

WETLAND DELINEATION REPORT

**LOTS 2 AND 12 IN BLOCK 126
BOROUGH of BROOKLAWN
CAMDEN COUNTY, NEW JERSEY**



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Figure 1: SITE MAPPED OVER A 2020 NJGIN AERIAL IMAGE

Figure 2: USGS topographic map (Camden, NJ-PA and Runnemede, NJ 7.5-Minute quadrangles)

Figure 3: Site Mapped Over a Portion of Web Soil Survey

Exhibit A: Color photographs

Exhibit B: Wetland Determination Data Forms

Exhibit C: Vegetation List

1.0 Introduction

This report presents the results of a wetland delineation conducted to determine the extent of state-regulated freshwater wetlands and open waters on a site known as Block 126, Lot 12 in the Borough of Brooklawn, Camden County, New Jersey (Figure 1). The field work was conducted by Mr. Anthony Froonjian, Professional Wetland Scientist No. 3282, on March 25, 2023.

The approximately 3.75-acre site is located on the south side of Crescent Boulevard (New Jersey State Route 130) and extends southward to the municipal boundary of the Borough of Bellmawr. Except for a portion of a miniature golf park in the northern part, the site is undeveloped and overgrown and comprised mostly of graded fill material. A buried natural gas pipeline right-of-way is along the southwestern part of the site. Access to the site is best gained via the site's frontage on Crescent Boulevard.

The site is located on the Camden, NJ-PA and the Runnemede, NJ 7.5-Minute series quadrangles (USGS 2019a, 2019b) (Figure 2), centering approximately at the following coordinates (NAD 83):

	"X"	"Y"
Geodetic:	75.118339° West	39.875143° North
Zone 2900 – New Jersey; U.S. Survey Feet:	318,591 East	380,037 North

2.0 Methodology

The delineation was conducted in accordance with *The Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (FICWD 1989) (89 Manual), as required by the New Jersey Department of Environmental Protection (NJDEP) Freshwater Wetland Rules (NJAC 7:7A). A three-parameter approach to identify and delineate wetlands presented in the 89 Manual requires that except for atypical and disturbed situations wetlands possess hydrophytic vegetation, hydric soils, and wetland hydrology. The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* (USACE 2010) (the Supplement) was referenced for additional delineation guidance based on updated regional indicators for the three wetland criteria.

The delineation of streams is based on the "ordinary highwater mark." As defined at 33 CFR 328.3, the ordinary highwater mark refers to the line on the shore established by the fluctuations of water. The line is indicated by physical characteristics such as: a clear, natural line impressed on the bank; shelving; changes in the character of soil, destruction

of terrestrial vegetation; the presence of litter and debris; or other characteristics of the surrounding areas.

The delineated resources were classified in accordance with *The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition* (FGDC, 2013). Photographs that document site conditions at the time of the delineation are presented as Exhibit A. Wetland Determination Data Forms developed for the Supplement were completed at representative wetland and non-wetland areas and are included as Exhibit B.

2.1 Soils Methodology

A hand shovel was used to obtain undisturbed samples of the upper soil horizons from several test pits. *Munsell® Soil Color Charts* (2021) were used to assign standard notations to the samples. All the soil samples were either moist or moistened prior to analysis to ensure accurate color readings.

A hydric soil is one that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, July 13, 1995). Hydric soil indicators established in the Manual, the Supplement, and in *Field Indicators of Hydric Soils in the United States, Version 8.2* (USDA-NRCS, 2018) were used to determine the presence of characteristic soil morphologies resulting from prolonged saturation and/or inundation. Per *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin* (USDA-NRCS 2006), hydric soil indicators for Major Land Resource Area 149A - Northern Coastal Plain (MLRA 149A) of Land Resource Region S - Northern Atlantic Slope Diversified Farming Region (LRR S) are applicable for the site. Indicators that are not applicable to LRR S as a whole or specifically to MLRA 149A were not considered during the reconnaissance.

2.2 Vegetation Methodology

The U.S. Army Corps of Engineers (USACE) administers the list of wetland plants. Therefore, scientific names and wetland indicator statuses for the vegetation conform to those listed in *The National Wetland Plant List: 2020 Wetland Ratings, version 3.5* (USACE, 2022) (NWPL). The indicator statuses specific to the Atlantic and Gulf Coastal Plain Region as defined by the USACE apply to the site. The official short definitions for vegetation wetland indicator statuses are as follows.

- Obligate Wetland (OBL) - Almost always occur in wetlands.
- Facultative Wetland (FACW) - Usually occur in wetlands but may occur in non-wetlands.
- Facultative (FAC) - Occur in wetlands or non-wetlands.

- Facultative Upland (FACU) - Usually occur in non-wetlands but may occur in wetlands.
- Upland (UPL) - Almost never occur in wetlands.

Vascular plants that are not listed in the Atlantic and Gulf Coastal Plain Region section of the NWPL take on their indicator status as listed in an adjacent region. Such species that are not listed in an adjacent region, or not in any region and therefore not included on the NWPL, are assigned the indicator status of UPL.

Sampling plots were established at representative wetland and non-wetland points along the delineated boundary. For this delineation, each sampling plot was composed of three circular, concentric sub-plots in graduated sizes: The tree and vine strata were assessed within a sub-plot with a radius of 30 feet, the shrub and sapling stratum sub-plot radius was 15 feet, and the herbaceous stratum was assessed within a 5-foot radius sub-plot.

As shown on the wetland determination data forms in Exhibit B, hydrophytic vegetation communities were determined to be present when:

- All dominant species across all strata are rated as obligate (OBL) wetland plants or facultative wetland (FACW) plants.
- The result of the dominance test is greater than 50%.
- The prevalence index is less than or equal to 3.0.
- The plant community passes either the dominance test or the prevalence index after reconsideration of the indicator status of certain plant species that exhibit morphological adaptations for life in wetlands.

A vegetation inventory compiled during the delineation is provided as Exhibit C.

2.3 Hydrology Methodology

After plant communities and soils were identified, the presence, potential presence, or absence of wetland hydrology was determined for final definition of the upland and wetland boundaries. The 89 Manual lists 11 indicators of wetland hydrology, and an additional 16 primary and 10 secondary indicators of wetland hydrology are outlined in the Supplement.

3.0 Site Drainage`

The site is within the Lower Delaware River Basin, as defined by the NJDEP at N.J.A.C. 7:9B-1.15(e), as amended April 6, 2020. The site drains southward into a narrow wetland area that drains via an unnamed tributary to Big Timber Creek. The NJDEP's Division of Water Quality classifies the entire length of Big Timber Creek as "FW2-NT" (Freshwater, Non-Trout), and the unnamed tributary is therefore also classed as FW2-NT.

The site is within an area assigned by the U.S. Environmental Protection Agency (EPA) to the 12-digit Hydrologic Unit Code (HUC) 020402020503, the Woodbury/Big Timber/Newton Creeks sub-watershed.

The Federal Emergency Management Agency's Flood Insurance Rate Map number 34007C0038F (effective August 17, 2016) maps most of the site outside of any flood plains. The southern part of the site is within an area mapped as being within the 100-year flood zone.

4.0 Mapped Soils

The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) *Web Soil Survey* (<http://soils.usda.gov/>) maps the site with one map unit (Figure 3). Soil map units can represent a kind of soil, a combination of soils, or miscellaneous land types. Due to limitations imposed by the small scale of the soil survey maps, it is not uncommon for wetlands to exist within areas not mapped as hydric (wetland) soils, and areas mapped as hydric soils often are not wetlands. This concept is emphasized in the Web Soil Survey:

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Urban land (UR) – The NRCS maps this land type in the general vicinity of the site. Urban land describes areas where the surface is covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material. Five percent of this map unit is comprised of Udorthents, which are also typical of disturbed areas.

In addition to the NRCS soils mapping, the Historic Fill Maps of the Camden and Runnemede Quadrangles (NJDEP 2004) were reviewed. These maps depict most of the site as "Historic Fill."

5.0 Mapped Wetlands and Open Waters

The NJ-Geo-Web (2023) does not map wetlands, streams, ponds, lakes, or any other types of aquatic resources on the site.

6.0 Results

6.1 Wetlands

One wetland was delineated on the site and classed within the "Palustrine System," per *The Classification of Wetlands and Deepwater Habitats of the United States, Second*

Edition (FGDC, 2013). The Palustrine System includes all non-tidal wetlands dominated by trees, shrubs, emergent vascular plants, emergent mosses or lichens, and tidal wetlands where the salinity is below 0.5 parts per thousand (ppt). The Palustrine System also includes wetlands lacking such vegetation, but with all the following four characteristics: 1) area less than 8 hectares (20 acres); 2) active wave-formed or bedrock shoreline features lacking; 3) water depth in the deepest part of basin less than 2 m at low water; and 4) salinity due to ocean-derived salts less than 0.5 ppt.

The wetland, delineated as the "WL" series with 13 set points, is predominantly a scrub-shrub wetland with colonies of herbaceous species. A narrow fringe of trees is established along the upper reaches of the wetland and a few trees are within the main body of the wetland. The shrub layer was dominated by silky dogwood (*Cornus amomum*), with some highbush cranberry (*Viburnum opulus*) and Amur honeysuckle (*Lonicera maackii*). Herbaceous species in the wetland included colonies of common reed (*Phragmites australis*) and jewelweed (*Impatiens capensis*). Trees in the wetland included silver maple (*Acer saccharinum*), white willow (*Salix alba*), and white mulberry (*Morus alba*).

Standing water was present in several parts of the wetland, otherwise the soils were saturated at or near the soil surface. Most soils in the wetlands were muck or mucky sand. The NRCS hydric soil indicator A1 (Histosol) was observed throughout the wetland.

6.2 State Open Waters

One small stream was observed within the wetland, but it was not delineated separately from the wetland, primarily due to access limitations across the deep mucky soils of the adjacent wetland. The stream meandered through dogwood thickets and stands of common reed and in some areas the channel was completely obscured by dense vegetation. The stream flows southwestward across the southern limit of the site and eventually empties to Big Timber Creek.

6.3 Uplands.

The upland habitats on the site were comprised predominantly of graded, cut and filled land. Most of the observed species in the uplands were non-native. The upland habitat supported a tree canopy comprised of black locust (*Robinia pseudoacacia*), black cherry (*Prunus serotina*), sassafras (*Sassafras albidum*), common hackberry (*Celtis occidentalis*), tree-of-heaven (*Ailanthus altissima*), southern red oak (*Quercus falcata*), and white mulberry. The understory included Amur honeysuckle (*Lonicera maackii*), multiflora rose (*Rosa multiflora*), Allegheny blackberry (*Rubus allegheniensis*), and common greenbrier (*Smilax rotundifolia*). Common herbaceous species in the uplands were garlic mustard (*Alliaria petiolata*), crow garlic (*Allium vineale*), cleavers (*Galium aparine*), hairy bittercress (*Cardamine hirsuta*), and Persian speedwell (*Veronica persica*). Poison ivy (*Toxicodendron radicans*), English ivy (*Hedera helix*), Asian bittersweet (*Celastrus occidentalis*), Japanese

honeysuckle (*Lonicera japonica*), and fox grape (*Vitis labrusca*) were common vines in the uplands. Many trees throughout the uplands were densely overgrown with vines.

Soils extracted from test pits that were advanced throughout the uplands included high percentages of unconsolidated fill material, an indication of considerable past disturbance. Native soils were not encountered.

7.0 Conclusion

The wetland delineation results show that the southern part of Block 126, Lot 12 supports a narrow freshwater wetland habitat with forested, scrub/shrub, and herbaceous components. The wetland is dominated by species common to wetlands in the region. The upland habitat is typical of regional, previously disturbed urban areas and supports common herbaceous plants, shrubs, and trees, many of which are non-native. One small stream was observed within the body of the wetland but was not delineated separately due to access limitations.

8.0 References

- Code of Federal Regulations. Definition of Waters of the United States. 33 CFR Part 328
- Federal Emergency Management Agency. 2023. Flood Insurance Rate Map 34007C0038F. Available at: <https://msc.fema.gov/portal/home>
- Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
- Federal Interagency Committee for Wetland Delineation. 1989. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service, Washington, D.C. Cooperative technical publication.
- Federal Register. Feb. 24, 1995. Changes in Hydric Soils of the United States. Washington, DC.
- Munsell Color. 2009 (2021 production). Munsell Soil Color Book. Grand Rapids, Michigan.
- New Jersey Department of Environmental Protection. 2016. Surface water quality standards. N.J.A.C. 7:9B. Amended April 6, 2020.
- NJDEP – Land Use Management – N.J. Geological Survey. 2004. Historic Fill of the Camden Quadrangle. Historic Fill Map HFM 103.

- NJDEP – Land Use Management – N.J. Geological Survey. 2004. Historic Fill of the Runnemede Quadrangle. Historic Fill Map HFM 115.
- New Jersey GeoWeb. 2023. Available at:
<https://njdep.maps.arcgis.com/apps/webappviewer/>
- U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-20. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Army Corps of Engineers. 2020. National Wetland Plant List, version 3.5 Available at: <http://wetland-plants.usace.army.mil/>
- U.S. Department of Agriculture, Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture handbook 296.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 2023. Web Soil Survey. Available at: <http://soils.usda.gov>
- U.S. Department of the Interior - Geological Survey. 2019a. Camden, NJ-PA Quadrangle, 7.5-Minute Series (Topographic).
- U.S. Department of the Interior - Geological Survey. 2019b. Runnemede, NJ Quadrangle, 7.5-Minute Series (Topographic).
- U.S. Environmental Protection Agency. 2023. WATERS GeoViewer. Available at:
<https://epa.maps.arcgis.com/apps/webappviewer/>

FIGURES



Figure 1: Site Mapped Over A 2020 Aerial Map Published By NJGIN

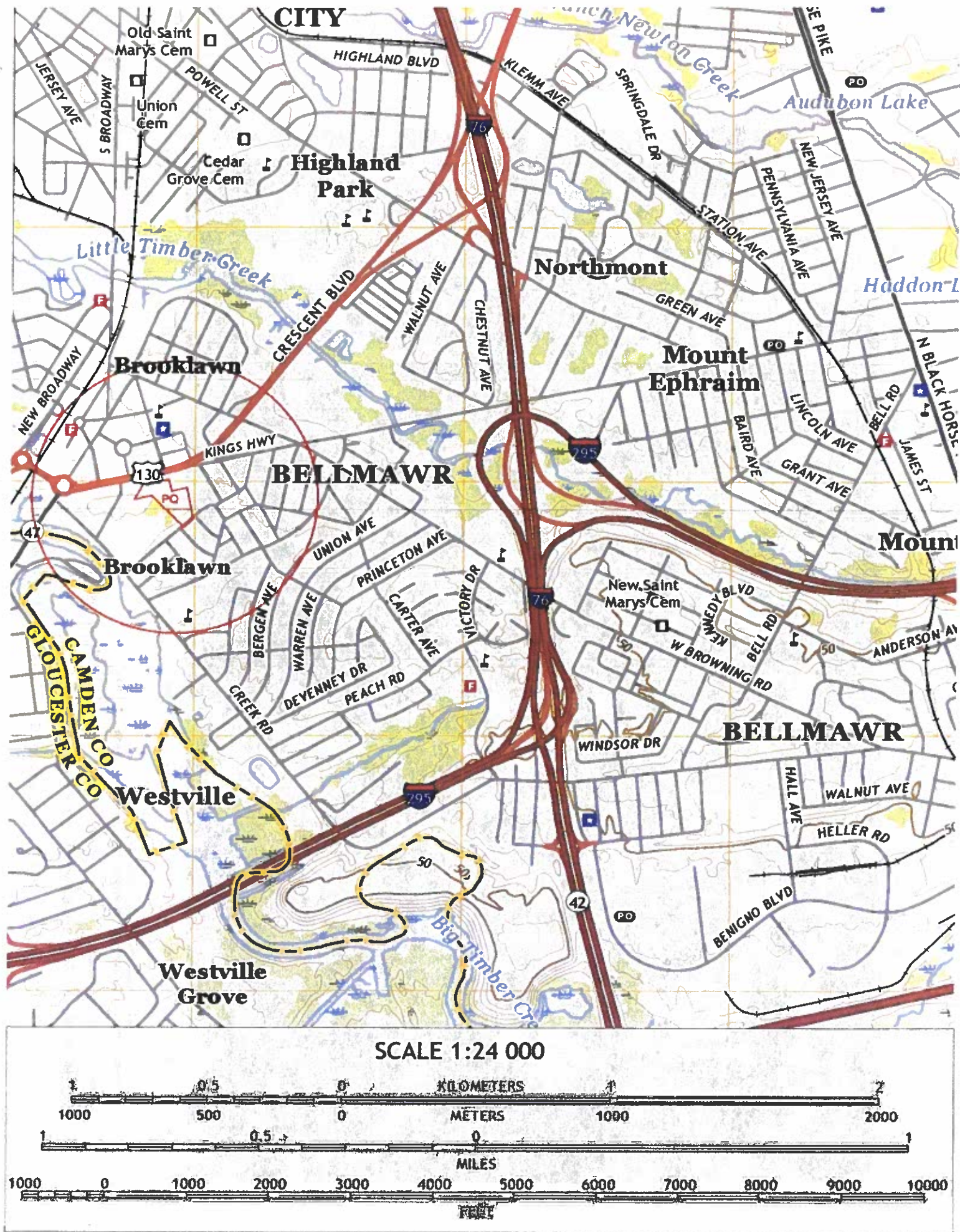


Figure 2: Site Mapped Over A Portion Of Camden & Runnemed USGS Quadrangle - A USGS Publication



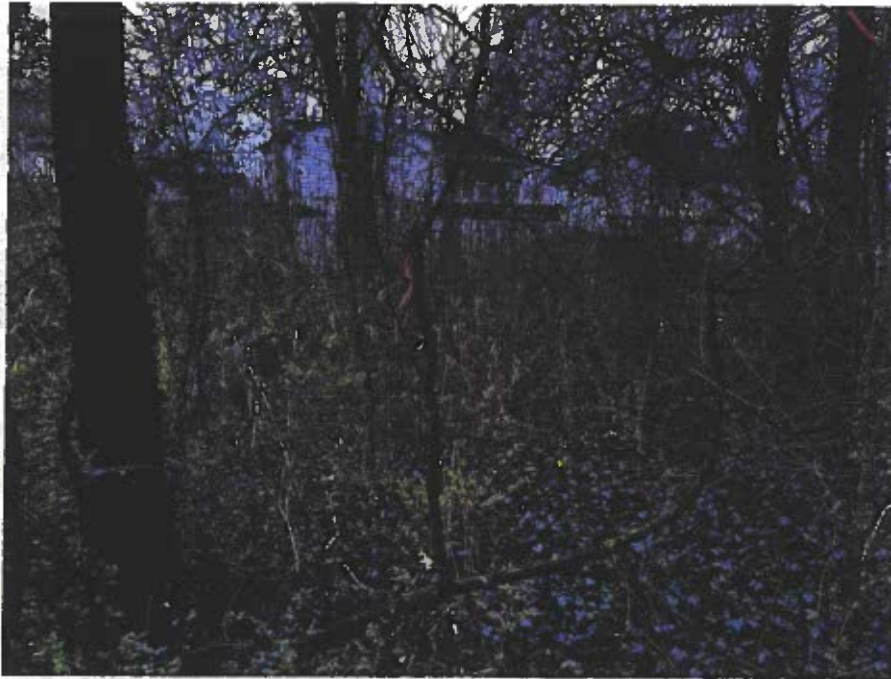
Figure 3: Site Mapped Over A Portion of Soil Survey Map (Obtained From USDA NRCS Web Site)

EXHIBITS

EXHIBIT A
Photographs

Exhibit A

Photographs



Photograph 1: View southwest toward wetland flag WL-2.



Photograph 2: View southwest at the interior of the eastern part of the wetland.

Photographs: March 25, 2023

Exhibit A Photographs



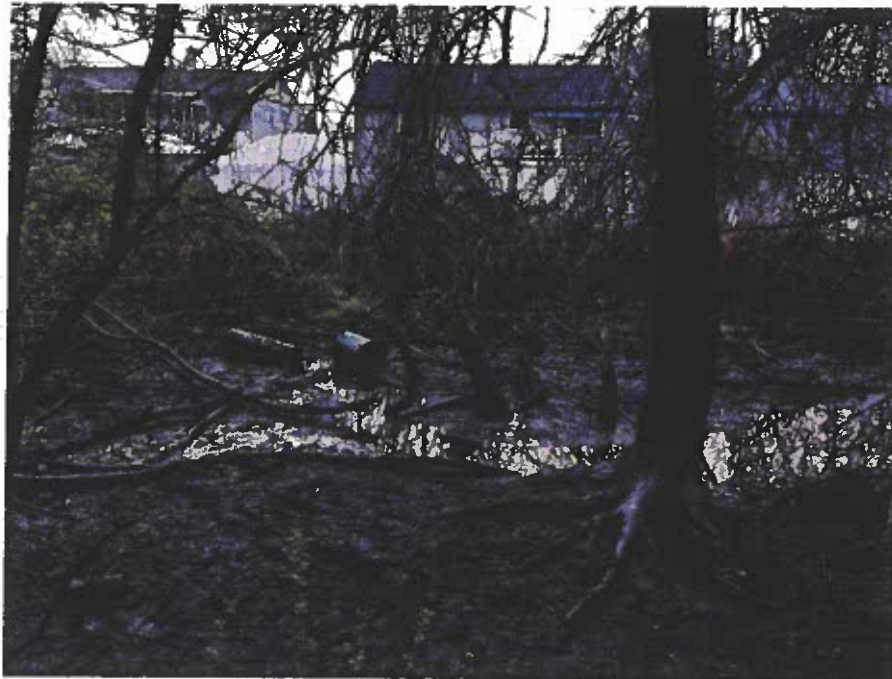
Photograph 3: View southwest through the wetland interior.



Photograph 4: View northeast across upland forest densely overgrown with vines.

Photographs: March 25, 2023

Exhibit A Photographs



Photograph 5: View southeast at wetland sampling point S-4.



Photograph 6: View southeast at wetland sampling point S-2.

Photographs: March 25, 2023

EXHIBIT B

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Crescent Boulevard City/County: Brooklawn / Camden Sampling Date: 3/25/2023
 Applicant/Owner: Private Landowner State: New Jersey Sampling Point: S1
 Investigator(s): A. Froonjian, PWS Section, Township, Range: Block 126, Lot 12
 Landform (hillslope, terrace, etc.): Anthropogenic (Historic Fill) Local Relief (concave, convex, none): Convex Slope (%): 3
 Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39.874596° Long: -75.118209° Datum: WGS 1984
 Soil Map Unit Name: Urban land (UR) NWI Classification: Not mapped by the NWI
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil ☒, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area within a Wetland?	Yes ☐	No ☒
Hydric Soils Present?	Yes ☐	No ☒			
Wetland Hydrology Present?	Yes ☐	No ☒			
Remarks: (Explain alternative procedures here or in a separate report.)					
Upland sampling point near delineation flag WL-7.					

HYDROLOGY

Wetland Hydrology Indicators: Primary Wetland Hydrology Indicators (minimum of one is required; list all that apply) ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Mud Deposits (B15) (LRR-U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on 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)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR-T, U)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? <u>No</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: S1

Tree Stratum (Plot size: 30' radius)				DominanceTest worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status	Number of Dominant Species	
1. <i>Robinia pseudoacacia</i>	70.0	Yes	UPL	That are OBL, FACW, or FAC	0 (A)
2. <i>Celtis occidentalis</i>	5.0	No	FACU	Total Number of Dominant	
3. <i>Ailanthus altissima</i>	2.0	No	FACU	Species Across All Strata:	5 (B)
4.				Percent of Dominant Species	
5.				That are OBL, FACW, or FAC	0.0% (A/B)
6.				Prevalence Index worksheet:	
7.				Total % Cover of:	Multiply by:
8.				OBL species	0.0 x 1 = 0.0
	77.0 =Total Cover			FACW species	0.0 x 2 = 0.0
50% of total cover: 38.5		20% of total cover: 15.4		FAC species	0.0 x 3 = 0.0
Sapling/Shrub Stratum (Plot size: 15' radius)				FACU species	102.0 x 4 = 408.0
1. <i>Lonicera maackii</i>	60.0	Yes	UPL	UPL species	130.0 x 5 = 650.0
2. <i>Rosa multiflora</i>	15.0	Yes	FACU		232.0 (A) 1058.0 (B)
3.					
4.					
5.					
6.					
7.					
8.					
	75.0 =Total Cover			Prevalence Index (B/A) =	4.6
50% of total cover: 37.5		20% of total cover: 15		Hydrophytic Vegetation Indicators:	
Herb Stratum (Plot size: 5' radius)				1 - Rapid Test for Hydrophytic Vegetation	
1. <i>Lonicera japonica</i>	40.0	Yes	FACU	2 - Dominance Test is > 50%	
2. <i>Galium aparine</i>	20.0	Yes	FACU	3 - Prevalence Index is ≤ 3.0 ¹	
3. <i>Alliaria petiolata</i>	15.0	No	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)	
4. <i>Hedera helix</i>	5.0	No	FACU		
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
	80.0 =Total Cover			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
50% of total cover: 40		20% of total cover: 16		Definitions of Four Vegetation Strata:	
Woody Vine Stratum (Plot size: 30' radius)				Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH) regardless of height.	
1.				Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 feet (1 m) tall.	
2.				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.	
3.				Woody Vine - All woody vines greater than 3.28 ft. in height.	
4.					
5.					
	0.0 =Total Cover			HydrophyticVegetation Present? No	
50% of total cover: 0		20% of total cover: 0			
Remarks: (If observed, list morphological adaptations below.)					

Soil

Sampling Point: S1

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS = Masked Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

Indicators for Problematic Hydric Soils³:

Histosol (A1)	Polyvalue Below Surface (S8) (LRR S, T, U)	1 cm Muck (A9) (LRR O)
Histic Epipedon (A2)	Thin Dark Surface (S9) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histic (A3)	Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside of MLRA 150A, B)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20) (MLRA 153B)
Organic Bodies (A6) (LRR P, T, U)	Redox Dark Surface (F6)	Red Parent Material (F21)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Depleted Dark Surface (F7)	
Muck Presence (A8) (LRR U)	Redox Depressions (F8)	Very Shallow Dark Surface (F22) (For testing outside of MLRA 138 and West Florida portions of MLRA 152A and 154)
1 cm Muck (A9) (LRR P, T)	Marl (F10) (LRR U)	
Depleted Below Dark Surface (A11)	Depleted Ochre (F11) (MLRA 151)	Other (Explain in Remarks)
Thick Dark Surface (A12)	Iron-Manganese Mosses (F12) (LRR O, P, T)	
Coast Prairie Redox (A16) (MLRA 150A)	Umbria Surface (F13) (LRR P, T, U)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
Sandy Mucky Mineral (S1) (LRR O, S)	Delta Ochre (F17) (MLRA 151)	
Sandy Gleyed Matrix (S4)	Reduced Vertic (F18) (MLRA 150A, 150B)	
Sandy Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA 149A)	
Stripped Matrix (S6)	Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
Dark Surface (S7) (LRR P, S, T, U)		

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

No

Remarks:

Soil colors include 10YR 4/4 and 7.5YR 4/4. Fill material throughout the soil profile. Some surface rubble as well.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site:	Crescent Boulevard	City/County:	Brooklawn / Camden	Sampling Date:	3/25/2023
Applicant/Owner:	Private Landowner	State:	New Jersey	Sampling Point:	S2
Investigator(s):	A. Froonjian, PWS	Section, Township, Range:	Block 126, Lot 12		
Landform (hillslope, terrace, etc.):	Drainageway	Local Relief (concave, convex, none):	Concave	Slope (%):	1
Subregion (LRR or MLRA):	LRR S, MLRA 149A	Lat:	39.874529°	Long:	-75.118151°
		Datum:	WGS 1984		
Soil Map Unit Name:	Urban land (UR)	NWI Classification:	Not mapped by the NWI		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)					
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐					
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)					

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

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soils Present?	Yes ☒	No ☐	
Wetland Hydrology Present?	Yes ☒	No ☐	
Remarks: (Explain alternative procedures here or in a separate report.) Wetland sampling point near delineation flag WL-7.			

HYDROLOGY

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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:																																	
Remarks: Drainage patterns throughout.																																	

Sampling Point: S2

Atlantic and Gulf Coastal Plain Region -- Version 2.0

Sampling Point: S2

[illegible]²Location: PL=Pore Lining, M=Matrix

✓ Histosol (A1)	----- Polyvalue Below Surface (S8) (LRR S, T, U)
Histic Epipedon (A2)	----- Thin Dark Surface (S9) (LRR S, T, U)
Black Histic (A3)	----- Loamy Mucky Mineral (F1) (LRR O)
Hydrogen Sulfide (A4)	----- Loamy Gleyed Matrix (F2)
Stratified Layers (A5)	----- Depleted Matrix (F3)
Organic Bodies (A6) (LRR P, T, U)	----- Redox Dark Surface (F6)
5 cm Mucky Mineral (A7) (LRR P, T, U)	----- Depleted Dark Surface (F7)
Muck Presence (A8) (LRR U)	----- Redox Depressions (F8)
1 cm Muck (A9) (LRR P, T)	----- Marl (F10) (LRR U)
Depleted Below Dark Surface (A11)	----- Depleted Ochric (F11) (MLRA 151)
Thick Dark Surface (A12)	----- Iron-Manganese Mosses (F12) (LRR O, P, T)
Coast Prairie Redox (A16) (MLRA 150A)	----- Umbria Surface (F13) (LRR P, T, U)
Sandy Mucky Mineral (S1) (LRR O, S)	----- Delta Ochric (F17) (MLRA 151)
Sandy Gleyed Matrix (S4)	----- Reduced Vertic (F18) (MLRA 150A, 150B)
Sandy Redox (S5)	----- Piedmont Floodplain Soils (F19) (MLRA 149A)
Stripped Matrix (S6)	----- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
Dark Surface (S7) (LRR P, S, T, U)	

2 cm Muck (A10) (LRR S)
Reduced Vertic (F18) (outside of MLRA 150A, B)
Piedmont Floodplain Soils (F19) (LRR P, S, T)
Anomalous Bright Loamy Soils (F20) (MLRA 153B)
Red Parent Material (F21)
Very Shallow Dark Surface (F22) (For testing outside of
MLRA 138 and West Florida portions of MLRA 152A and
154)
Other (Explain in Remarks)

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

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Some sandy lenses in the matrix.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Crescent Boulevard City/County: Brooklawn / Camden Sampling Date: 3/25/2023
 Applicant/Owner: Private Landowner State: New Jersey Sampling Point: S3
 Investigator(s): A. Froonjian, PWS Section, Township, Range: Block 126, Lot 12
 Landform (hillslope, terrace, etc.): Anthropogenic (Historic Fill) Local Relief (concave, convex, none): Convex Slope (%): 3
 Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39.874744° Long: -75.117897° Datum: WGS 1984
 Soil Map Unit Name: Urban land (UR) NWI Classification: Not mapped by the NWI
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil ☒, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soils Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	
Remarks: (Explain alternative procedures here or in a separate report.)			
Upland sampling point near delineation flag WL-4.			

HYDROLOGY

Wetland Hydrology Indicators: Primary Wetland Hydrology Indicators (minimum of one is required, list all that apply) ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Mud Deposits (B15) (LRR-U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on 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)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR-T, U)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? <u>No</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: S3

Tree Stratum (Plot size: 30' radius)					Dominance Test worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status	Number of Dominant Species		
1. <i>Prunus serotina</i>	50.0	Yes	FACU	That are OBL, FACW, or FAC	1	(A)
2. <i>Morus alba</i>	25.0	Yes	FACU	Total Number of Dominant		
3. <i>Ilex opaca</i>	5.0	No	FAC	Species Across All Strata	7	(B)
4.				Percent of Dominant Species		
5.				That are OBL, FACW, or FAC	14.3%	(A/B)
6.				Prevalence Index worksheet:		
7.				Total % Cover of:	Multiply by:	
8.				OBL species	0.0	x 1 = 0.0
	80.0 =Total Cover			FACW species	0.0	x 2 = 0.0
50% of total cover: 40		20% of total cover: 16		FAC species	10.0	x 3 = 30.0
Sapling/Shrub Stratum (Plot size: 15' radius)				FACU species	160.0	x 4 = 640.0
1. <i>Rosa multiflora</i>	60.0	Yes	FACU	UPL species	20.0	x 5 = 100.0
2. <i>Lonicera maackii</i>	20.0	Yes	UPL		190.0 (A)	770.0 (B)
3.				Prevalence Index (B/A) = 4.1		
4.				Hydrophytic Vegetation Indicators:		
5.				1 - Rapid Test for Hydrophytic Vegetation		
6.				2 - Dominance Test is > 50%		
7.				3 - Prevalence Index is ≤ 3.0 ¹		
8.				Problematic Hydrophytic Vegetation ¹ (Explain)		
	80.0 =Total Cover			Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
50% of total cover: 40		20% of total cover: 16		Definitions of Four Vegetation Strata:		
Herb Stratum (Plot size: 5' radius)				Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH) regardless of height.		
1. <i>Alliaria petiolata</i>	20.0	Yes	FACU	Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 feet (1 m) tall.		
2. <i>Allium vineale</i>	5.0	Yes	FACU	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.		
3.				Woody Vine - All woody vines greater than 3.28 ft. in height.		
4.				Hydrophytic Vegetation Present? No		
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
	25.0 =Total Cover					
50% of total cover: 12.5		20% of total cover: 5				
Woody Vine Stratum (Plot size: 30' radius)						
1. <i>Toxicodendron radicans</i>	5.0	Yes	FAC			
2.						
3.						
4.						
5.						
	5.0 =Total Cover					
50% of total cover: 2.5		20% of total cover: 1				
Remarks: (If observed, list morphological adaptations below.)						

Soil

Sampling Point: S3

[illegible]

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Crescent Boulevard City/County: Brooklawn / Camden Sampling Date: 3/25/2023
 Applicant/Owner: Private Landowner State: New Jersey Sampling Point: S4
 Investigator(s): A. Froonjian, PWS Section, Township, Range: Block 126, Lot 12
 Landform (hillslope, terrace, etc.): Drainageway Local Relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39.874669° Long: -75.117834° Datum: WGS 1984
 Soil Map Unit Name: Urban land (UR) NWI Classification: Not mapped by the NWI
 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 ☐ Hydric Soils Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: (Explain alternative procedures here or in a separate report.) Wetland sampling point near delineation flag WL-7.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Wetland Hydrology Indicators (minimum of one is required; list all that apply) ☒ Surface Water (A1) ☐ Aquatic Fauna (B13) ☒ High Water Table (A2) ☐ Mud Deposits (B15) (LRR U) ☒ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☒ Water Marks (B1) ☐ Oxidized Rhizospheres on 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)	Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☐ No ☒ Depth (inches): _____ Saturation Present? Yes ☐ No ☒ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>Yes</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	

Sampling Point: S4

Atlantic and Gulf Coastal Plain Region – Version 2.0

Sampling Point: S4

Atlantic and Gulf Coastal Plain Region -- Version 2.0

EXHIBIT C

Vegetation List

Observed Vegetation

Scientific Name	Common Name	Indicator Status*	Non-Native
<i>Acer platanoides</i>	Norway Maple	UPL	✓
<i>Acer saccharinum</i>	Silver Maple	FAC	
<i>Ailanthus altissima</i>	Tree-of-Heaven	FACU	✓
<i>Alliaria petiolata</i>	Garlic Mustard	FACU	✓
<i>Allium vineale</i>	Crow Garlic	FACU	✓
<i>Cardamine hirsuta</i>	Hairy Bittercress	FACU	✓
<i>Catalpa bignonioides</i>	Southern Catalpa	UPL	✓
<i>Celastrus orbiculatus</i>	Asian Bittersweet	FACU	✓
<i>Celtis occidentalis</i>	Common Hackberry	FACU	
<i>Cornus amomum</i>	Silky Dogwood	FACW	
<i>Euonymus alatus</i>	Winged Euonymus		✓
<i>Fraxinus americana</i>	White Ash	FACU	
<i>Galium aparine</i>	Cleavers	FACU	
<i>Hedera helix</i>	English Ivy	FACU	✓
<i>Ilex opaca</i>	American Holly	FAC	
<i>Impatiens capensis</i>	Jewelweed	FACW	
<i>Juglans nigra</i>	Black Walnut	UPL	
<i>Lonicera japonica</i>	Japanese Honeysuckle	FACU	✓
<i>Lonicera maackii</i>	Amur Honeysuckle		✓
<i>Morus alba</i>	White Mulberry	FACU	✓
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	FACU	
<i>Phragmites australis</i>	Common Reed	FACW	✓
<i>Phytolacca americana</i>	American Pokeweed	FACU	
<i>Plantago lanceolata</i>	English Plantain	FACU	✓
<i>Prunus serotina</i>	Black Cherry	FACU	
<i>Quercus falcata</i>	Southern Red Oak	FACU	
<i>Robinia pseudoacacia</i>	Black Locust	UPL	✓
<i>Rosa multiflora</i>	Multiflora Rose	FACU	✓
<i>Rubus allegheniensis</i>	Allegheny Blackberry	UPL	
<i>Salix alba</i>	White Willow	FACW	✓
<i>Sassafras albidum</i>	Sassafras	FACU	
<i>Smilax rotundifolia</i>	Common Greenbriar	FAC	
<i>Toxicodendron radicans</i>	Poison Ivy	FAC	
<i>Veronica persica</i>	Common Speedwell		✓
<i>Viburnum opulus</i>	Highbush-Cranberry	FACW	✓
<i>Vitis labrusca</i>	Fox Grape	FAC	

Total Species	36
Total Native Species	17
Total Non-native Species	19
Percent Native	47.2%
Percent Non-native	52.8%

***Indicator Status Categories (USACE Short Definitions)**

Obligate Wetland Plants (OBL): Almost always occur in wetlands.

Facultative Wetland Plants (FACW): Usually occur in wetlands, but may occur in non-wetlands.

Facultative Wetland Plants (FAC): Occur in wetlands and non-wetlands.

Facultative Upland Plants (FACU): Usually occur in non-wetlands, but may occur in wetlands.

Upland Plants (UPL): Almost never occur in wetlands.

If the indicator status is blank, the species is not included on the Atlantic and Gulf Coastal Region section of the National Wetland Plant List.

Indicator Category Definitions: Lichvar, R.W., N.C. Melvin, M.L. Butterwick, and W.N. Kirchner. 2012. National Wetland Plant List Indicator Rating Definitions. US Army Corps of Engineers, Engineer Research and Development Center, ERDC/CRREL TN-12-1.

Current Species Ratings: U.S. Army Corps of Engineers. 2018. National Wetland Plant List, version 3.4. <http://wetland-plants.usace.army.mil/> U.S. Army Corps of Engineers Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH

Indicator Status Distribution		
Total OBL Taxa	0	0.0%
Total FACW Taxa	5	13.9%
Total FAC Taxa	5	13.9%
Total FACU Taxa	18	50.0%
Total UPL Taxa	5	13.9%
Total Not Listed Taxa	3	8.3%
	36	100.0%