the bridge channel between the piers. Under present-day water levels, average peak velocities between the bridge spans were 1.7 to 2.1 ft/s for the existing bridge piers. For the build alternative, average peak velocities were slightly higher, ranging from 2.6 to 3.1 ft/s, reflecting minor flow constriction effects from the revised pier geometry. These increases are consistent with higher water levels allowing for greater overall flow energy and slightly increased velocities through the bridge channel. A velocity maximum over the entire model domain of 3.1 ft/s was found near the Sandy Point Shoal Light under present-day conditions, with slightly higher velocities under future water levels. These results indicate that while local variations exist, the overall effect of the build alternative is a modest increase in velocities along the bridge channel, with future sea-level change further amplifying these changes.

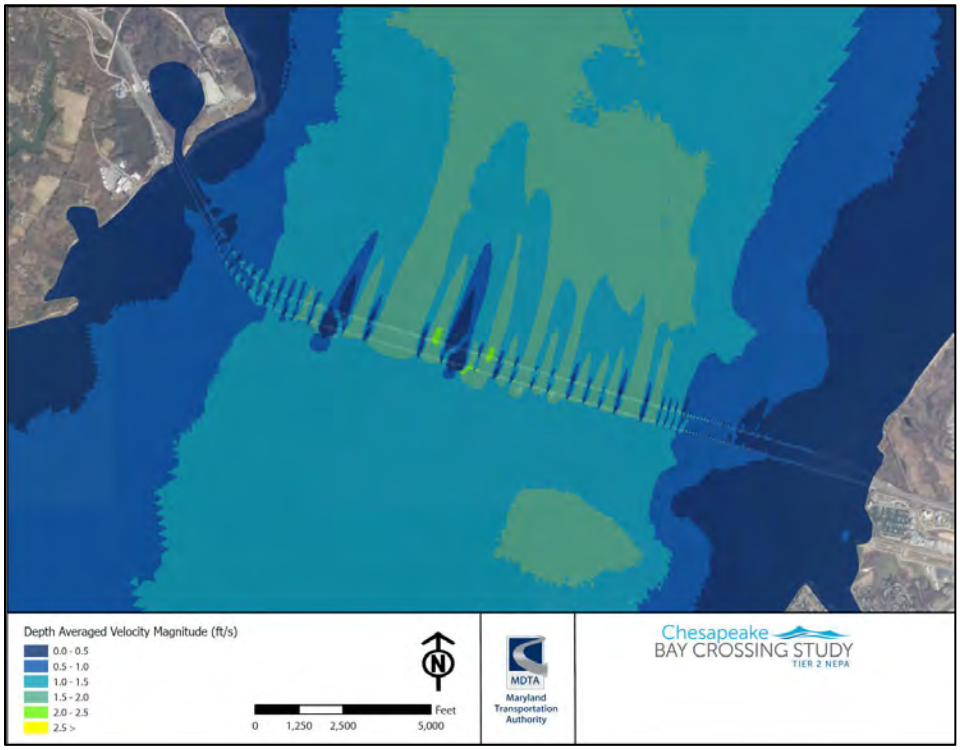


Figure 7. Peak velocities throughout the model domain during a flood tide at 8:30 AM on 07/03/2025 for existing bridge conditions.

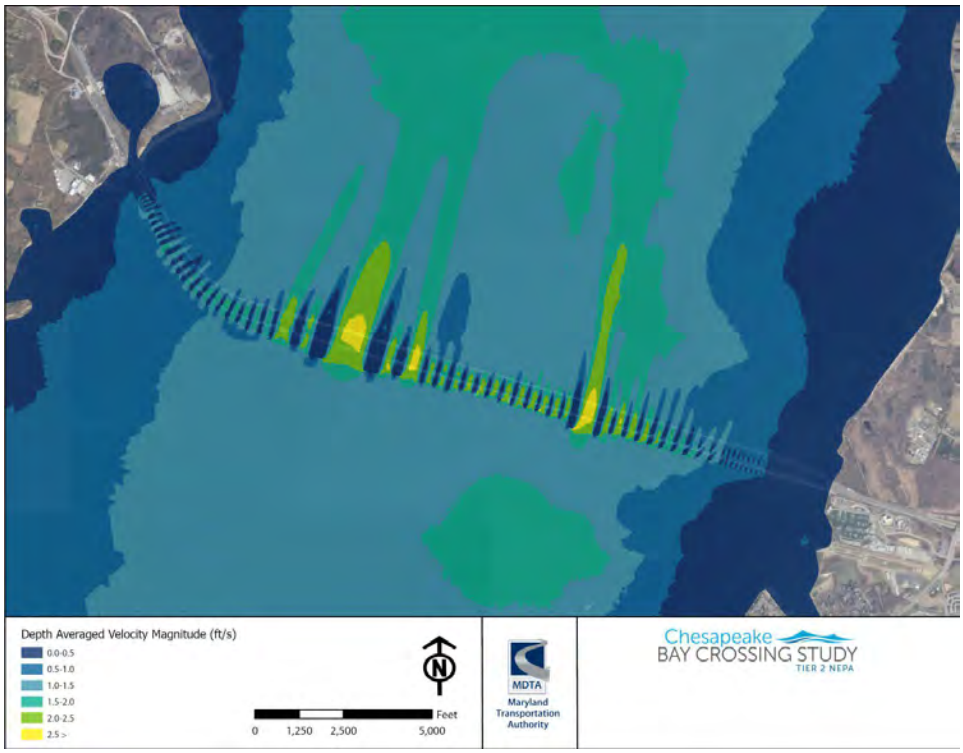


Figure 8. Peak velocities throughout the model domain during a flood tide at 8:30 AM on 07/03/2025 for build alternative conditions

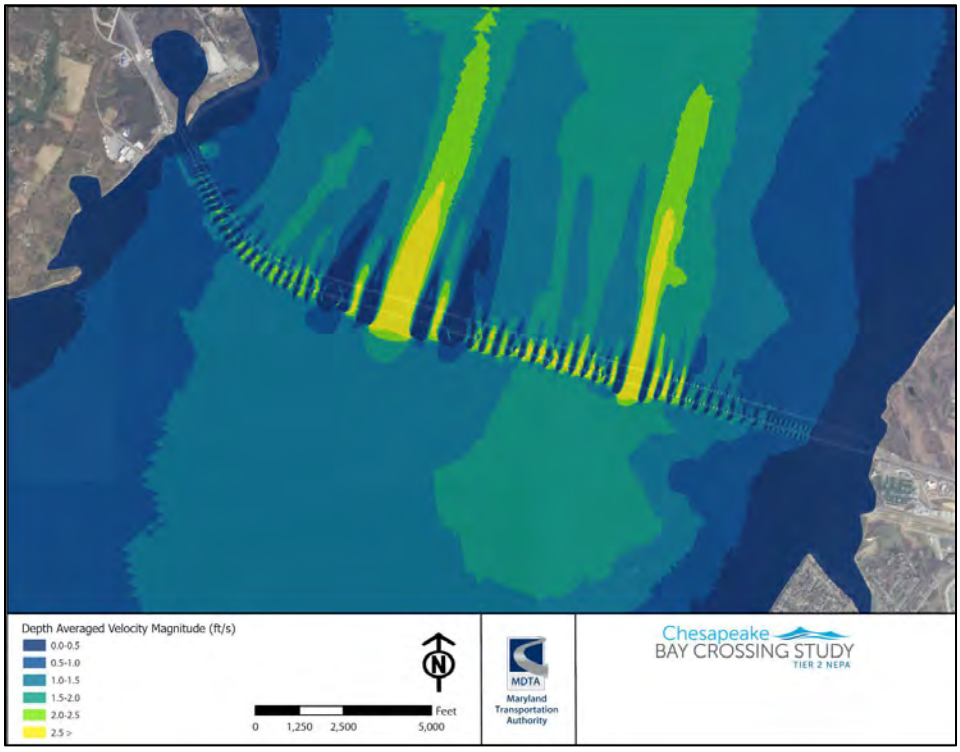


Figure 9. Peak velocities throughout the model domain during a flood tide at 8:30 AM on 07/03/2025 for existing bridge conditions in 2100.

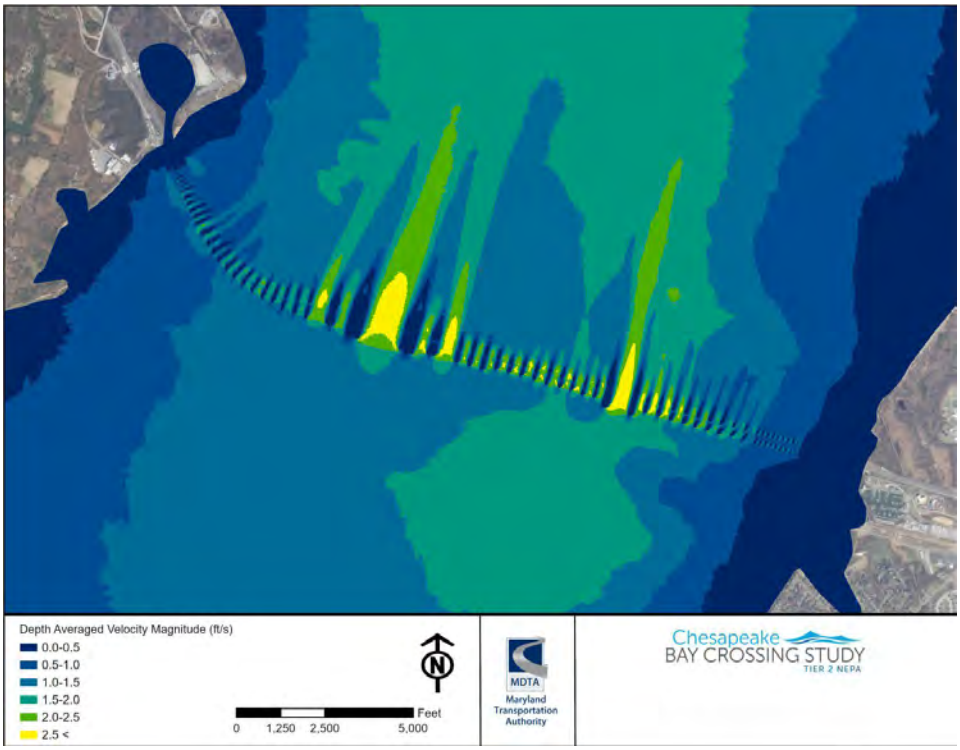


Figure 10. Peak velocities throughout the model domain during a flood tide at 8:30 AM on 07/03/2025 for build alternative conditions in 2100.

4 Environmental Impacts

The hydrodynamic model was applied to evaluate the build alternative scenarios in the vicinity of the Chesapeake Bay Bridge relative to existing conditions. These scenarios were designed to assess how potential modifications and projected future conditions (i.e., change in water levels) could influence tidal circulation and velocity distributions in the study area. The following sections discuss the analysis of primarily differences in velocity and the environmental impacts of these differences.

4.1 Velocity Magnitude Differences

The main evaluation criteria used as part of this analysis was difference in velocity magnitude. The velocity magnitude difference evaluated the maximum difference in velocity between the build alternative conditions and existing conditions over all time steps. The goal of this analysis was to identify areas where currents were increased or decreased due to the bridge pier build alternative. The following sub-sections discuss observed trends between both existing and build alternative structures, and existing and future sea levels.

Comparison of time series of flow velocities indicates that under the build alternative pier configuration, peak velocities are higher within the main channel between the bridge spans compared to existing conditions, reflecting localized flow constriction and acceleration around the new pier geometry. However, these differences diminish with distance from the bridge, and approximately 0.5 miles downstream and upstream, velocities under the build alternative conditions closely match those of the existing bridge. This pattern demonstrates that while the build alternative pier configuration influence flow within the immediate channel, their effects on hydrodynamics are localized, with conditions returning to near-natural flow velocities within a short distance of the bridge.



Figure 11. Location of observation points.

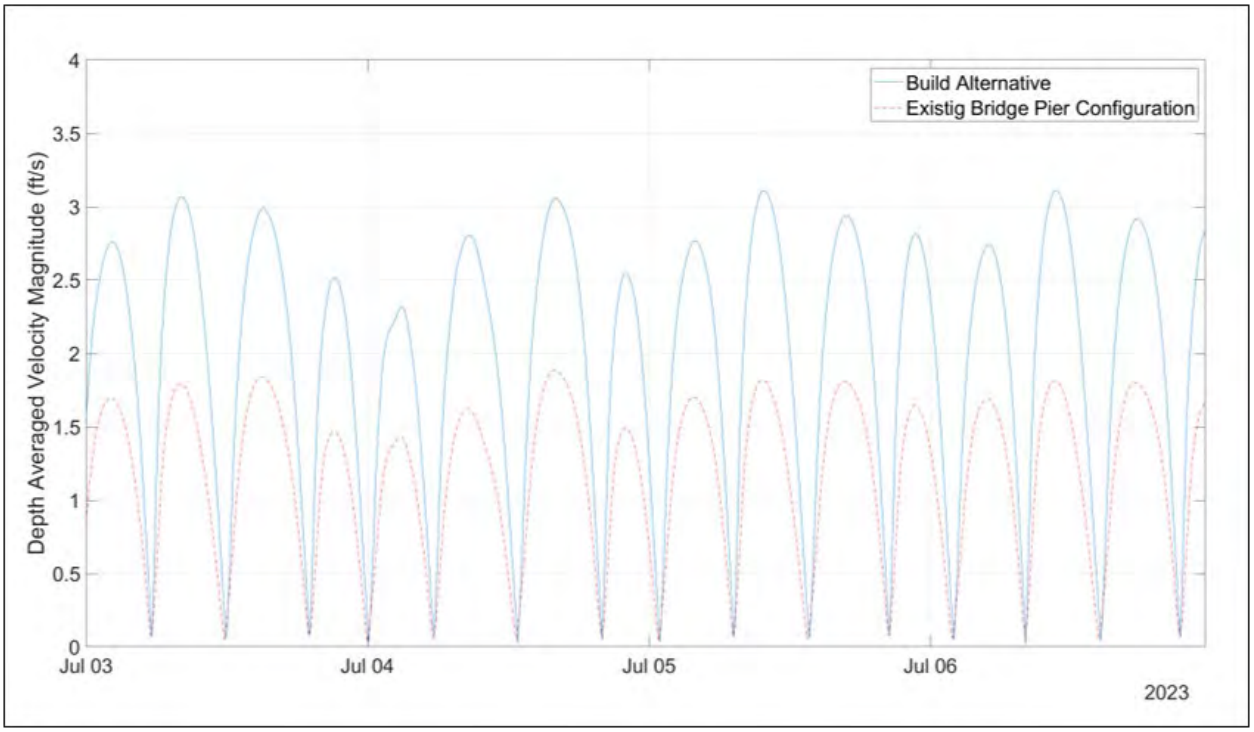


Figure 12. Time series comparison at a point within the main channel (Observation Point 1) for existing and build alternative pier configuration.

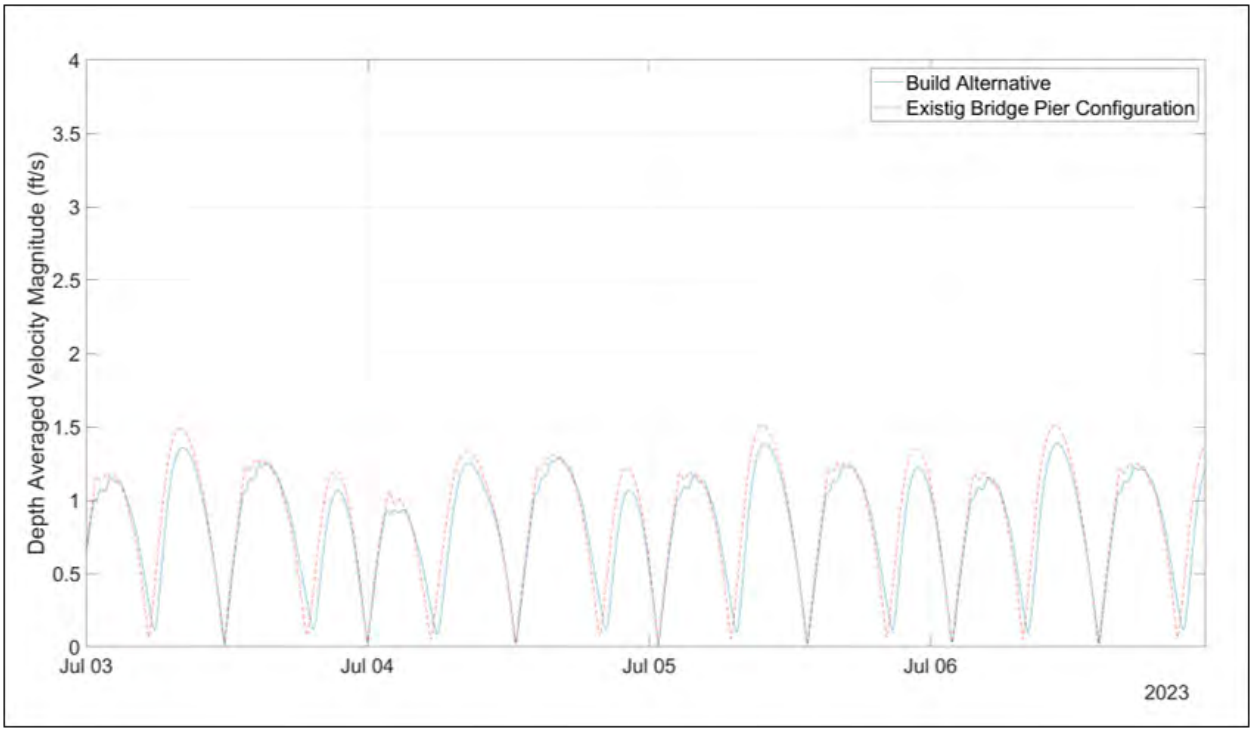


Figure 13. Time series comparison at a point 0.5 miles beyond the main channel bridge span (Observation Point 2) for existing and build alternative pier configuration.

4.1.1 Existing vs. Build Alternative (Present Day Water Level)

Modeling results indicate that differences in velocity between existing and build alternative conditions are primarily driven by changes in bridge pier position and span spacing. Areas where the build alternative conditions introduces narrower spans or increased pier density show localized increases in flow velocity, as the constricted spacing accelerates water moving through the channel. Conversely, locations with wider spans exhibit reduced velocities relative to existing conditions, reflecting the reduced hydraulic resistance in those areas.

These differences in velocities can be seen in Figure 14 for the bottom layer and Figure 15 for the surface layer during peak modeled flow conditions. Substantial differences in velocity (i.e., 0.66 ft/s) are found to be constrained within 0.6 miles from the bridge near the bottom and within one mile of the bridge at the surface layer. Larger differences in velocity, further from the bridge were found to be for the surface layer. The largest increases in velocity occur in the location of which the main span piers from the existing bridge are removed. Some increases in velocity are also found near the abutment close to Kent Island, however these changes are mostly constrained between each bridge approach. Decreases in velocity are found near the main channel, as well as the center of the bridge span due to the increases in span width.



Figure 14. Velocity difference between existing and build alternative conditions during peak velocity at 8:30 AM on 7/3/2025 for the bottom layer.

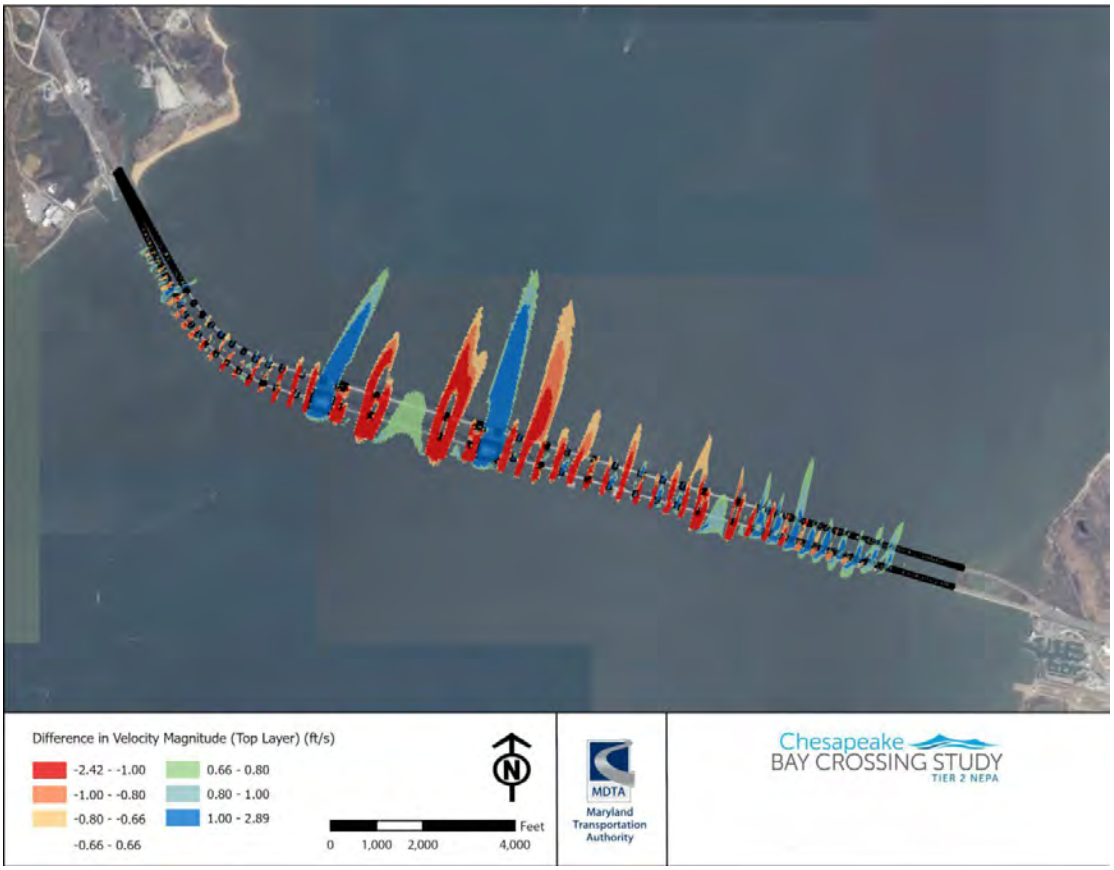


Figure 15. Velocity difference between existing and build alternative during peak velocity at 8:30 AM on 7/3/2025 for the surface layer.

4.1.2 Existing vs. Build Alternative (2100 Water Level)

Modeling results under the 2100 water level change scenario indicate that differences in velocity between existing and build alternative bridge pier conditions follow similar patterns to present-day simulations but are slightly amplified due to higher baseline water levels. As in present-day conditions, changes in velocity are primarily driven by differences in bridge pier position and span spacing. Areas where the build alternative configuration introduces narrower spans or increased pier density show localized increases in velocity, while areas with wider spans exhibit reduced velocities relative to existing conditions. These differences can be seen in Figure 16 for the bottom layer and Figure 17 for the surface layer.

Larger differences in velocity (i.e., 0.66 ft/s or greater) remain spatially constrained to within approximately one mile of the bridge for both the bottom and surface layer. The largest changes again occurring on either side of the main channel, similar to the present-day differences, where the main span piers from the existing condition are removed. Larger differences in velocity are more apparent in the surface layer than at depth, reflecting the influence of tidal forcing and reduced bottom friction under higher water levels associated with changes to sea level.

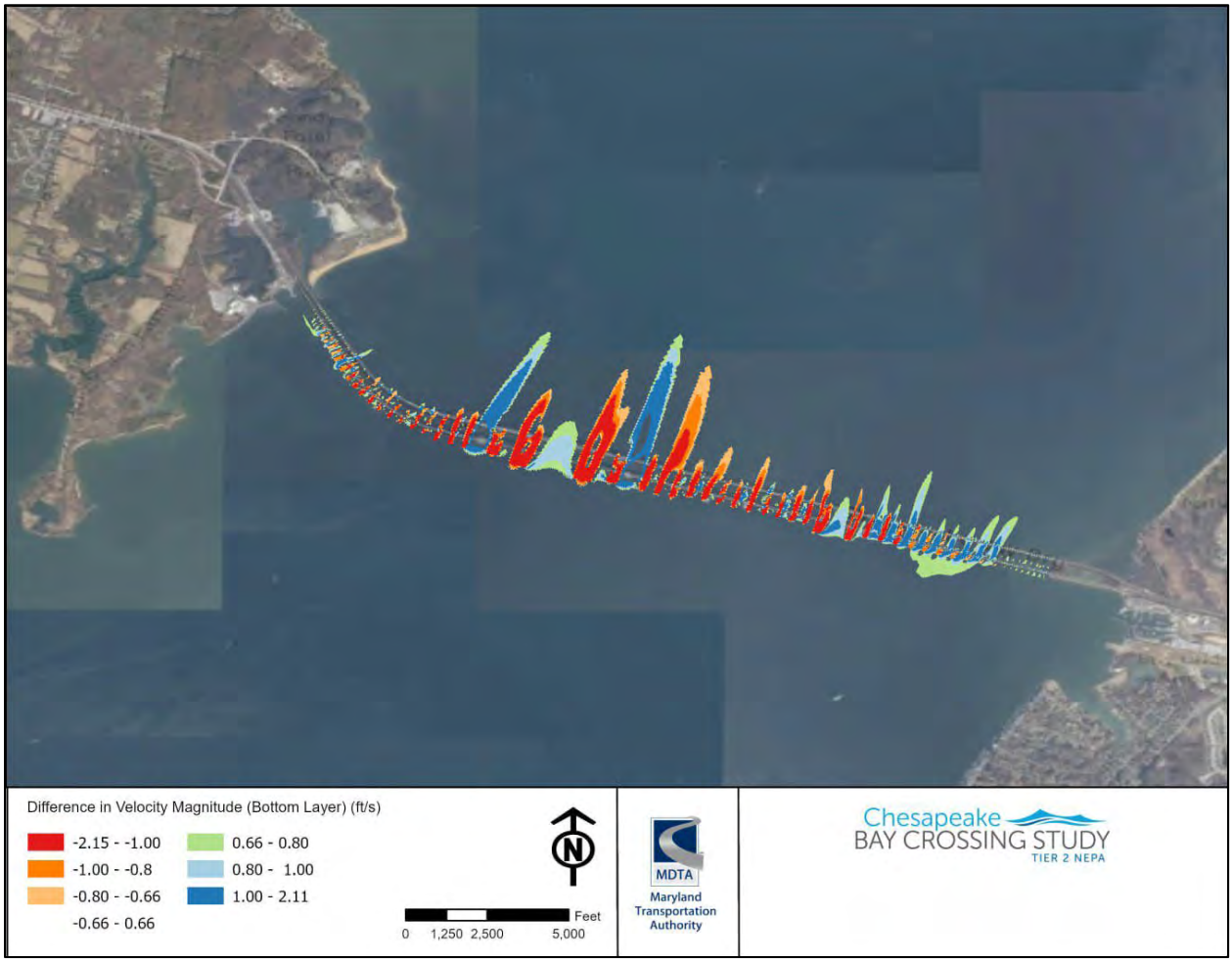


Figure 16. Velocity difference between existing and build alternative during peak velocity at 8:30 AM on 7/3/2025 for the bottom layer with 3.5 ft of sea level change.

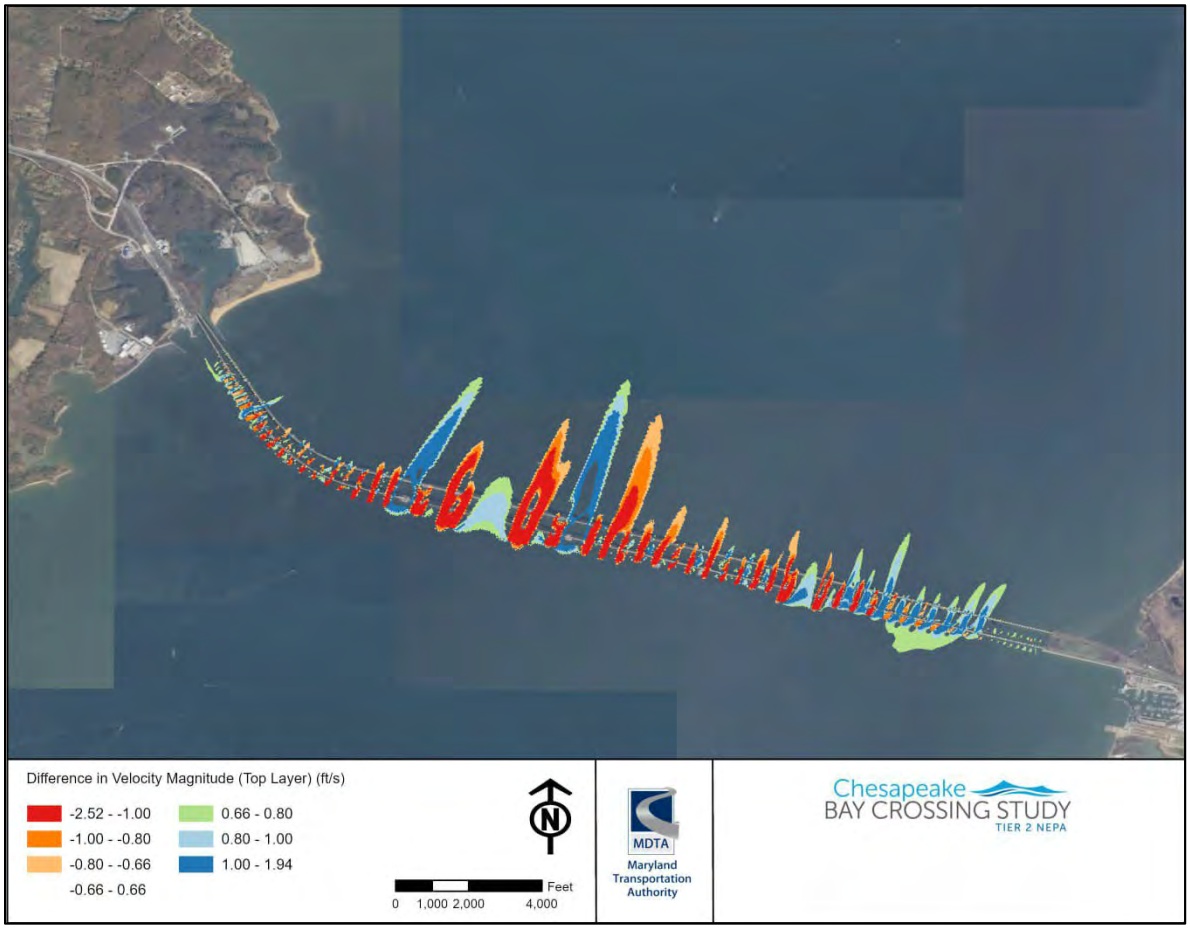


Figure 17. Velocity difference between existing and build alternative during peak velocity at 8:30 AM on 7/3/2025 for the surface layer with 3.5 ft of sea level change.

4.2 Potential Impacts of Hydrodynamic Changes

Analysis of modeled velocity magnitude differences between existing and build alternative conditions indicates that there would be areas of increases in near-bed velocity primarily within the immediate vicinity of bridge piers. The piers modify near-bed flow velocities, turbulence, and shear stresses, leading to changes in sediment deposition and erosion patterns. These changes to sediment transport and deposition patterns, in turn, impact aquatic habitats such as SAV, oyster reefs, and other benthic organisms that depend on stable substrates and water quality conditions. Due to bridge configuration differences where the existing and build alternative condition piers do not align, velocity changes are indicative of reduced obstructions where piers are removed and increased obstructions where piers are added. The following sections discuss the implications of some of those changes in velocity.

4.2.1 Sediment Transport

Changes to hydrodynamics in the vicinity of the bridge were evaluated to identify anticipated impacts to sediment transport. To establish the criteria of threshold velocity increases that would

displace existing sediment with the build alternative, empirical studies were reviewed. These studies suggest that for fine sediments (10–20 μm) which is characteristic of the bottom along most of the bridge (Figure 18), the critical depth-averaged velocity for initiation of motion is approximately 0.66 ft/s (Van Rijn, 2020). This threshold serves as a general baseline for determining whether flow conditions may entrain loose sediment from the seabed.

Through this framework, initiation of sediment motion is characterized by a critical shear stress dependent on fluid and grain properties. While specific values for the project sediments were not measured, the experimental benchmarks (e.g., 0.66 ft/s) remain useful indicators of potential bed mobilization, especially where grain sizes align with the fine-sand range. In this study, peak velocity enhancements in the vicinity of bridge piers approached and, in some cases, exceeded the ~0.66 ft/s benchmark—especially during peak tidal flow events under build alternative structural configurations. These velocity differences are localized to within 500 feet of the bridge and decay rapidly with distance from the piers. Broader channel or shoreline erosion impacts are unlikely given the rapid attenuation of velocity differences. It is also important to note that these findings were modeled under peak flow conditions and would lessen during average flow conditions.



Figure 18. Mapped sediment layers relative to near bed velocities

4.2.2 Benthic Habitat

Model results suggest that the build alternative bridge pier configuration may lead to localized changes in flow velocities between bridge spans, which as discussed in the previous section could affect the transport and deposition of silty fine sediments in the vicinity of the bridge. In general, areas within 500 ft of the piers will experience changes in shear stress, promoting sediment resuspension during larger tidal flows. These changes in sediment dynamics have several potential implications for benthic habitat:

- Habitat Smothering: Increased deposition of fine, silty sediments could smother benthic organisms, particularly sessile species such as mussels, oysters, and benthic infauna. Sediment accumulation can reduce oxygen availability and hinder feeding or burrowing activities.

- Substrate Alteration: Resuspension and downstream transport may alter the sediment composition, leading to shifts from coarser to finer substrates or vice versa. Such changes can favor different benthic communities, potentially reducing habitat suitability for species adapted to the existing sediment type.

- Nutrient Dynamics: Fine sediments often carry nutrients. Changes in sediment transport and deposition patterns could alter nutrient fluxes to benthic organisms, potentially impacting growth and reproductive success, as well as influencing local water quality.

Overall, while modeled changes in flow velocities near the build alternative bridge piers are modest, localized impacts to benthic habitat from increased deposition of silty fine sediments are possible soon after the construction of the new bridge piers. Adaptive management strategies, such as targeted habitat restoration or sediment monitoring, may help mitigate potential adverse effects.

4.2.3 Navigation

Model results indicate that the build alternative configuration would result in a modest increase in flow velocities through the bridge spans relative to the existing conditions at the surface. Changes in the main channel were found to be small (i.e., <1.0 ft/s) during peak flow, and would not impact navigation. Average peak velocities between spans are projected to increase, which may impact vessel maneuvering and the handling of smaller recreational and commercial vessels, particularly during peak tidal flows. Operators may need to make minor adjustments to maintain course and ensure safe passage. Overall, the modeled increases in flow velocities are not expected to create hazards for navigation under normal conditions. However, continued monitoring of currents post-construction is recommended to confirm model predictions and ensure that vessel operators are aware of any localized flow changes.

4.3 Summary

Analysis of modeled velocity magnitude differences between existing and build alternative conditions in the hydrodynamic model developed to evaluate impacts on the Bay bottom from the placement of new bridge piers (Natural Environmental Technical Report, Appendix F) indicates that there would be areas of increases in near-bed velocity primarily within the immediate vicinity of bridge piers. The piers modify flow velocities, turbulence, and shear stresses, leading to changes in sediment deposition and erosion patterns. These changes to sediment transport and deposition patterns, in turn, impact aquatic habitats such as SAV, oyster reefs, and other benthic organisms that depend on stable substrates and water quality conditions.

In general, areas within 500 ft of the piers experience changes in shear stress , promoting sediment resuspension and deposition during larger tidal events. Resuspension and downstream transport may alter the sediment composition, leading to shifts from coarser to finer substrates or vice versa in the vicinity of the structures. Such changes can be a benefit or detriment to different benthic communities, potentially changing habitat suitability and nutrient dynamics for species adapted to the existing sediment type. Modeled changes in flow velocities near the build alternative configuration are modest and long term impacts are not anticipated, however localized impacts to benthic habitat from increased deposition of silty fine sediments are possible soon after the construction of the new bridge piers. Alternatives F and G would require the largest bridge piers and would thus have the greatest potential for changes to flows, sediment transport and benthic habitats.

APPENDIX G: SHORELINE CHANGE ASSESSMENT REPORT

Appendix G:
Shoreline Change Impacts Assessment

October 2025

TABLE OF CONTENTS

1 INTRODUCTION 1

2 BACKGROUND AND METHODOLOGY 2

2.1 Historical Change Rates 2

2.2 Future Shoreline Positions 3

3 EXISTING AND HISTORICAL CONDITIONS 4

3.1 Shoreline Change Rates 8

4 FUTURE CONDITIONS AND ENVIRONMENTAL IMPACTS 14

4.1 Future Shoreline Change (Existing Bridge) 14

4.2 Future Shoreline Impacts from Proposed Bridge 15

4.3 Summary 16

LIST OF FIGURES

Figure 1-1: Location and Reference Point Map 2
Figure 2-1: Example DSAS transects (https://coast.noaa.gov/data/digitalcoast/img/tools/dsas_2.jpg) 3
Figure 3-1: Historical Shoreline Positions by Decade, Anne Arundel County North 5
Figure 3-2: Historical Shoreline Positions by Decade, Anne Arundel County South 6
Figure 3-3: Historical Shoreline Positions by Decade, Queen Anne's County North 7
Figure 3-4: Historical Shoreline Positions by Decade, Queen Anne's County South 8
Figure 3-5: Anne Arundel County North Shoreline Change Rates (1930 to 2010). 10
Figure 3-6: Anne Arundel County South Shoreline Change Rates (1930 to 2010). 11
Figure 3-7: Queen Anne's County North Shoreline Change Rates (1930 to 2010). 12
Figure 3-8: Queen Anne's County South Shoreline Change Rates (1930 to 2010). 13

LIST OF TABLES

Table 1. Historical Shoreline Change Rates 9

1 Introduction

This shoreline change assessment of the coastal landscape surrounding the William Preston Lane, Jr. Memorial (Bay) Bridge has been prepared as part of the Chesapeake Bay Crossing Study: Tier 2 NEPA (Tier 2 Study) Environmental Impact Statement (EIS). This assessment provides understanding of existing conditions as well as potential future conditions resulting from the EIS build alternatives. This assessment also supports the broader environmental impact analysis by identifying areas of shoreline erosion and accretion that may be influenced by infrastructure improvements. The study area, as shown in Figure 1-1, encompasses both natural and developed shorelines within the project corridor, where coastal processes are shaped by a combination of wave action, sea level change, sediment transport, and human activity.

The shoreline change assessment was carried out in two phases: a historical analysis and a future conditions projection. The historical component involved quantified long-term trends in shoreline movement to provide a baseline for understanding how the shoreline has responded to past environmental forces and development pressures. In areas without shoreline armoring or engineered structures, representative locations were selected and numbered (Figure 1-1) to serve as reference points for evaluating natural shoreline behavior over time. These shoreline sections were bounded by two large shoreline structures.

Building on the historical analysis, future shoreline conditions were projected to assess potential impacts of sea level change. Using sea level change trends and the Bruun Rule, shoreline recession was estimated for the years 2050 and 2100. These projections help identify areas of increased vulnerability and inform the evaluation of environmental effects associated with the build alternatives.

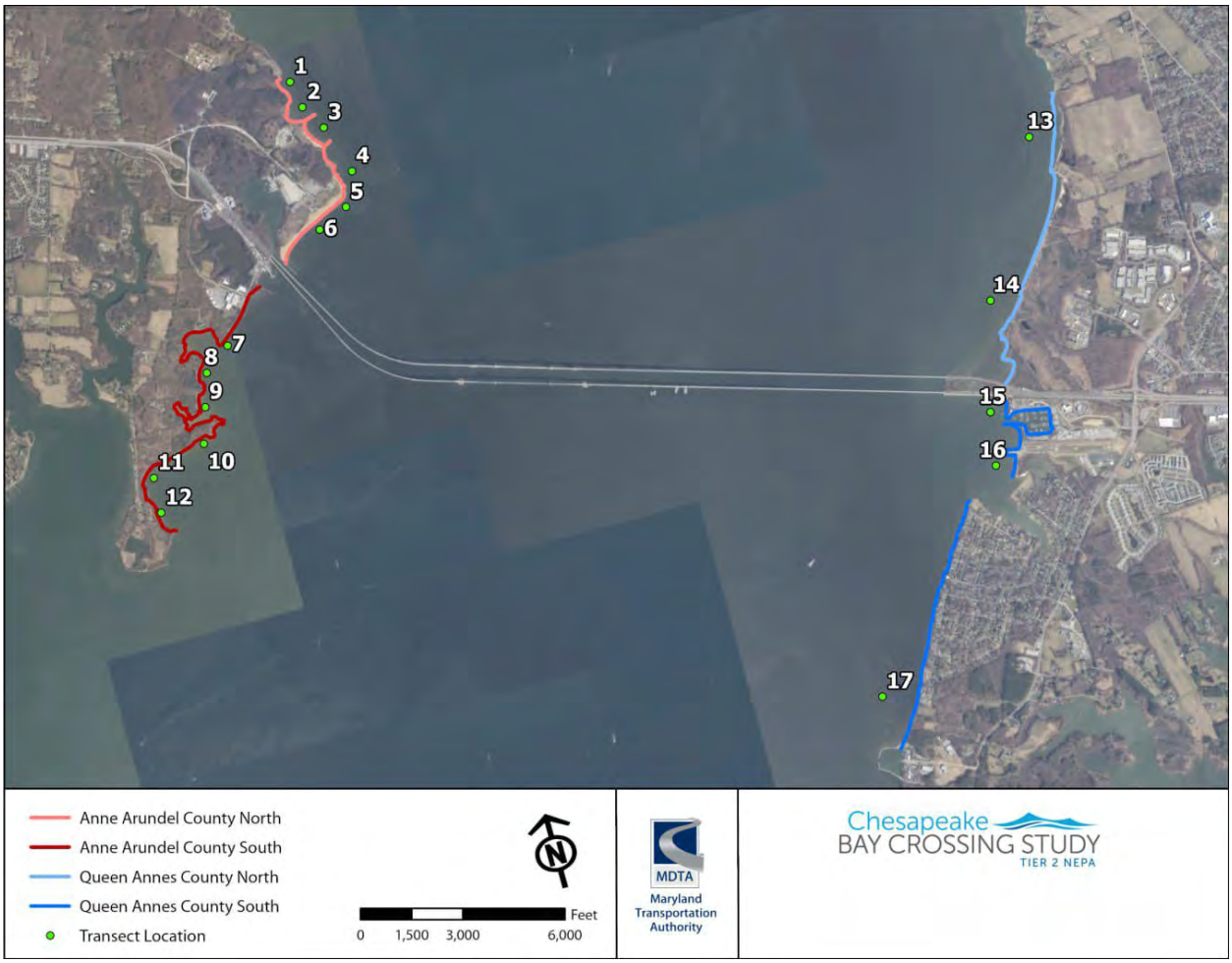


Figure 1-1: Location and Reference Point Map

2 Background and Methodology

Understanding shoreline change over time is important for evaluating vulnerability and informing infrastructure planning in coastal environments like the Chesapeake Bay. To assess both historical and future shoreline change, a combination of geospatial analysis tools and predictive modeling techniques was employed. Historical shoreline position data were digitized from aerial imagery and mapped using the Digital Shoreline Analysis System (DSAS). DSAS is a software which calculates linear rates of change along shore-normal transects. This historical change analysis provided a baseline for identifying long-term trends in erosion and accretion. For future projections, sea level change scenarios were applied using the Bruun Rule, a widely used empirical model that estimates shoreline retreat based on sea level change and beach slope. Each approach will be described in detail in the following sections.

2.1 Historical Change Rates

Shoreline change rates in the vicinity of the Bay Bridge exhibit considerable spatial and temporal variability, influenced by natural processes and human activities. To quantify these changes, geospatial based methods were employed. Historical shoreline positions were derived from remote sensing data,

including aerial imagery and satellite observations. These datasets provide a multi-decadal perspective on shoreline movement, enabling the identification of long-term trends in erosion and accretion. The analysis of shoreline change was conducted using the DSAS, which calculates linear rates of change along shore-normal transects spaced at regular intervals (Figure 2-1). This approach allowed for historical measurements of shoreline movement across the study area and will be discussed in Section 3.

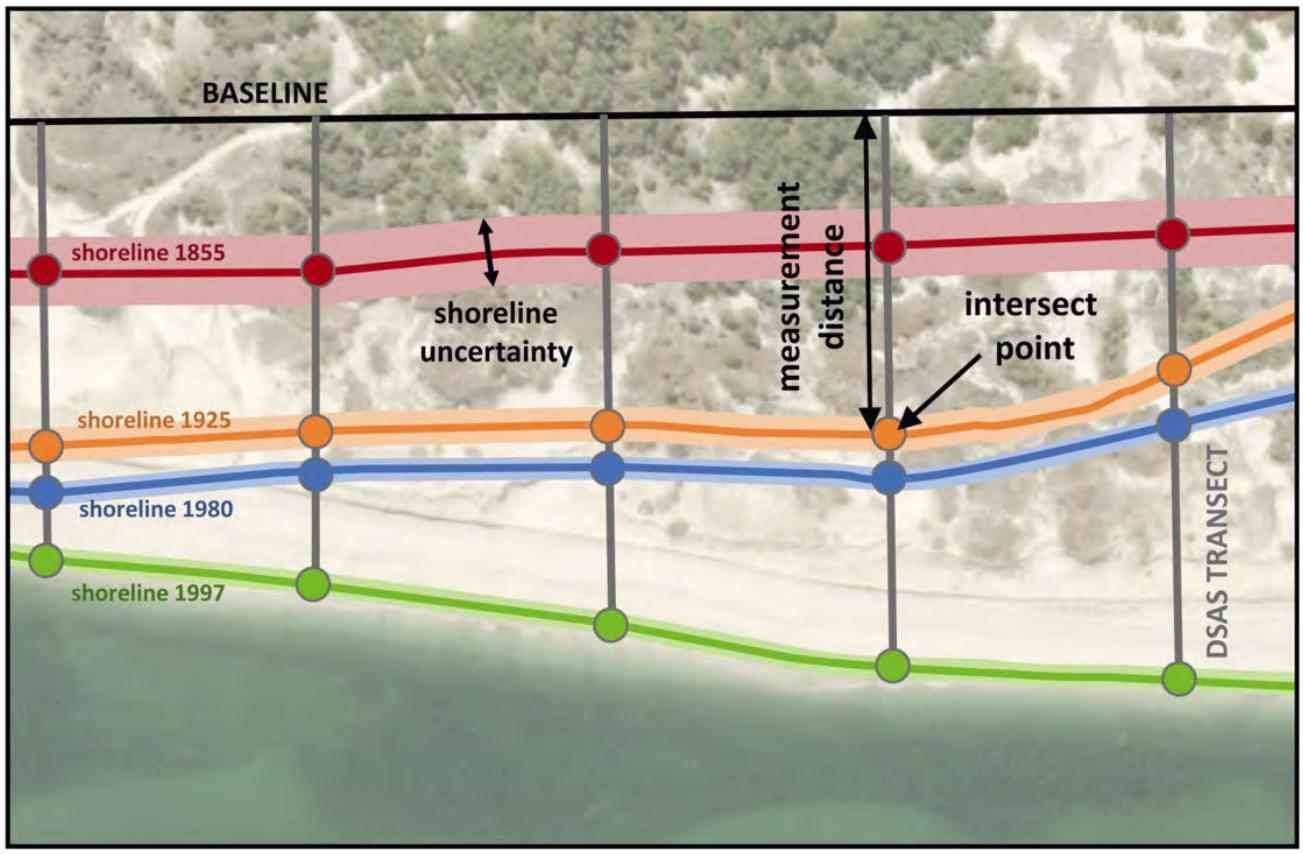


Figure 2-1: Example DSAS transects (https://coast.noaa.gov/data/digitalcoast/img/tools/dsas_2.jpg)

2.2 Future Shoreline Positions

To estimate future shoreline change in the vicinity of the Bay Bridge, two predictive approaches were employed. The first method projects historical shoreline change rates into the future, assuming continued trends based on past observations. The second method applies the Bruun Rule, an empirical model that estimates shoreline recession as a function of water level change and beach slope.

The Bruun Rule-based approach integrates observed sea level change trends with scenario-based projections to estimate potential shoreline retreat. This analysis focuses on sandy and unconsolidated shorelines, which are most vulnerable to erosion under rising sea levels.

Water level change projections were derived from the NOAA 2022 Technical Report on Sea Level Rise, using the Intermediate-High scenario to support precautionary planning. For Annapolis, MD, this

scenario anticipates approximately 1.5 feet of water level change by 2050 and 3.5 feet by 2100. These projections were used to estimate shoreline recession for two planning horizons—2050 and 2100—providing both near-term and long-term perspectives.

The Bruun Rule was applied at each transect location using the following equation:

$$R = \frac{S}{\tan \beta} \quad (1)$$

where:

- **R** is the estimated shoreline recession,
- **S** is the projected water level change, and
- **β** is the average slope of the active beach profile.

Slope values were derived from topographic and bathymetric profiles generated along each transect. While the Bruun Rule simplifies complex coastal dynamics, it provides a consistent, first-order estimate of potential shoreline retreat under water level change scenarios. These projections help identify areas of increased vulnerability and inform the evaluation of potential impacts to infrastructure and natural resources within the study area.

3 Existing and Historical Conditions

Understanding existing and historical shoreline conditions near the Bay Bridge is important for evaluating long-term coastal trends and informing future infrastructure planning. The Chesapeake Bay shoreline in this region has been shaped by a combination of natural forces—such as wave action, tidal currents, and sea level changes—as well as human activities including shoreline armoring, dredging, and development. These influences have resulted in a complex pattern of erosion and accretion that varies significantly across the study area.

To characterize these patterns, historical shoreline positions were analyzed using geospatial datasets spanning multiple decades. This analysis provides insight into how the shoreline has evolved over time, highlighting areas of persistent erosion, stable reaches, and zones of sediment accumulation. By establishing a baseline of historical change, this section supports the identification of vulnerable areas and serves as a foundation for projecting future shoreline dynamics under changing environmental conditions. The mapped shorelines in **Figure 3-1** and **Figure 3-2** for Anne Arundel County and **Figure 3-3** and **Figure 3-4** for Queen Anne's County show the decadal change of shoreline position over time.



Figure 3-1: Historical Shoreline Positions by Decade, Anne Arundel County North

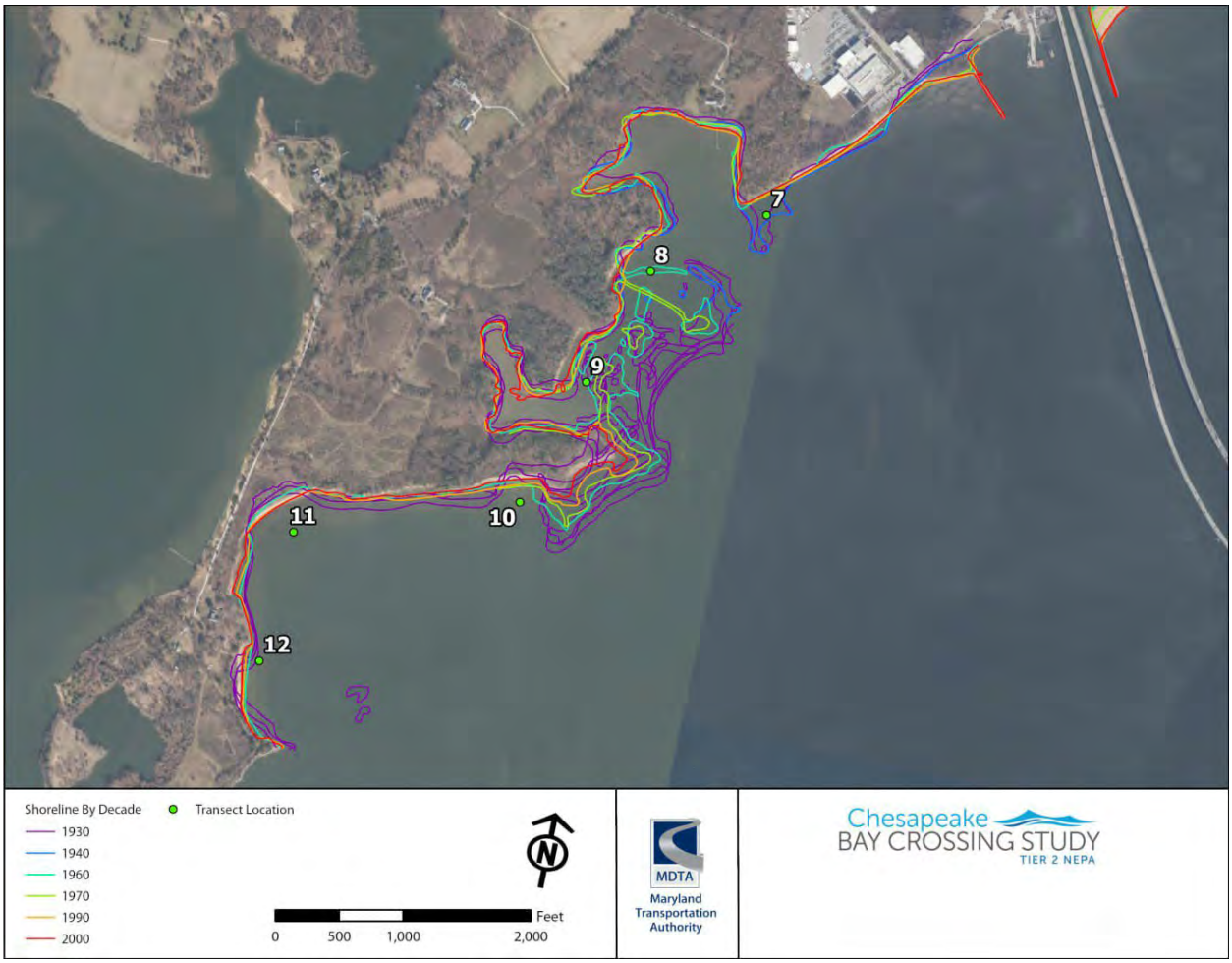


Figure 3-2: Historical Shoreline Positions by Decade, Anne Arundel County South



Figure 3-3: Historical Shoreline Positions by Decade, Queen Anne's County North



Figure 3-4: Historical Shoreline Positions by Decade, Queen Anne's County South

3.1 Shoreline Change Rates

The historical shoreline datasets for the Chesapeake Bay presented above provided a basis for identifying rates. For Anne Arundel County shorelines, this assessment evaluated shoreline change using generalized rate of change categories, assigned by the Maryland Geological Survey to a DSAS output on shorelines from 1961-2010. DSAS uses closely spaced, shore-normal transects to estimate linear rates of shoreline change along a segment of shoreline (**Figure 2-1**). Because a similar dataset was not available for Queen Anne's County shorelines, segments were manually assigned rate of change categories based on shore-normal transects. An example of the DSAS shoreline transects are located on **Figure 2-1**.

Analysis of historical shoreline change rates for transects surrounding the Chesapeake Bay Bridge reveals several areas of concern where erosion has been persistent and, in some cases, accelerating. Data were evaluated over a 10-year average to capture variability and trends.

Within Anne Arundel County, the northern shoreline exhibits the most severe erosion. Transect 2, in particular, shows the highest rate of shoreline retreat, with a 10-year average of -8 feet per year, indicating sustained and rapid erosion. Other northern transects, including 1, 3, and 5, also show

significant recession, with rates ranging from -3 to -6 feet per year. In contrast, the southern shoreline of Anne Arundel County displays more moderate erosion, with most transects averaging -1 to -3 feet per year over both timeframes. Notably, Transects 9 and 10 show slightly elevated rates compared to their neighbors, suggesting localized instability.

Within Queen Anne's County, erosion is most pronounced along the southern shoreline. Transect 16 stands out with a 10-year rate of -6 feet per year, marking it as one of the most vulnerable segments in the study area. The northern shoreline of Queen Anne's County also shows signs of erosion, particularly at Transect 13, which has experienced -4 feet per year over the past decade and -2 feet per year over the longer term.

Table 1. Historical Shoreline Change Rates

Location		Transect Number	10 Year Rate (ft/year)
Anne Arundel	North	1	-3
		2	-8
		3	-3
		4	-3
		5	-6
		6	-3
	South	7	-1
		8	-1
		9	-3
		10	-3
		11	-3
		12	-1
Queen Anne's	North	13	-4
		14	-2
	South	15	-2
		16	-6
		17	-1



Figure 3-5: Anne Arundel County North Shoreline Change Rates (1930 to 2010).



Figure 3-6: Anne Arundel County South Shoreline Change Rates (1930 to 2010).



Figure 3-7: Queen Anne's County North Shoreline Change Rates (1930 to 2010).



Figure 3-8: Queen Anne's County South Shoreline Change Rates (1930 to 2010).

4 Future Conditions and Environmental Impacts

The Tier 2 Study build alternatives may interact with the dynamic coastal environment. This section assesses how projected sea level changes and the introduction of new in-water structures could influence shoreline stability and ecological conditions in the study area. The analysis focuses on projections of shoreline recession through 2050 and 2100 using historical change rates and the Bruun Rule, providing insight into long-term erosion risks.

4.1 Future Shoreline Change (Existing Bridge)

The coastal landscape near the Bay Bridge may evolve under future environmental conditions with no infrastructure improvements (i.e., with the no-build alternative). Changing sea levels will increasingly affect shoreline positions, particularly in low-lying and sediment-limited areas. As sea levels increase, wave energy penetrates further inland, intensifying sediment transport and accelerating erosion of beaches, marshes, and bluffs. These changes can significantly impact shoreline morphology, habitat integrity, infrastructure stability, and community resilience.

To assess these changes, two methods as discussed in **Section 2.2** were used to estimate future shoreline positions: (1) extrapolation of historical shoreline change rates, and (2) application of the Bruun Rule using projected water level change scenarios. Together, these approaches provide a scenario-based assessment of potential shoreline recession and help identify vulnerable areas. The Bruun Rule was applied at each transect using projected water level change values for two planning horizons—2050 and 2100. The resulting recession estimates are summarized in Table 2.

Analysis of the results revealed several shoreline segments with elevated erosion potential. On the Western Shore in Anne Arundel County, Transects 5 and 6 fronting Sandy Point State Park exhibited the most pronounced projected retreat under both methods. For Transect 5, the extrapolated shoreline position by 2100 was -480 ft from the baseline, compared to -194 ft using the Bruun Rule. Transect 6 showed similar trends, with extrapolated recession reaching -240 ft versus -227 ft from the Bruun model. These differences highlight how extrapolation tends to produce more aggressive recession estimates, particularly in areas with low-lying sandy beaches and minimal natural protection. The open exposure to prevailing winds and long fetch across the Chesapeake Bay further amplifies erosion risk.

On the Eastern Shore in Queen Anne's County, Transect 13 located at the northern end of Terrapin Nature Preserve showed the highest projected erosion rates. The extrapolated shoreline position for 2100 was -320 ft, compared to -168 ft using the Bruun Rule. This shoreline, similar to the Sandy Point State Park shoreline, is exposed and lacks substantial structural protection. Composed of marshy and sandy substrates, it is vulnerable to both gradual water level change and episodic storm events. Projected retreat in this area raises concerns for habitat degradation and increased risk to trails and public access points within the park.

In comparison, the extrapolation method—based on extending historical shoreline change rates—often produced higher shoreline recession estimates, particularly for the 2100 planning horizon. This discrepancy is likely influenced by site-specific factors such as the location and density of vegetation landward of the shoreline, which can play a critical role in stabilizing sediments and reducing erosion. Areas with limited vegetative buffers or where shoreline retreat would expose unvegetated or erodible substrates may experience accelerated erosion under continued water level change. These findings suggest that while extrapolation offers a useful

trend-based perspective, its projections may overestimate future change in locations where natural features provide some degree of resistance to shoreline retreat.

Overall, the projected shoreline recession estimates underscore the potential for significant land loss and increased exposure of critical infrastructure to coastal hazards, even under existing bridge conditions. Roads, bridges, and utilities near the Bay Bridge are particularly at risk from erosion and inundation, which could lead to elevated maintenance costs, service disruptions, and safety concerns.

Table 2. Future Shoreline Position from Baseline

Location		Transect Number	2050 Position from Baseline (ft)	2100 Position from Baseline (ft)	Bruun Equation 2050 Position from Baseline (ft)	Bruun Equation 2100 Position from Baseline (ft)
Anne Arundel	North	1	-72	-222	-42	-97
		2	-192	-592	-46	-108
		3	-72	-222	-45	-105
		4	-72	-222	-49	-115
		5	-144	-444	-83	-194
		6	-72	-222	-97	-227
	South	7	-24	-74	-50	-118
		8	-24	-74	-45	-104
		9	-72	-222	-64	-149
		10	-72	-222	-58	-136
		11	-72	-222	-45	-105
		12	-24	-74	-41	-96
Queen Anne's	North	13	-96	-296	-72	-168
		14	-48	-148	-52	-120
	South	15	-48	-148	-29	-68
		16	-144	-444	-28	-64
		17	-24	-74	-42	-97

4.2 Future Shoreline Impacts from Proposed Bridge

Construction of a new bridge alignment across the Chesapeake Bay under the build alternatives has the potential to influence local shoreline dynamics and coastal processes. While the primary objective of the proposed infrastructure is to enhance transportation capacity, the introduction of new in-water and shoreline structures—such as bridge piers, abutments, causeways, and associated protective features—can lead to environmental changes driven by alterations in hydrodynamics and sediment transport.

Bridge piers and other in-water components may modify current patterns, creating zones of turbulence and altered flow velocities. These changes can result in localized erosion near the base of the structures or along adjacent shorelines, particularly in areas with unconsolidated sediments or limited vegetation. Conversely, areas of reduced flow may experience sediment deposition, potentially leading to accretion and changes in nearshore bathymetry. Such shifts in sediment dynamics can affect the stability of nearby marshes, beaches, and bluffs, and may require ongoing monitoring or mitigation to preserve shoreline integrity.

In addition to physical changes, future shoreline structures may impact ecological systems. Altered sediment transport can affect benthic habitats and reduce the availability of suitable substrate for aquatic vegetation and invertebrates. Changes in wave energy and shoreline configuration may also influence the distribution and health of intertidal and subtidal habitats, which are critical for fish spawning, bird foraging, and nutrient cycling.

Construction activities may introduce temporary disturbances such as increased turbidity, noise, and habitat fragmentation, further emphasizing the need for careful planning and environmental oversight.

However, based on the findings presented in Appendix F, the bridge alignment of the Tier 2 Study build alternatives are not expected to substantially exacerbate shoreline currents. Modeled velocities remain below the critical threshold for erosion, suggesting that the bridge structures themselves will not significantly contribute to shoreline retreat through current-driven processes. While there are some localized increases in current velocity near the northern Anne Arundel shoreline at Sandy Point, these increases are not substantial enough to initiate erosion. The velocities remain below the critical threshold required to mobilize sediment in this area.

Instead, changes to future erosion patterns are anticipated to be primarily driven by wind wave action within the Bay. As water levels change, deeper water will allow wave energy to propagate further landward, increasing the potential for wave-induced erosion along vulnerable shorelines. The bridge piers are not expected to influence these wave dynamics and are therefore not anticipated to substantially affect long-term shoreline change.

4.3 Summary

The build alternatives are not expected to substantially exacerbate shoreline currents. Modeled increases in flow velocities remain below the critical threshold for erosion near both eastern and western shorelines, suggesting that the bridge structures themselves will not significantly contribute to shoreline retreat through current-driven processes. While there are some localized increases in current velocity near the northern Anne Arundel shoreline at Sandy Point, these increases are not substantial enough to initiate erosion. Future changes in erosion patterns are anticipated to be primarily driven by wind wave action within the Bay. As water elevations change with time, deeper water will allow wave energy to propagate further landward, increasing the potential for wave-induced erosion along vulnerable shorelines. The bridge piers are not expected to influence these wave dynamics and are therefore not anticipated to substantially affect long-term shoreline change.