

## **Appendix C – Wetland Delineation Report**



**Waters of the US and Wetlands Delineation Report**  
**MARINA WAY EXTENTION PROJECT**  
**Prince William County, Virginia**

**Project Identifier 23C17011**  
**VDOT UPC 120778**

**Submitted to:**  
**Prince William County Department of Transportation**

**February 2024**





## **Executive Summary**

Johnson, Mirmiran & Thompson (JMT) has conducted a delineation of jurisdictional waters of the U.S. (WOUS), including wetlands, within a 20.8 acre study area located in Prince William County, Virginia. (Figure 1) The project involves extending Marina Way from Annapolis Way to Horner Road at Gordon Boulevard with a four-lane divided roadway and associated pedestrian facilities. This report is intended to document the findings of the delineation investigation conducted by JMT in order to obtain a preliminary jurisdictional determination (PJD) from the U.S. Army Corps of Engineers (USACE).

There are approximately 0.14 acres of palustrine forested wetland within the study area.



## Table of Contents

<b>Executive Summary</b> .....	<b>i</b>
<b>Site Description</b> .....	<b>1</b>
<b>Field Investigation Methodology</b> .....	<b>1</b>
<b>Findings</b> .....	<b>2</b>
<b>Published Information</b> .....	<b>2</b>
<b>Field Investigations</b> .....	<b>3</b>
<b>Streams</b> .....	<b>Error! Bookmark not defined.</b>
<b>Wetlands</b> .....	<b>3</b>
<b>Regulatory Requirements and Limitations</b> .....	<b>3</b>

## APPENDICES

APPENDIX A – PHOTOGRAPHIC DOCUMENTATION

APPENDIX B – FIGURES

APPENDIX C – SITE DATA SHEETS



## Site Description

The proposed project is located within Prince William County between the Annapolis Way and Horner Road at Route 123 (Gordon Boulevard) and lies within the Coastal Plain physiographic province. The study area is approximately 20.8 acres. To gain access to the site from I-95 northbound, take exit 160A and continue on Route 123 (Gordon Boulevard) east, then turn north onto Horner Road.

The southern portion of the study area is completely paved. This area is used for customer parking that serves the stores located in the center of the study area (Figure 1). The northern portion of the study area is forest land consisting of mostly mixed, broad-leaf, deciduous forested communities that transition to old field/disturbed communities closer to Annapolis Way. Elevation ranges from approximately 70 to 100 feet above mean sea level (amsl) within an area that is predominantly developed (Figure 2). The study area watershed flows to Popes Head Creek which is part of the Middle Potomac – Anacostia – Occoquan River (Hydrologic Unit Code [HUC] 02070010). Elevations on the site range from approximately 71 to 91 feet above mean sea level (amsl). The latitude and longitude of the approximate center of the site are N 38.665503°, W -77.246582°. Mapping from the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) Panel 51153C0236E (Dated 8/3/215) is shown in Figure 3 and documents that the study area is not located within a FEMA 100-year floodplain (FEMA, 2015).

## Field Investigation Methodology

A field investigation was conducted to delineate potentially jurisdictional Waters of the U.S. (WOUS), including wetlands within the study area. A wetland delineation was performed according to the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Regional Supplement, Version 2.0, (USACE, 2010). The Corps of Engineers Wetland Delineation Manual states three criteria (wetland vegetation, wetland soils, and wetland hydrology) must be present for an area to qualify as a wetland, unless the area is significantly disturbed (atypical situation) or is considered a problem area (e.g., seasonally ponded soils). If the area is significantly disturbed or a problem area, then only two parameters must be evident to classify an area as a wetland. All delineated wetlands are classified into system, subsystem, class, and subclass according to the Classification of Wetlands and Deep Water Habitats of the United States (Cowardin et al., 1979).

In order to delineate wetland boundaries, samples were taken periodically using a dutch auger. Soil samples were collected at each wetland and upland sample point, and soil colors were recorded in the field using a Munsell soil color chart (Munsell Color, 2010). NRCS digital soils data and mapping were obtained from the NRCS website and were compared for consistency to the observed conditions encountered during the field investigations. These data were augmented by review of soils data for the property. Site photographs are included in Appendix A; a photo location key is included to orient photographic location within the site. All figures associated with desktop review and field delineation are located in Appendix B.



Samples of vegetation, soils, and hydrology were taken at representative locations that were possible wetlands and adjacent non-wetland areas to determine the potential wetland boundaries. Wetland Determination Data Forms describing representative plant communities, hydrology indicators, and soil characteristics are included in Appendix C. WOUS boundaries were flagged in the field and documented using a Trimble® global positioning system (GPS) capable of sub-meter accuracy.

## Findings

### PUBLISHED INFORMATION

Prior to conducting the fieldwork, a desktop review of published information was performed to identify known site conditions and to determine the presence of known jurisdictional wetlands and/or WOUS in the study area. The bullets below provide a list of the references utilized and their effective dates.

- Fort Belvoir, Virginia 7.5' x 7.5' Topographic Quadrangle (USGS, 2019) (**Figure 2**);
- FEMA FIRM Panel. Prince William County, Virginia. Map #51153C0236E (FEMA, 2010) (**Figure 3**);
- National Wetlands Inventory (NWI) (USFWS, 2017) (**Figure 4**);
- Web Soil Survey. Prince William County, Virginia (USDA/NRCS, 2021) (**Figure 5**); and

All figures are presented in Appendix B.

NWI mapping shows a palustrine freshwater emergent wetland (PEM) within the project study area (**Figure 4**). No other NWI-mapped wetlands or WOUS were identified in the desktop review.

Mapped soils information is presented in Table 1 below and no mapped hydric soils or soils with hydric inclusions (shown as Percent Hydric Presence) were identified within the project area. One soil map unit (54B) was not classified by hydric rating or % Hydric Presence, but is urban land and other disturbed soils that are highly variable and not typically expected to have hydric features. Mapped soils are shown in Figure 5.

**TABLE 1. SOIL UNITS MAPPED WITHIN THE STUDY AREA**

MAP UNIT SYMBOL	MAP UNIT NAME	MAP UNIT PROPERTIES	HYDRIC RATING	% HYDRIC PRESENCE
18D	Dumfries sandy loam, 15 to 25 percent slopes	Not prime farmland	Not hydric	0
42B	Neabsco-Quantico complex, 2 to 7 percent slopes	Not prime farmland	Not hydric	0
54B	Urban land-Udorthents complex, 0 to 7 percent slopes	Not prime farmland	Unclassified	Unclassified

Source: USDA-NRCS Soil Survey 2021



**FIELD INVESTIGATIONS**

Field investigations were conducted on June 13, 2023, by JMT environmental scientists Amy Musselman and Steven Swarr, to identify and delineate wetlands and WOUS within the study area. A pedestrian survey of the entire undeveloped limits within the property was conducted and potential jurisdictional areas identified during desktop review were investigated. Due to design constraints, the study area was expanded. A pedestrian survey of the additional area was performed on February 27, 2024. Two upland sample plots were taken to provide a representation of the study area and one wetland data point was collected, following the USACE regional supplement methods; one upland data point (DPU 1) was taken in the vicinity of the NWI-mapped wetland feature and documents absence of hydric soils, hydrology and wetland vegetation in this location. JMT delineated one forested wetland adjacent to the developed portions of the property. The location of the delineated system is shown on the Waters of the US Delineation Map in Figure 6. Photographic documentation is included in Appendix A. Wetland data sheets are in Appendix C.

**Wetlands**

Wetland A - Wetland A is an isolated palustrine forested (PFO) wetland located in the central portion of the project area along the SW edge of the undeveloped, vegetated area (Figure 6). The primary hydrology indicators throughout this wetland included standing water and water-stained leaves. The secondary hydrology indicators included a FAC-neutral test and drainage patterns. There was standing water (approximately 12 inches deep) where the wetland data point was taken. The dominant vegetation where the wetland data point was taken included willow oak (*Quercus phellos*) and common reed (*Phragmites australis*). Vegetation throughout the wetland was consistent with the wetland data point. Soils were hydric with a matrix chroma of 10 YR 4/4 from 0-4 inches and 10 YR 3/2 from 4 plus inches. Soils were a silt loam. See Appendix C – Data Sheets for additional information.

**TABLE 2. WETLANDS AND WATERS OF THE US IDENTIFIED WITHIN THE STUDY AREA**

MAP ID	NAME	CLASSIFICATION	LENGTH (FT)	AREA (SQ FT)
Wet A	N/A	PFO	N/A	5,987

**Regulatory Requirements and Limitations**

The limits of WOUS described in this report are based on an examination of field conditions at the time of this investigation and may differ from future observations by others. This report does not constitute a jurisdictional determination; such determinations must be verified by the USACE or VA Department of Environmental Quality (VDEQ). Given the isolated nature of the wetland identified onsite, it is unlikely the USACE will exert jurisdiction over this feature. However, VDEQ currently conducts State Surface Water Determinations and may review this delineation upon request.



Resources not jurisdictional to USACE may still be regulated by VDEQ. Section 404 of the Clean Water Act authorizes the USACE to regulate the placement of fill in jurisdictional areas. Virginia Administrative Code (9VAC25-690-100) authorizes VDEQ to regulate activities in state waters, which includes wetlands, streams and waterbodies. Any proposed impacts to WOUS may require authorization from the appropriate federal, state, and/or local regulatory agencies.

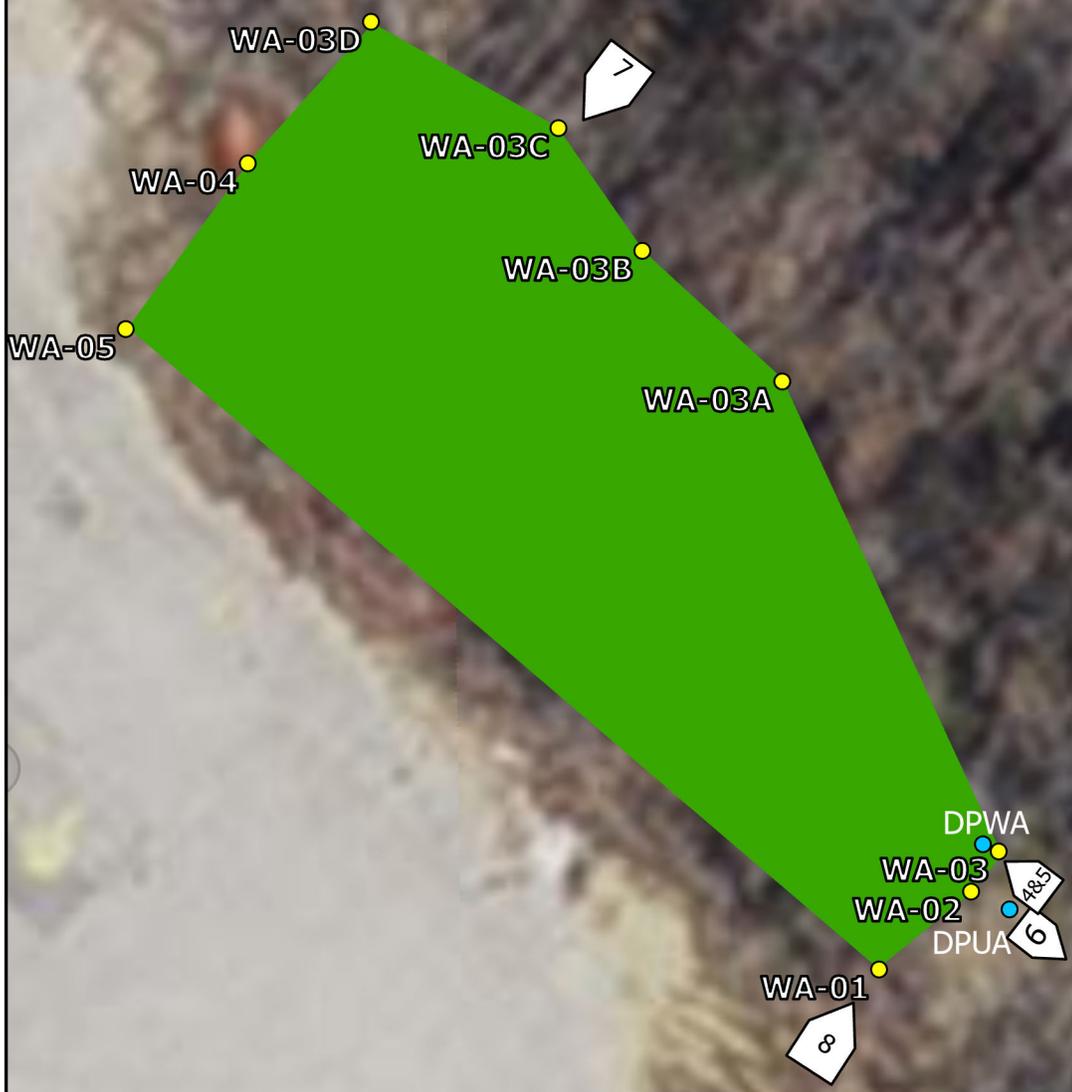
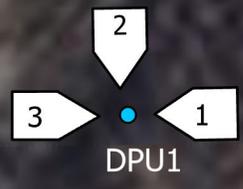
Prince William County's Chesapeake Bay Preservation Ordinance is enacted to mandate the authority of the Chesapeake Bay Preservation Act (CBPA). The CBPA protects environmentally sensitive features which contribute to the water quality in the Chesapeake Bay. RPAs include both tidal and nontidal wetlands, as well as tidal shores, intermittent streams, water bodies with a perennial flow, and a 100-foot vegetated buffer area located adjacent to the aforementioned features. According to Section 118-5-2(a), public roads, such as this project, are exempt from the provisions of the Ordinance.



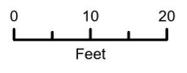
# APPENDIX A

## PHOTOGRAPHIC DOCUMENTATION

	Study Area		PFO
	Data Points		
	Delineation Flags		



**APPENDIX A  
PHOTODOCUMENTATION LOCATION KEY  
MARINA WAY EXTENSION (UPC 120778)**



Prince William County, VA

Sources: Hybrid Reference Layer: Esri Community Maps Contributors, County of Prince William, Fairfax County, VA, VGIN, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA  
Aerial Photography Most Recent (VGIN): Virginia Geographic Information Network (VGIN)



*Photo 1: View of DPU1 facing west.*



*Photo 2: View of DPU1 facing south.*



*Photo 3: View of DPU1 facing east.*



*Photo 4: View of DPWA facing northwest.*



*Photo 5: View of DPWA facing northwest.*



*Photo 6: View of DPUA facing east.*



*Photo 7: View of Wetland A (PFO) facing southwest.*



*Photo 8: View of Wetland A (PFO) facing northeast.*



## APPENDIX B FIGURES



Study Area

Route 123 &  
I-95 Commuter  
Lot

Destination Pl

Annapolis Way

Annapolis Way

Marina Way

Richmond Hwy

Gordon Plaza

Woodbridge

Railroad Ave

Potomac Path Dr

Horner Rd

Station Plaza

Richmond Hwy

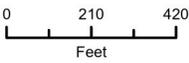
CSX Transportation

Express Dr

Wood St

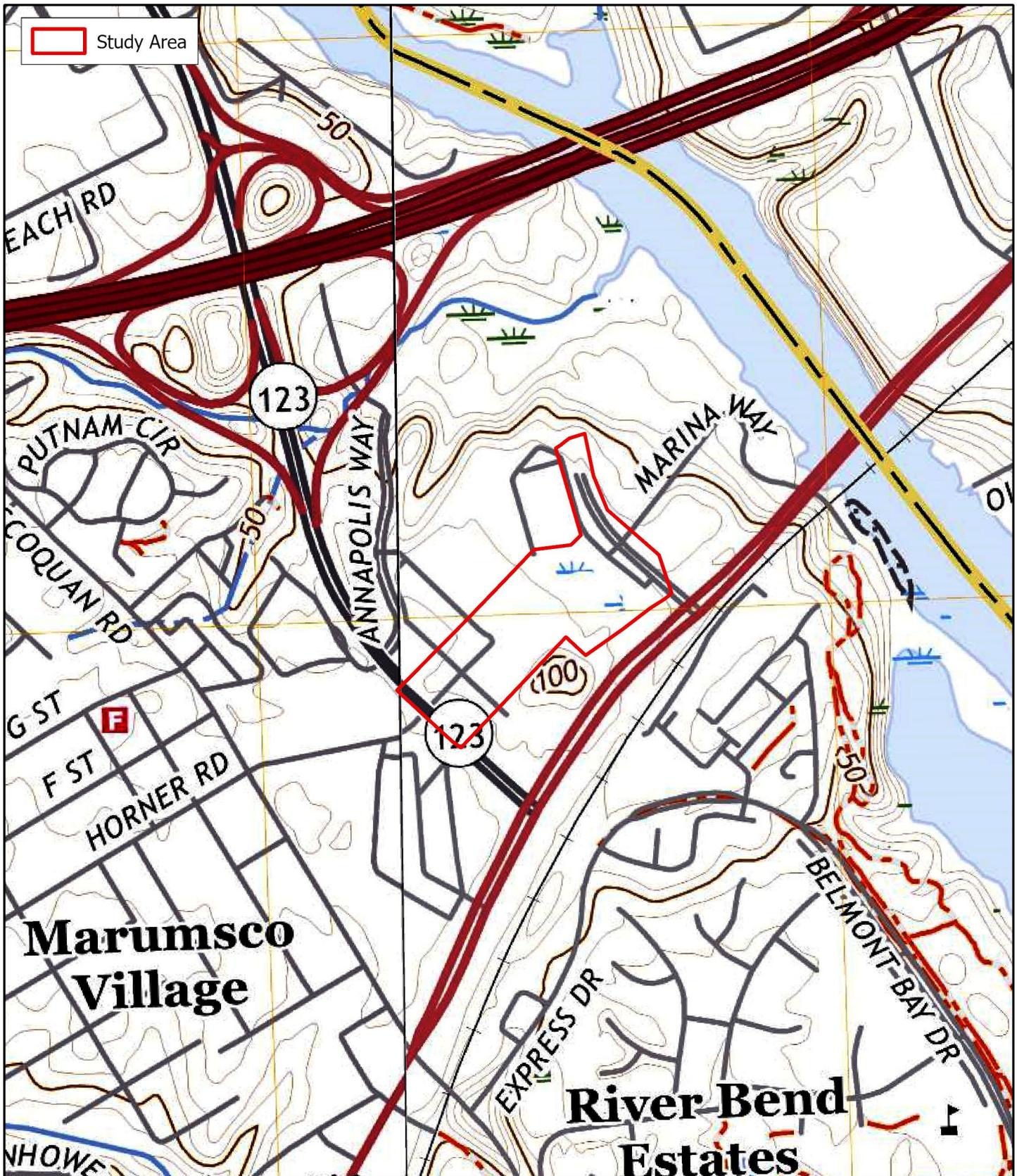


**FIGURE 1**  
**PROJECT LOCATION**  
MARINA WAY EXTENSION (UPC 120778)



Prince William County, VA

Sources: Hybrid Reference Layer: Esri Community Maps Contributors, County of Prince William, Fairfax County, VA, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS  
Aerial Photography Most Recent (VGIN). Virginia Geographic Information Network (VGIN)



Study Area

**Marumsco  
Village**

**River Bend  
Estates**



**FIGURE 2**  
**USGS TOPOGRAPHIC QUADRANGLE MAP**  
**FORT BELVOIR, VA**  
 MARINA WAY EXTENSION (UPC 120778)

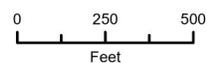
0 240 480  
 Feet  
 Prince William County, VA

Sources: USGS, 2019





**FIGURE 4**  
**NATIONAL WETLANDS INVENTORY MAP**  
 MARINA WAY EXTENSION (UPC 120778)



Prince William County, VA



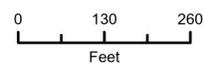
Sources: FWS HD ES National Wetlands Inventory - Wetlands: U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands\_team@fws.gov  
 World Imagery: Maxar  
 Hybrid Reference Layer: Esri Community Maps Contributors, County of Prince William, Fairfax County, VA, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METRNASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS  
 Aerial Photography Most Recent (VGIN), Virginia Geographic Information Network (VGIN)



Study Area  
 Soil Map Unit



**FIGURE 5**  
**NRCS SOIL MAP**  
 MARINA WAY EXTENSION (UPC 120778)



Prince William County, VA

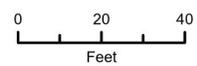
Sources: World Imagery: Maxar, Microsoft  
 Hybrid Reference Layer: Esri Community Maps Contributors, County of Prince William, Fairfax County, VA,  
 VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA,  
 USGS, EPA, NPS, US Census Bureau, USDA, USFWS  
 Aerial Photography: Microsoft, © 2013, Microsoft Geographic Information Network, © 2013



- Data Points
- Delineation Flags
- PFO



**FIGURE 6**  
**DELINEATED RESOURCE MAP**  
 MARINA WAY EXTENSION (UPC 120778)



Prince William County, VA

Sources: Hybrid Reference Layer: Esri Community Maps Contributors, County of Prince William, Fairfax County, VA, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/MASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS  
 World Imagery: Microsoft  
 Hybrid Reference Layer: Esri Community Maps Contributors, County of Prince William, Fairfax County, VA, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/MASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS  
 Aerial Photography Most Recent (VGIN), Virginia Geographic Information Network (VGIN)



## **APPENDIX C**

### **SITE DATA SHEETS**

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Marina Way Extension City/County: \_\_\_\_\_ Sampling Date: 2023-06-07  
 Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: DPU1  
 Investigator(s): AM/SS Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR or MLRA): \_\_\_\_\_ Lat: 38.66515376 Long: -77.24588516 Datum: WGS 84  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area was in a drought leading up to delineation which is atypical for the area. According to NOAA, the area received 0.47 inches of precipitation in the 2 weeks prior to the site visit. Vegetation was disturbed from previous development and was not typical of that area (catalpa, bradford pear, etc.). Historic (Google Earth) photos show land disturbance and old field conditions within the last 20 years, particularly on the NE end of the site.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ Aquatic Fauna (B13) ___ High Water Table (A2)      ___ Marl Deposits (B15) <b>(LRR U)</b> ___ Saturation (A3)      ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1)      ___ Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2)      ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4)      ___ Thin Muck Surface (C7) ___ Iron Deposits (B5)      ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ FAC-Neutral Test (D5) ___ Sphagnum moss (D8) <b>(LRR T, U)</b>
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: DPU1

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
2. <u>Pyrus calleryana</u>	<u>20</u>	<input checked="" type="checkbox"/>		
3. <u>Quercus rubra</u>	<u>10</u>		<u>FACU</u>	
4. _____				
5. _____				
6. _____				
<u>60%</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>80</u> (A) <u>250</u> (B)  Prevalence Index = B/A = <u>3.1</u>
50% of total cover: <u>30.0</u> 20% of total cover: <u>12.0</u>				
<b>Sapling Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Pyrus calleryana</u>	<u>15</u>	<input checked="" type="checkbox"/>		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
<u>15%</u> = Total Cover				<b>Definitions of Five Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  <b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  <b>Shrub</b> – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  <b>Herb</b> – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  <b>Woody vine</b> – All woody vines, regardless of height.
50% of total cover: <u>7.5</u> 20% of total cover: <u>3.0</u>				
<b>Shrub Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Morus alba</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
<u>10%</u> = Total Cover				
50% of total cover: <u>5.0</u> 20% of total cover: <u>2.0</u>				
<b>Herb Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Toxicodendron radicans</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Leersia virginica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>30%</u> = Total Cover				
50% of total cover: <u>15.0</u> 20% of total cover: <u>6.0</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (If observed, list morphological adaptations below).				

**SOIL**

Sampling Point: DPU1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 3/4	100					Clay Loam	
4 - 12	10YR 4/6	100					Clay Loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No \_\_\_\_\_

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Marina Way Extension City/County: \_\_\_\_\_ Sampling Date: 2023-06-07  
 Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: DPUA  
 Investigator(s): AM/SS Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR or MLRA): \_\_\_\_\_ Lat: 38.66474583 Long: -77.24600603 Datum: WGS 84  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area was in a drought leading up to delineation which is atypical for the area. According to NOAA, the area received 0.47 inches of precipitation in the 2 weeks prior to the site visit. Vegetation was disturbed from previous development and was not typical of that area (catalpa, bradford pear, etc.). Historic (Google Earth) photos show land disturbance and old field conditions within the last 20 years, particularly on the NE end of the site.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ Aquatic Fauna (B13) ___ High Water Table (A2)      ___ Marl Deposits (B15) <b>(LRR U)</b> ___ Saturation (A3)      ___ Hydrogen Sulfide Odor (C1) ___ Water Marks (B1)      ___ Oxidized Rhizospheres along Living Roots (C3) ___ Sediment Deposits (B2)      ___ Presence of Reduced Iron (C4) ___ Drift Deposits (B3)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Algal Mat or Crust (B4)      ___ Thin Muck Surface (C7) ___ Iron Deposits (B5)      ___ Other (Explain in Remarks) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ FAC-Neutral Test (D5) ___ Sphagnum moss (D8) <b>(LRR T, U)</b>
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: DPUA

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Catalpa speciosa</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
<u>20%</u> = Total Cover 50% of total cover: <u>10.0</u> 20% of total cover: <u>4.0</u>																		
<b>Sapling Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. _____				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>45</u> (A)</td> <td><u>155</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.4</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>45</u> (A)	<u>155</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>20</u>	x 4 = <u>80</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>45</u> (A)	<u>155</u> (B)																	
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																		
<b>Shrub Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. _____				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																		
<b>Herb Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. <u>Toxicodendron radicans</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Definitions of Five Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  <b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  <b>Shrub</b> – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  <b>Herb</b> – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  <b>Woody vine</b> – All woody vines, regardless of height.														
2. <u>Baccharis halimifolia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. <u>Panicum sp.</u>	<u>5</u>																	
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
<u>30%</u> = Total Cover 50% of total cover: <u>15.0</u> 20% of total cover: <u>6.0</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																		
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover 50% of total cover: _____    20% of total cover: _____																		
Remarks: (If observed, list morphological adaptations below).																		

**SOIL**

Sampling Point: DPUA

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10YR 3/4	100					Clay Loam	
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No \_\_\_\_\_

Remarks:

**WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region**

Project/Site: Marina Way Extension City/County: \_\_\_\_\_ Sampling Date: 2023-06-07  
 Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: DPWA  
 Investigator(s): AM/SS Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR or MLRA): \_\_\_\_\_ Lat: 38.66474630 Long: -77.24600443 Datum: WGS 84  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area was in a drought leading up to delineation which is atypical for the area. According to NOAA, the area received 0.47 inches of precipitation in the 2 weeks prior to the site visit.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) _____ Aquatic Fauna (B13) _____ High Water Table (A2) _____ Marl Deposits (B15) <b>(LRR U)</b> _____ Saturation (A3) _____ Hydrogen Sulfide Odor (C1) _____ Water Marks (B1) _____ Oxidized Rhizospheres along Living Roots (C3) _____ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) _____ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) _____ Iron Deposits (B5) _____ Other (Explain in Remarks) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) _____ Sphagnum moss (D8) <b>(LRR T, U)</b>
---	---

<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Pondered water observed in portion of wetland near DPWA

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: DPWA

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Quercus phellos</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>15%</u> = Total Cover			
	50% of total cover: <u>7.5</u>		20% of total cover: <u>3.0</u>	
<b>Sapling Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	_____ = Total Cover			
	50% of total cover: _____		20% of total cover: _____	
<b>Shrub Stratum</b> (Plot size: <u>30 ft r</u> )				
1. <u>Phragmites australis</u>	<u>85</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	<u>85%</u> = Total Cover			
	50% of total cover: <u>42.5</u>		20% of total cover: <u>17.0</u>	
<b>Herb Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	_____ = Total Cover			
	50% of total cover: _____		20% of total cover: _____	
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
	_____ = Total Cover			
	50% of total cover: _____		20% of total cover: _____	
Remarks: (If observed, list morphological adaptations below).				

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

---

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)

Prevalence Index = B/A = 2.0

---

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

---

**Definitions of Five Vegetation Strata:**

**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine** – All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present?** Yes  No

**SOIL**

Sampling Point: DPWA

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10 YR 4/4	100					Clay loam	
4 +	10 YR 3/2	100					Clay loam	
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks: