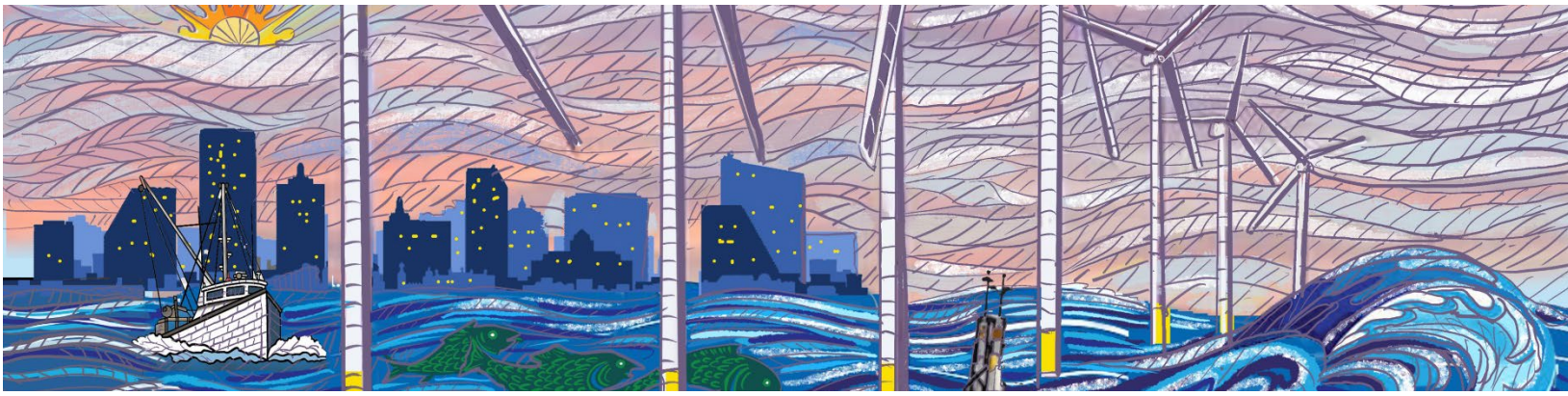

Appendix II-D2

Wetland and Stream Delineation Report - Larrabee

Note:

On March 26, 2021, Atlantic Shores Offshore Wind, LLC (Atlantic Shores) submitted a Construction and Operations Plan (COP) to BOEM for the southern portion of Lease OCS-A 0499. On June 30, 2021, the New Jersey Board of Public Utilities (NJ BPU) awarded Atlantic Shores an Offshore Renewable Energy Credit (OREC) allowance to deliver 1,509.6 megawatts (MW) of offshore renewable wind energy into the State of New Jersey. In response to this award, Atlantic Shores updated Volume 1 of the COP to divide the southern portion of Lease OCS-A 0499 into two separate and electrically distinct Projects. Project 1 will deliver renewable energy under this OREC allowance and Project 2 will be developed to support future New Jersey solicitations and power purchase agreements.

As a result of the June 30, 2021 NJ BPU OREC award, Atlantic Shores updated Volume I (Project Information) of the COP in August 2021 to reflect the two Projects. COP Volume II (Affected Environment) and applicable Appendices do not currently include this update and will be updated to reflect Projects 1 and 2 as part Atlantic Shores' December 2021 COP revision.

Wetland and Stream Delineation Report

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

Borough of Sea Girt, Township of Wall, and Township of Howell

Monmouth County, New Jersey

Prepared for:

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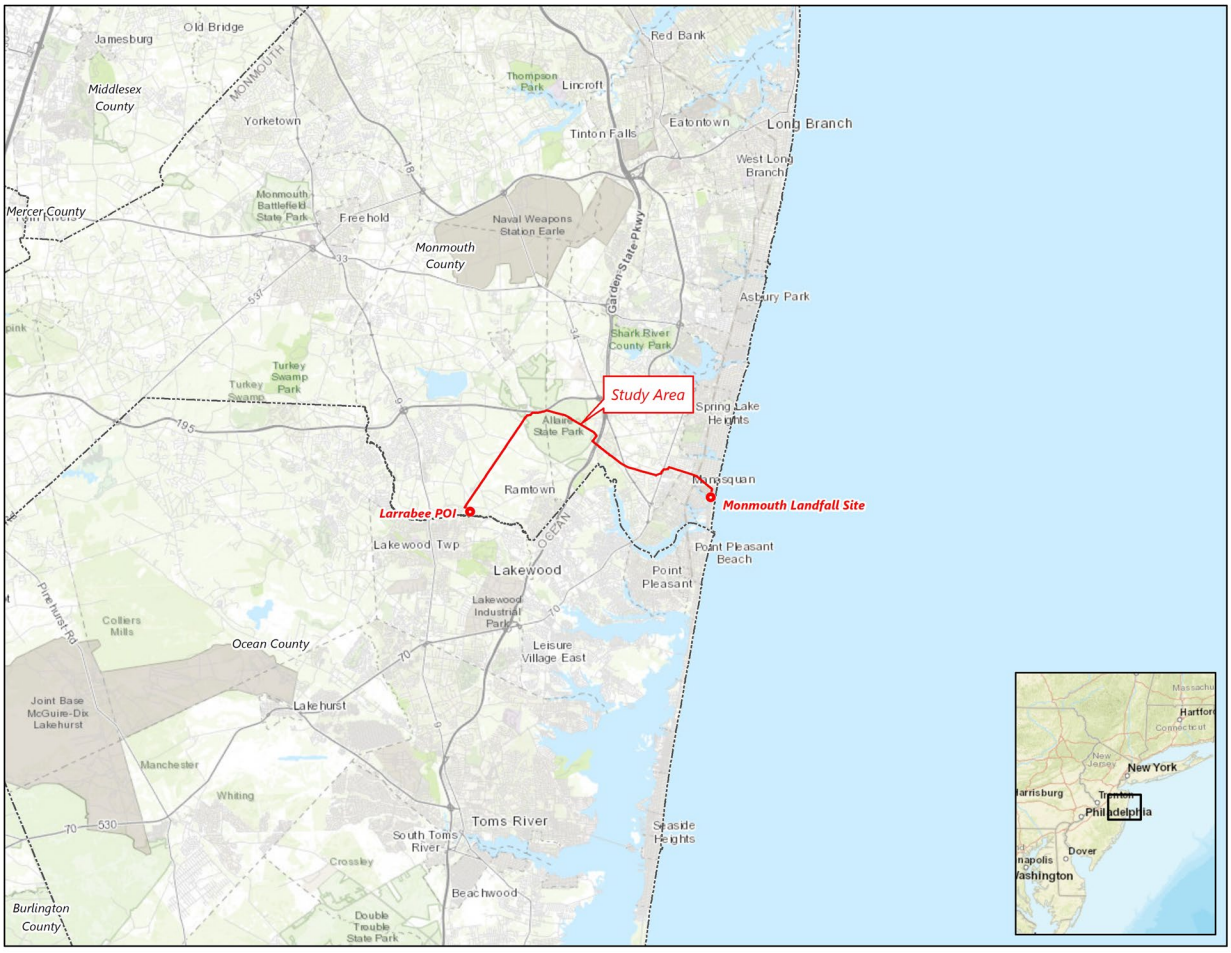
ACRONYM LIST

Atlantic Shores Offshore Wind, LLC	Atlantic Shores
Code of Federal Regulations	CFR
Diameter breast height	dbh
Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.	EDR
Environmental Protection Agency	EPA
Facultative	FAC
Facultative Upland	FACU
Facultative Wetland	FACW
Federal Emergency Management Agency	FEMA
Federal Manual for Identifying and Delineating Jurisdictional Wetlands	1989 Interagency Manual
Hydrologic Unit Codes	HUC
Letter of Interpretation	LOI
National Land Cover Dataset	NLCD
National Wetlands Inventory	NWI
Natural Resources Conservation Service	NRCS
New Jersey Administrative Code	N.J.A.C.
New Jersey Department of Environmental Protection	NJDEP
Obligate	OBL
Palustrine emergent wetland	PEM
Palustrine forested wetland	PFO
Palustrine Open Water	POW
Palustrine scrub-shrub wetland	PSS
Point of Interconnection	POI
Right-of-Way	ROW
Square feet	ft^2
United States Army Corps of Engineers	USACE
United States Fish & Wildlife Service	USFWS
United States Geologic Service	USGS
Upland	UPL

1.0 INTRODUCTION

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., was contracted by Atlantic Shores Offshore Wind, LLC (Atlantic Shores) to conduct wetland and stream delineations along the approximately 13-mile long and assumed 150-foot wide proposed Larrabee onshore interconnection cable route (onshore cable route) from the Monmouth Landfall of the submarine export cable at the Army National Guard training facility in the Borough of Sea Girt to the Point of Interconnection (POI) at the Larrabee Substation located in Howell Township and the potential substation locations, herein referred to as the Larrabee Study Area (Figure 1). This report characterizes the Larrabee Study Area and identifies and discusses the evaluation of the three wetland parameters (i.e., hydrology, soils, and vegetation) involved in determining the location and extent of jurisdictional wetland area boundaries. Due to access restrictions, wetland and stream delineations were not conducted on the potential substation locations; only a desktop evaluation.

Exhibit 1: Larrabee Study Area Location (not drawn to scale)



1.1 REGULATORY FRAMEWORK

Wetlands are defined as "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas*" (Environmental Protection Agency, 40 CFR 239.3 and Army Corps of Engineers, 33 CFR 328.3).

Navigable waters of the United States "*are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity*" (Army Corps of Engineers, 33 CFR 320.4).

Freshwater wetlands and waterbodies are typically under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) subject to Section 404 of the Clean Water Act; however, the New Jersey Legislature, in July 1987, passed the state's Freshwater Wetlands Protection Act which provided protection for inland and coastal wetlands. This act provided the framework for New Jersey to establish a comprehensive permitting program to regulate all activities in freshwater and tidal wetlands and wetland transition areas under N.J.A.C. 7:7 et. seq. As a result of this comprehensive permitting program, a memorandum of understanding between the United States Environmental Protection Agency (EPA), United States Fish & Wildlife Service (USFWS), and the New Jersey Department of Environmental Protection (NJDEP) and a memorandum of agreement between the USACE and NJDEP has provided New Jersey delegated federal authority over non-tidal freshwater wetlands within the state. Navigable waters of the U.S. and other wetlands within 1,000 feet of the head of tide remain under the regulatory jurisdiction of the USACE subject to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act but are also under NJDEP jurisdiction through the Freshwater Wetlands Protection Act.

Wetland transition areas, established under N.J.A.C. 7:7-9.28 and N.J.A.C. 7:7A-3.3(d), varies depending on the resource value classification of the associated wetland or surface water based on surface water quality standards, special area protections and fish and wildlife requirements. The following are the resource classifications and their associated wetland transition areas:

- Ordinary Resource Value (0-foot transition area) wetlands are those that are smaller than 5,000 ft^2, is considered a drainage ditch or swale, a detention facility created for stormwater purposes or existing in lawns, maintained landscaped areas and other disturbed locations.

- Intermediate Resource Value (50-foot transition area) wetlands are those wetlands that are not classified as either exceptional or ordinary resource value.
- Exceptional Resource Value (150-foot transition area in freshwater wetland systems and 300-foot in tidal wetland systems) wetlands are those that discharge into trout production waters or their tributaries or Category One[1] waters and are a present or documented habitat for threatened & endangered species.

Depending on project design and assessed impacts to the wetlands and waters identified, NJDEP permits and/or Section 10/404 permits from the USACE may be required.

1.2 PURPOSE

This report describes the results of the wetland and stream delineations conducted which includes identification of the federal and/or state jurisdictional wetland and water resources within the Study Area, discussion of the evaluation of the three wetland parameters (i.e., hydrology, soils, and vegetation), and the process of evaluating the three parameters to determine the location and extent of the federal and/or state jurisdictional boundaries of wetlands and waters. This report also includes a preliminary evaluation of the resource value of each wetland according to NJDEP regulations for the purpose of supporting required permit applications.

[1] According to N.J.A.C. 7:9B-1.4 "Category one waters" means those waters designated in the tables in N.J.A.C. 7:9B-1.15(c) through (i), for purposes of implementing the antidegradation policies set forth at N.J.A.C. 7:9B1.5(d), for protection from measurable changes in water quality based on exceptional ecological significance, exceptional recreational significance, exceptional water supply significance or exceptional fisheries resource(s) to protect their aesthetic value (color, clarity, scenic setting) and ecological integrity (habitat, water quality and biological functions).

2.0 GENERAL SITE CONDITIONS

Publicly available information used in determining the presence and approximate boundaries of wetlands and waters of the U.S. were obtained and reviewed prior to commencing field investigations and are summarized in the following sub-sections.

Materials and data supporting this investigation have been derived from a number of publicly available sources including United States Geological Survey (USGS) topographic mapping (i.e., Point Pleasant, Asbury Park, Farmingdale, and Lakewood NJ 7.5 minute quadrangles), USFWS National Wetlands Inventory (NWI) mapping, NJDEP Wetlands mapping, the Natural Resources Conservation Service (NRCS) Web Soil Survey (WebSoil Soil Survey 2020), the NRCS List of Hydric Soils of the State of New Jersey (NRCS 2020), the National Land Cover Dataset (NLCD) land cover and vegetation classes (Yang et al., 2018), and recent aerial photography.

Vascular plant names follow nomenclature found in the Integrated Taxonomic Information System (ITIS 2020), and wetland indicator status for plant species was determined by reference to the National Wetland Plant List (Lichvar et al., 2016). Jurisdictional areas were characterized according to the wetlands and deepwater habitats classification system used in NWI mapping (Cowardin, 1979).

2.1 PHYSIOGRAPHY AND SOILS

The Larrabee Study Area is located within the Outer Coastal Plain physiographic province of New Jersey. The local geography includes materials that are marine deposited sedimentary sands, gravels and clays overlain with later deposits of the interglacial Pleistocene time. The area is dominated by the Pinelands ecoregion which contains sandy and excessively well drained soils that have natural undulations in elevation. and are generally low fertility soils. The coastal plain province is also an important aquifer area due to the shallow depth to groundwater which supports a diverse system of drainages and wetlands (NCTC, 2020).

Hydric soils are defined as a "…*soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part,*" (USDA-SCS 1987) and is typically indicative of a wetland. Extended periods of inundation/saturation cause chemical reactions in the soil that alter the physical characteristics and soil color within the matrix. These properties are used to identify hydric soils and can often be observed during field investigations. Hydric mineral soils generally have a gleyed matrix, low chroma matrix and/or brightly colored redox concentrations (mottles). A representative gleyed soil will have blue, green, or gray coloration directly below the A-horizon, reflecting consistent long-term saturation. A soil containing redox concentrations with a low chroma matrix is usually a strong indicator of a fluctuating water table. Although soil series may be generally classified as hydric or potentially hydric in the online databases, this is for general use and does not supersede specific conditions

documented in the field. Within the Larrabee Study Area, elevations range from approximately sea level at the Monmouth Landfall location to 135 feet above mean sea level near Allaire State park associated with a large sandy knoll. The USGS map presented in Figure 1 shows the approximate range of mapped elevations within the Larrabee Study Area.

The Web Soil Survey of Monmouth County (Soil Survey Staff, 2020) indicates the occurrence of 28 soil series within the Study Area (Figure 2). Downer sandy loam (DoeBO) and Klej loamy sand (KkgB) are the dominant soils series mapped within the Larrabee Study Area with significant areas of Downer-urban land complex (DouB) and Atsion sand (AtsAO) also mapped. Soils range from very poorly drained to excessively drained, and soil textures range from sand to loam. Table 1 lists the soil series found within the Study Area and their characteristics. "Hydric" and "Potentially Hydric" designations are based on information obtained on the NRCS Web Soil Survey (Soil Survey Staff, 2020) and the National Hydric Soils List (NRCS, 2020).

Table 1. Study Area Soils

Mapping Unit Symbol	Series	Slope (%)	Drainage[1]	Hydric[2]	Potentially Hydric[3]
AtsAO	Atsion sand, Northern Tidewater Area	0-2	PD	YES	N/A
BerAt	Berryland sand, frequently flooded	0-2	VPD	YES	N/A
DocBO	Downer loamy sand, Northern Tidewater Area	0-5	WD	NO	YES
DocCO	Downer loamy sand, Northern Tidewater Area	5-10	WD	NO	NO
DoeBO	Downer sandy loam, Northern Tidewater Area	2-5	WD	NO	NO
DouB	Downer-Urban land complex	0-5	WD	NO	NO
EveB	Evesboro sand	0-5	ED	NO	YES
EveC	Evesboro sand	5-10	ED	NO	NO
EveD	Evesboro sand	10-15	ED	NO	NO
EveE	Evesboro sand	15-25	ED	NO	NO
FapA	Fallsington loams, Northern Coastal Plain	0-2	PD	YES	N/A
HboB	Hammonton sandy loam	2-5	MWD	NO	YES
HumAt	Humaquepts, frequently flooded	0-3	PD	YES	N/A
KkgB	Klej loamy sand	0-5	SPD	NO	YES
KkgkB	Klei loamy sandy clayey substratum	0-5	SPD	NO	YES
LakB	Lakehurst sand	0-5	MWD	NO	YES
LasB	Lakewood sand	0-5	ED	NO	YES
LasC	Lakewood sand	5-10	ED	NO	YES

Mapping Unit Symbol	Series	Slope (%)	Drainage[1]	Hydric[2]	Potentially Hydric[3]
PHG	Pits, sand and gravel	N/A	N/A	NO	NO
SacBO	Sassafras sandy loam, Northern Tidewater Area	2-5	WD	NO	NO
SacC	Sassafras sandy loam, Northern Coastal Plain	5-10	WD	NO	YES
SadB	Sassafras gravelly sandy loam	2-5	WD	NO	YES
SadC	Sassafras gravelly sandy loam	5-10	WD	NO	NO
SafA	Sassafras loam	0-2	WD	NO	YES
UdaB	Udorthents	0-8	WD	NO	NO
USBROA	Urban land-Brockatonnorton complex	0-2	MWD	NO	NO
WATERs	Water, saline	N/A	N/A	NO	NO
WogA	Woodstown loam, Northern Coastal Plain	0-2	MWD	NO	YES

[1] Soil drainage is represented by the following abbreviation: "ED" = excessively drained, "WD" = well drained, "MWD" = moderately well drained, and "SPD" = somewhat poorly drained, "PD" = poorly drained, and "VPD" = very poorly drained.
[2] "Yes" indicates this soil is listed as containing 66% or more hydric components within the map unit as listed on the USDA Web Soil Survey.
[3] "Yes" indicates this soil is listed as containing 1% to 65% hydric components within the map unit as listed on the USDA Web Soil Survey.

2.2 HYDROLOGY

The Study Area is located in the NJDEP Barnegat Bay and Monmouth Watershed Management Areas (WMAs) as shown in Figure 3. In addition, the Study Area spans across the following Hydrologic Unit Codes (HUC) that are within the two WMAs (Figure 3):

- HUC 8:
    - Mullica-Toms 02010301
- HUC 10:
    - Manasquan River – Atlantic Ocean (0204030108)
    - Metedeconk River (0204030104)
- HUC 12:
    - Lower Manasquan River-Atlantic Ocean (020403010800)
    - Middle Manasquan River (020103010105)
    - North Branch Metedeconk River (020403010202)

Most of the surface hydrology within the Larrabee Study Area is generated by precipitation and surface water run-off from adjacent land. Due to the sandy texture of the soil and portions of the Study Area near sea level, there are likely some areas where surface hydrology is influenced by groundwater discharge (particularly associated with the Manasquan River). Total annual precipitation (from 2000 to 2019) averages 45.99 inches at the Trenton NJ area and

47.21 inches in the Atlantic City Region (NOAA, 2020). The on-site wetland delineation took place during and after the growing season between June 24 and 26 and December 7, 8, and 10, 2020. Precipitation for the month of May was lower compared to the typical monthly average in the Atlantic City and Trenton NJ areas. Precipitation for the month of November was much higher than the typical monthly average in the Atlantic City and Trenton, NJ areas.

2.3 FEDERAL AND STATE MAPPED WETLANDS AND STREAMS

New Jersey State Mapped wetlands indicate that there are 52 mapped wetlands totaling approximately 24 acres within the Larrabee Study Area (Figure 4). The mapped wetlands include agricultural wetlands (5.15 acres), coniferous wooded wetlands (0.29 acre), deciduous scrub/shrub wetlands (0.23 acre), deciduous wooded wetlands (15.15 acres), herbaceous wetlands (0.05 acre), a managed wetland in a built-up maintained recreation area (0.07 acre), mixed wooded wetlands (0.25 acre coniferous dominated and 3.26 acres deciduous dominated), and wetland right-of-way (0.06 acre).

NWI mapping indicates the presence of 29 wetland communities and 23 riverine resources totaling 13.6 acres within the Larrabee Study Area (Figure 4). Freshwater forested/shrub wetland communities are the dominant community types mapped on site, totaling approximately 10.9 acres. Other NWI-mapped communities within the Study Area include freshwater emergent wetlands (0.54 acre), freshwater ponds (0.6 acre) and riverine resources (1.5 acres).

New Jersey mapping identifies 26 waterways within the study area. The waterways include Dicks Brook, Haystack Brook, Tarkiln Brook, Woodcock Brook, Squankum Brook, Bear Swamp Brook, Judas Creek, Mill Run, Mingamahone Brook, Manasquan River and multiple unnamed tributaries to the Manasquan River, and Muddy Fork Brook and unnamed tributaries to Muddy Ford Brook.

2.4 MAPPED FLOODPLAINS

According to the Federal Emergency Management Agency (FEMA) map service, the majority of the Larrabee Study Area is outside of the 1% Chance Annual Floodplain, indicating, minimal flood hazard. These areas are associated with the with tributaries to and the Manasquan River, Squankum Brook, Haystack Brook, and the Atlantic Ocean and are in special flood hazard areas (100-year flood zone) (Figure 5).

2.5 VEGETATION

Land cover and vegetation occurring within the Study Area were evaluated using current NLCD mapping, which is compiled by the USGS (Yang et al., 2018), and further verified during the on-site field investigations. The Larrabee Study Area encompasses approximately 277 acres and consists primarily of rural single residences, other urban or

built-up land, as well as low-density single residences, commercial/services, medium-density single residences, deciduous wooded wetlands and deciduous forest with greater than 50% crown closure (Table 2).

Table 2. Vegetation/Land Cover Within the Study Area

Land Cover Class	Acres	Percent Cover (%)
Agricultural Wetlands (Modified)	3.4	1.2
Altered Lands	10.7	3.9
Artificial Lakes	0.7	0.2
Bridge Over Water	0.1	0.02
Commercial/Services	14.3	5.1
Confined Feeding Operations	0.1	0.1
Coniferous Brush/Shrubland	0.03	0.01
Coniferous Forest (>50% Crown Closure)	2.6	1.0
Coniferous Forest (10-50% Crown Closure)	0.5	0.2
Coniferous Wooded Wetlands	0.3	0.1
Cropland and Pastureland	12.6	4.5
Deciduous Brush/Shrubland	2.6	0.9
Deciduous Forest (>50% Crown Closure)	24.6	8.9
Deciduous Forest (10-50% Crown Closure)	7.5	2.7
Deciduous Wooded Wetlands	14.9	5.4
Disturbed Wetlands (Modified)	2.0	0.7
Former Agricultural Wetland (Becoming Shrubby, Not Built-Up)	0.4	0.2
Herbaceous Wetlands	0.04	0.02
Industrial	6.8	2.4
Major Roadway	6.7	2.4
Managed Wetland In Built-Up Maintained Rec Area	0.1	0.02
Military Installations	1.6	0.6
Mixed Deciduous/Coniferous Brush/Shrubland	4.2	1.5
Mixed Forest (>50% Coniferous With >50% Crown Closure)	0.7	0.3
Mixed Forest (>50% Deciduous With >50% Crown Closure)	7.2	2.6
Mixed Forest (>50% Deciduous With 10-50% Crown Closure)	1.6	0.6
Mixed Wooded Wetlands (Coniferous Dom.)	0.3	0.1
Mixed Wooded Wetlands (Deciduous Dom.)	3.8	1.4
Natural Lakes	0.1	0.04
Old Field (< 25% Brush Covered)	2.0	0.7
Orchards/Vineyards/Nurseries/Horticultural Areas	2.4	0.9
Other Agriculture	4.6	1.6

Other Urban or Built-Up Land	25.8	9.3
Railroads	0.2	0.1
Recreational Land	10.3	3.7
Residential, High Density or Multiple Dwelling	3.5	1.3
Residential, Rural, Single Unit	29.7	10.7
Residential, Single Unit, Low Density	17.7	6.4
Residential, Single Unit, Medium Density	13.1	4.7
Streams and Canals	0.2	0.1
Transitional Areas	0.1	0.04
Transportation/Communication/Utilities	16.4	5.9
Upland Rights-Of-Way Undeveloped	20.0	7.2
Wetland Rights-Of-Way	0.8	0.3
Total	277.1	100

Source: NLCD 2016 (Yang et al., 2018).

The location and extent of various land use and land cover locations is provided in Figure 6.

3.0 FIELD INVESTIGATIONS

An initial desktop analysis using the data sources described in Section 2.0 was conducted by EDR prior to performing on-site wetland delineations to identify areas likely to contain wetland and stream resources within the Larrabee Study Area. This desktop analysis guided the field wetland delineation conducted between June 24 and June 26, 2020 and December 7, 8, and 10, 2020. This section describes the methodology used to identify the location of wetland areas and determine the upland/wetland boundary in the field.

3.1 METHODOLOGY

The identification of wetland boundaries was based on the methodology described in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Interagency Manual) (Federal Interagency Committee for Wetland Delineation, 1989).

Wetland boundaries were defined in the field and mapped using a GPS unit with reported sub-meter accuracy. Data were collected from sample plots in representative wetland cover types and recorded on Routine Onsite Wetland Determination forms (Appendix B). The data collected at each delineated wetland included dominant vegetation, hydrology indicators, and soil characteristics.

According to the 1989 Interagency Manual an area has wetland hydrology when saturated to the surface or inundated at some point in time during an average rainfall year, defined by the following criteria:

1) Saturation to the surface normally occurs when soils in the following natural drainage classes meet the following conditions:
    a. In somewhat poorly drained mineral soils, the water table is less than 0.5 feet from the surface for usually one week or more during the growing season.
    b. In low permeability (greater than0.6 inches/hour), poorly drained or very poorly drained mineral soils, the water table is less than 1.5 feet from the surface for usually one week or more during the growing season.
    c. In more permeable, poorly drained or very poorly drained mineral soils, the water table is less than 1.0 foot from the surface for usually one week or more during the growing season.
    d. In poorly drained or very poorly drained organic soils, the water table is usually at a depth where saturation to the surface occurs more than rarely.
2) An area is inundated at some time if ponded or frequently flooded with surface water for one week or more during the growing season.

The manual lists field indicators of wetland hydrology including, but not limited to, visual observation of inundation, visual observation of soil saturation, oxidized channels (rhizospheres) associated with living roots and rhizomes, water

marks, drift lines, water-borne sediment deposits, water-stained leaves, surface scoured areas, wetland drainage patterns, morphological plant adaptations, and hydric soil characteristics.

The 1989 Interagency Manual defines hydrophytic vegetation as macrophytic plant life growing in water, soil or on a substrate that is at least periodically deficient of oxygen as a result of excessive water content. According to the manual an area has hydrophytic vegetation when, under normal circumstances, more than 50% of the composition of the dominant species from all strata are assigned wetland indicators of obligate, facultative wetland, and/or facultative; or a frequency analysis of all species within the community yields a prevalence index value of less than 3.0 when hydric soils and wetland hydrology are also present. Assessment of vegetation focused on the identification of plant species in four strata: trees (greater than 3 inches diameter at breast height [dbh]), saplings/shrubs (less than 3.0 inches dbh and greater than 3.2 feet tall), herbs (less than 3.2 feet tall), and woody vines. Dominance was determined by visually estimating those species having the greatest absolute percent cover within each stratum. Wetland indicator status for dominant plant species was determined by reference to the National Wetland Plant List (Lichvar et al., 2016). In addition, the 1989 Interagency Manual considers plants that have developed structural or morphological adaptations to inundation as indicators of hydric vegetation.

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (Federal Interagency Committee for Wetland Delineation, 1989). Hydric soil criteria are as follows:

1) All Histosols except Folists
2) Soils in aquatic suborders, aquatic sub-groups, Albolls suborder, Salorthids great group, or Pell great groups of Vertisols that are:
    a. somewhat poorly drained and have water table less than 0.5 feet from the surface for a significant period (usually a week or more) during the growing season, or
    b. poorly drained or very poorly drained and have either:
        i. water table at less than 1.0 foot from the surface for a significant period during the growing season if permeability is equal to or greater than 6.0 inches/hour in all layers within 20 inches
        ii. water table at less than 1.5 feet from the surface for a significant period during the growing season if permeability is less than 6.0 inches/hour in any layer within 20 inches
3) Soils that are ponded for long duration (seven days to one month) or very long duration (a single event that is greater than one month) during the growing season
4) Soils that are frequently flooded (50% chance of flooding in a given year) for long duration or very long duration during the growing season.

Hydric soil conditions were determined in the field through observation of soils composition, color, and morphology. Soils data were collected using a Dutch auger and tiling spade to examine the soil profile. Soil colors were determined using Munsell Soil Charts (Munsell Color, 2009). Information concerning soil series, color, texture, and matrix and mottle color was recorded for each delineated wetland and used to determine whether the soils displayed hydric characteristics.

Streams were identified based on the presence of observable bed and bank, flow regime, catchment area, and presence of ordinary high water line characteristics, including 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*" (CFR, 1986). Stream boundaries were defined and mapped in the field using the same method as described above for wetlands. Stream flow regime (i.e., perennial, intermittent, or ephemeral) was determined through evaluation of hydrologic, geomorphic, and biological characteristics (NC DWQ, 2010). Data regarding stream gradient (i.e., gentle, moderate, or steep), stream bank and channel width, water depth, stream bed substrate, in-stream cover, and biological indicators were collected and recorded on stream inventory forms (Appendix B).

All wetlands and streams identified within the Larrabee Study Area were classified based on the Cowardin Classification System (1979).

Representative photographs were taken of wetlands and streams delineated within the Larrabee Study Area. Photographs of delineated wetland and stream communities are included in Appendix C.

4.0 RESULTS

EDR environmental scientists identified 25 wetlands and 20 streams within the Larrabee Study Area as shown in the Wetland and Stream Delineation Plan in Appendix D. The data collected at each delineated wetland and stream, including presumed jurisdiction and NJDEP resource value classification are summarized in Table 3 and a detailed description of each resource is provided in Section 4.1. In accordance with the Cowardin et al. (1979) classification system, the waters delineated within the Study Area consist of the following community types: open water wetland (POW), palustrine emergent wetland (PEM), palustrine forested wetland (PFO), and palustrine scrub-shrub wetland (PSS).

Table 3. Delineated Wetlands and Streams

Delineation ID[1]	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type[2]					Stream Type[3]	Linear Feet of Stream Within Study Area	Resource Value Classification	Anticipated Federal Jurisdiction[4]	Anticipated State Jurisdiction[5]
			PEM	PSS	PFO	POW	Total					
WL1*	40.120158	-74.033983	0.3	--	--	--	0.3	--	--	Exceptional	No	Yes
WL2	40.131338	-74.072219	0.3	--	--	--	0.3	--	--	Ordinary	Yes	Yes
WL3	40.146067	-74.106983	--	--	--	0.1	0.1	--	--	Intermediate	Yes	Yes
WL4	40.146102	-74.107677	--	--	0.05	--	0.05	--	--	Intermediate	Yes	Yes
WL5	40.153287	-74.11058	0.3	--	0.05	0.2	0.55	--	--	Exceptional	Yes	Yes
WL6	40.156846	-74.118158	--	--	0.3	--	0.3	--	--	Exceptional	Yes	Yes
WL7	40.156267	-74.117783	0.02	--	--	--	0.02	--	--	Intermediate	Yes	Yes
WL8	40.156751	-74.118704	--	--	0.2	--	0.2	--	--	Intermediate	Yes	Yes
WL9	40.157489	-74.119501	0.01	--	--	--	0.01	--	--	Exceptional	Yes	Yes
WL10	40.157141	-74.119668	0.01	--	--	--	0.01	--	--	Intermediate	Yes	Yes
WL11	40.159765	-74.124342	0.07	--	--	--	0.07	--	--	Exceptional	Yes	Yes
WL12	40.162401	-74.132335	0.07	--	--	--	0.07	--	--	Ordinary	No	Yes
WL13	40.163396	-74.138051	--	0.04	0.2	--	0.24	--	--	Exceptional	Yes	Yes
WL14	40.163132	-74.145021	--	--	0.1	--	0.1	--	--	Exceptional	Yes	Yes
WL15	40.162942	-74.148605	--	--	0.2	--	0.2	--	--	Exceptional	Yes	Yes
WL16	40.160766	-74.154828	0.02	--	--	0.01	0.03	--	--	Intermediate	Yes	Yes
WL17	40.157545	-74.158312	--	0.05	--	--	0.05	--	--	Exceptional	Yes	Yes
WL18	40.152092	-74.163135	0.3	--	--	--	0.3	--	--	Exceptional	Yes	Yes
WL19	40.14654	-74.168092	--	--	0.8	--	0.8	--	--	Intermediate	Yes	Yes
WL20	40.143712	-74.170301	--	--	0.2	--	0.2	--	--	Intermediate	Yes	Yes
WL21	40.138814	-74.1749	--	--	1.5	--	1.5	--	--	Exceptional	Yes	Yes
WL22	40.133924	-74.179499	--	--	1.3	--	1.3	--	--	Exceptional	Yes	Yes
WL23	40.128765	-74.184047	--	--	0.5	--	0.5	--	--	Exceptional	Yes	Yes

Delineation ID[1]	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type[2]					Stream Type[3]	Linear Feet of Stream Within Study Area	Resource Value Classification	Anticipated Federal Jurisdiction[4]	Anticipated State Jurisdiction[5]
			PEM	PSS	PFO	POW	Total					
WL24	40.124341	-74.187698	0.4	--	--	--	0.4	--	--	Intermediate	Yes	Yes
WL25	40.118725	-74.192798	--	--	0.2	--	0.2	--	--	Exceptional	Yes	Yes
		Wetland Totals	1.8	0.09	5.6	0.31	7.8					
WC1	40.131362	-74.071477	--	--	--	--	--	R4 - Intermittent	83	--	Yes	Yes
WC2	40.146344	-74.107541	--	--	--	--	--	R3 - Upper Perennial	167	--	Yes	Yes
WC3	40.156752	-74.11812	--	--	--	--	--	R4 - Intermittent	472	--	Yes	Yes
WC4	40.157183	-74.119726	--	--	--	--	--	R2 - Lower Perennial	78	--	Yes	Yes
WC5	40.159661	-74.124639	--	--	--	--	--	R2 - Lower Perennial	106	--	Yes	Yes
WC6	40.163776	-74.139141	--	--	--	--	--	R5 - Unknown Perennial	95	--	Yes	Yes
WC7	40.163544	-74.143511	--	--	--	--	--	R2 - Lower Perennial	145	--	Yes	Yes
WC8	40.162955	-74.146708	--	--	--	--	--	R6 - Ephemeral	64	--	No	Yes
WC9	40.163065	-74.147431	--	--	--	--	--	R2 - Lower Perennial	221	--	Yes	Yes
WC10	40.162953	-74.148001	--	--	--	--	--	R6 - Ephemeral	239	--	No	Yes
WC11	40.161386	-74.154401	--	--	--	--	--	R2 - Lower Perennial	151	--	Yes	Yes

Delineation ID[1]	Latitude of Centroid	Longitude of Centroid	Wetland Acreage Within Study Area by Type[2]					Stream Type[3]	Linear Feet of Stream Within Study Area	Resource Value Classification	Anticipated Federal Jurisdiction[4]	Anticipated State Jurisdiction[5]
			PEM	PSS	PFO	POW	Total					
WC12	40.157542	-74.157889	--	--	--	--	--	R2 - Lower Perennial	76	--	Yes	Yes
WC13	40.152042	-74.163122	--	--	--	--	--	R2 - Lower Perennial	145	--	Yes	Yes
WC14	40.146771	-74.167965	--	--	--	--	--	R2 - Lower Perennial	122	--	Yes	Yes
WC15	40.138335	-74.175147	--	--	--	--	--	R2 - Lower Perennial	94	--	Yes	Yes
WC16	40.135096	-74.178206	--	--	--	--	--	R2 - Lower Perennial	131	--	Yes	Yes
WC17	40.128609	-74.184312	--	--	--	--	--	R2 - Lower Perennial	301	--	Yes	Yes
WC18	40.124908	-74.18719	--	--	--	--	--	R4 - Intermittent	141	--	Yes	Yes
WC19	40.123933	-74.188288	--	--	--	--	--	R2 - Lower Perennial	94	--	Yes	Yes
WC20	40.118677	-74.192976	--	--	--	--	--	R2 - Lower Perennial	110	--	Yes	Yes
								Total Linear Feet	3,035			

[1] Field ID assigned by EDR.
[2] Wetland community types are based upon the Cowardin et al. (1979) classification system: open water wetland (POW), palustrine emergent wetland (PEM), palustrine forested wetland (PFO), palustrine scrub-shrub wetland (PSS).
[3] Stream type is based upon the Cowardin et al. (1979) classification system: lower perennial (R2), upper perennial stream (R3), intermittent stream (R4), and ephemeral (R6).
[4] Based on visual observation of hydrologic connectivity in the field and review of available spatial data. Final jurisdictional determination to be made by the USACE.
[5] Based on existing NJDEP mapping of freshwater wetlands and streams. See Sections 2.2 and 3.3 for additional information.
* Indicates approximated wetland feature, wetland acreage is not exact.

None of these wetlands and streams are tidal or within 1,000 feet of the head of tide; therefore, USACE jurisdiction may not apply as it relates to Section 404 of the Clean Water Act because NJDEP has assumed jurisdiction under the state's Freshwater Wetlands Protection Act. As such, all delineated wetlands and streams included in Table 3 are expected to be potentially under the jurisdiction of the NJDEP. Descriptions of the delineated wetlands within the Study Area are provided below in Sections 4.2.1 and Section 4.2.2 provides descriptions of the delineated streams within the Study Area.

4.1.1 Wetlands

EDR identified 25 wetlands totaling approximately 7.8 acres within the Study Area. Many of the wetlands identified contained more than one community type. The area of each community type is summarized in Table 3 and a detailed description is provided below which includes information to support resource classifications of ordinary or exceptional. Wetlands that do not satisfy the definition of ordinary or exceptional are assumed to be intermediate resource value. One wetland, Wetland 1, was approximated due restricted access within a secured location in the National Guard training facility. The approximated value (wetland acreage) is therefore not exact as denoted in Table 3.

Wetland 1 (PEM)

Wetland 1 is a PEM wetland that is dominated by common reed (*Phragmites australis,* FACW). Soils were not viewed due to restricted access within a secure location in the National Guard training facility. Wetland hydrology indicators observed were inundation visible on aerial imagery, among others. This wetland was determined to be of exceptional resource value because of its proximity and connection to the dune system on the beach with multiple documented federal and state threatened and endangered species: northern hHarrier (*Circus hudsonius)*, Breeding Sighting; black-crowned Night-heron (*Nycticorax nycticorax*), Foraging; tricolored heron (*Egretta tricolor*), Foraging; yellow-crowned night-heron (*Nyctanassa violacea)*, Foraging; and bald eagle (*Haliaeetus leucocephalus*), Foraging.

Wetland 2 (PEM)

Wetland 2 is a PEM wetland swale that is dominated by Pennsylvania smartweed (*Polygonum pensylvanicum*, FACW) with the presence of a willow tree (*Salix sp.*) in the canopy. Clay-loam soils displayed a low chroma matrix (10YR 2/1) with 20% mottles (10YR 5/8) indicating that the observed soils are hydric. Wetland hydrology indicators observed were water-stained leaves, saturated soils, and geomorphic position. This wetland was determined to be of ordinary resource value because of the small size, associated runoff from the adjacent residential development and bike path, and significant disturbance.

Wetland 3 (POW)

Wetland 3 is a palustrine open water wetland that feeds a stream flowing along a paved pedestrian bike path. Dominant vegetation consists of jewelweed (*Impatiens capensis*, FACW), lurid sedge (*Carex lurida*, OBL), and fox sedge (*Carex vulpinoidia*, FACW), meeting the criteria for hydrophytic vegetation. Soils were a heavily saturated, loose muck composed of mainly organic material. Soils were unable to be obtained to determine matrix and chroma due to depth of water and general makeup of the soil matrix. Soils were considered hydric due to the thick layer of muck observed meeting the criteria of a histosol. Wetland hydrology indicators observed were inundation of ground surface and soil saturation. This wetland was determined to be of intermediate resource value due to disturbance (located along a paved bike path). Although black-crowned night heron foraging habitat mapped is documented in the vicinity this wetland feature's location is not conducive or characteristic of foraging habitat for this species.

Wetland 4 (PFO)

Wetland 4 is a PFO wetland, dominated by red maple (*Acer rubrum*, FAC) in the canopy, pepperbush (*Clethra alnifolia*, FACW) in the shrub layer and skunk cabbage (*Symplocarpus foetidus*, OBL) and cinnamon fern (*Osumunda cinnamomea*, FACW) in the herbaceous layer indicating a hydrophytic vegetation community. Soils were considered hydric and consisted of a thick layer of muck (10 YR 2/1) and met the criteria for a histosol. Wetland hydrology indicators observed included an inundated ground surface and soil saturation. This wetland was determined to be of intermediate resource value due to disturbance (located along a paved bike path). Although black-crowned night heron foraging habitat is documented in the vicinity this wetland feature's location is not conducive or characteristic of foraging habitat for this species.

Wetland 5 (PEM)

Wetland 5 is a PEM wetland located along the shoulder of Allaire Road within Allaire State Park that is dominated by common reed, marsh fern (*Thelypteris palustris, FACW*), and skunk cabbage. Sandy soils displayed a low chroma matrix (10YR 2/2) with no mottles indicating that the observed soils are hydric. Wetland hydrology indicators observed were algal mat or crust, inundation visible on aerial imagery, water-stained leaves, drainage patterns, dry-season water table, geomorphic position, and the FAC-neutral test. This wetland was determined to be of exceptional resource value because of documented black-crowned night heron foraging habitat and surface connection to Brisbane Lake to the north of the Study Area.

Wetland 6 (PFO)

Wetland 6 is a PFO wetland along County Road 524 within Allaire State Park and is dominated by swamp white oak (*Quercus bicolor*, FACW) and American holly (*Ilex opaca*, FAC) in the canopy, and common green briar (*Smilax rotundifolia*, FAC) in the herbaceous layer indicating a hydrophytic vegetation community. Soils were considered hydric and consisted of a thick layer of muck (10 YR 2/1) and met the criteria for a histosol. Wetland hydrology indicators

observed included drainage patterns, dry-season water table, and geomorphic position. This wetland was determined to be of exceptional resource value due to the presence of black-crowned night heron foraging habitat and the overall size of the wetland feature.

Wetland 7 (PEM)

Wetland 7 is a PEM wetland swale associated with the entrance to a golf course. Dominant vegetation consists of soft rush (*Juncus effusus*, OBL), spikerush (*Eleocharis palustris*, OBL), and Japanese stiltgrass (*Microstegium vimineum*, FAC) indicating a hydrophytic vegetation community. Soils were loamy with an organic layer at the top of the soil surface, meeting criteria for a histic epipedon. In addition, soils consisted of a low chroma matrix (10 YR 3/2) with mottles (10 YR 5/8) present indicating a long duration of saturation occurs within the area. Wetland hydrology indicators observed were geomorphic position and soil saturation. Based on the duration of soil saturation, it appears as though the primary hydrology source is groundwater with additional hydrology inputs from precipitation and runoff from the surrounding development. This wetland is assumed to be intermediate resource value because there is no mapped protected species habitat and has a hydrologic connection to a presumable larger wetland complex to the south of the Study Area.

Wetland 8 (PFO)

Wetland 8 is a PFO wetland located in a low-lying area between a pedestrian bike path and County Route 524. Dominant species include sweetgum (*Liquidambar styraciflua*, FAC) and red maple (*Acer rubrum*, FAC) in the canopy, arrowwood viburnum (*Viburnum dentatum*, FAC) and pepperbush in the shrub layer, and an unknown fern species in the understory. Despite the unknown fern species, criteria are met for hydrophytic vegetation due to the dominance of plant species that are classified as FAC or wetter. Soils are a loam with a low chroma matrix (10 YR 2/1 and 10 YR 4/2) and mottles (10 YR 4/6), indicating a long duration of soil saturation with a fluctuating water table within the area. Wetland hydrology indicators observed include soil saturation, moss trim lines and sparsely vegetated areas. This wetland is expected to be of intermediate resource value due to its size and mapped foraging habitat for black-crowned night heron.

Wetland 9 (PEM)

Wetland 9 is a PEM floodplain wetland associated with a perennial watercourse, an unnamed tributary to Mill Run that is located along County Road 524. Dominant vegetation consists of creeping Jenny (*Lysimachia nummularia*, FACW), Japanese stiltgrass, and water knotweed (*Polygonum amphibium*, OBL) indicating a hydrophytic vegetation community. Soils were mucky, meeting criteria for a histosol. In addition, soils were a low chroma matrix (10 YR 2/1 and 2.5Y 4/1) with mottles (2.5Y 2.5/1) indicating a long duration of saturation occurs with a fluctuating water table within the area. Wetland hydrology indicators observed were algal mat or crust, iron deposits, drainage patterns, moss

trim lines, dry-season water table, geomorphic position, and FAC-neutral test. Based on the duration of soil saturation, it appears as though the primary hydrology source is groundwater with additional hydrology inputs from precipitation and runoff from the surrounding development. This wetland is classified as exceptional resource value due to threatened and endangered species habitat for Barred Owl (*Strix varia*), Breeding Sighting; and Black-crowned Night-heron, Foraging) and the size and hydrologic connection to a perennial watercourse.

Wetland 10 (PEM)

Wetland 10 is a PEM wetland that consists of a channel within steep banks and a narrow wetland fringe between the channel and toe of slope. Because of the steep banks, canopy cover encroached on the wetlands, but the trunks of trees and bases of shrubs were not within the wetland boundary. Dominant canopy and shrub stratum species include black cherry (*Prunus serotina*, FACU) and arrowwood viburnum. Dominant herbaceous species include skunk cabbage and Japanese stiltgrass. An unknown grape species was also observed in the woody vine stratum. The vegetation is considered hydrophytic because the dominant herbaceous species only occur where wetland hydrology and hydric soils occur. Soils were sandy with a low chroma matrix (10 YR 2/1 and 3/1) with mottles (10 YR 4/6), indicating the presence of a fluctuating water table in the area. Wetland hydrology indicators observed were soil saturation and a water table at five inches below ground surface. This wetland is assumed to be of intermediate resource value.

Wetland 11 (PEM)

Wetland 11 is a palustrine open water wetland that feeds a stream flowing underneath County Road 524 within Allaire State Park. Dominant vegetation consists of deer tongue grass (*Dichanthelium clandestinum*, FACW), skunk cabbage, and river birch (*Betula nigra*, FACW) along the outer edges, meeting the criteria for hydrophytic vegetation. Soils were a heavily saturated, loose muck composed of mainly organic material. Soils were unable to be obtained to determine matrix and chroma due to depth of water and general makeup of the soil matrix but were considered hydric due to the thick layer of muck observed meeting the criteria as a histosol. Wetland hydrology indicators observed were high water table, iron deposits, water-stained leaves, drainage patterns, geomorphic position, FAC-neutral test. This wetland is of exceptional resource value due to mapped black-crown night heron foraging habitat and specific wetland characteristics that enable this resource to be conducive for foraging.

Wetland 12 (PEM)

Wetland 12 is a PEM wetland that appears to be a stormwater swale or collection basin along County Route 524 and an Allaire State Park entrance. Dominant vegetation includes elderberry (*Sambucus nigra*, FACW) in the shrub stratum, common reed in the herbaceous stratum and greenbrier and an unidentified grape species (*Vitis* sp.) in the woody vine stratum and meets the criteria for hydrophytic vegetation. Soils were sandy with a low chroma matrix (10YR 3/1 and 5/2) and mottles (10 YR 4/6) indicating a fluctuating water table during the growing season. Wetland hydrology

indicators were not observed at the time of field investigations; however, the presence of a low-chroma soil meeting the requirements to be classified as hydric and a hydrophytic vegetation plant community, indicates the area possess wetland hydrology. Additionally, this wetland was assessed as an ordinary resource value wetland because the primary function of this wetland is a stormwater detention basin and appears to be hydrologically isolated from other wetlands and streams in the area.

Wetland 13 (PFO & PSS)

Wetland 13 is a PFO and PSS wetland beginning as a transition area from an upland herbaceous area to a wetland forested area. Dominant vegetation consists of black gum (*Nyssa sylvatica*, FAC), red maple, blueberry (*Vaccinium corymbosum*, FACW), Japanese stilt grass and greenbrier and meets the criteria for hydrophytic vegetation. Soils were an organic loam transitioning to sand around a depth of 8 inches. A histic epipedon was present as well as a low chroma soils (10 YR 2/1 and 4/2) with mottles (5YR 4/4 and 10YR 5/8) indicating a fluctuating water table during the growing season. Wetland hydrology indicators observed were soil saturation and moss trim lines. This wetland was assessed as an exceptional resource value wetland because of the documented observations of barred owl and wood turtle (*Glyptemys insculpta*), both state-listed species. Additionally, this wetland is inside Allaire State Park.

Wetland 14 (PFO)

Wetland 14 is a PFO wetland that is sparsely vegetated in the understory and dominated by species such as, sweet gum, red maple, Japanese stilt grass and moss that meets the criteria for hydrophytic vegetation. Soils transitioned from an organic sand to sandy matrix with heavy saturation and a low chroma matrix (10 YR 2/1). Low chroma soils and a histic epipedon indicate that the soils meet the hydric soil criteria. Wetland hydrology indicators observed include soil saturation, sparsely vegetated surface, and moss trim lines around tree trunks. This wetland was assessed as an exceptional resource value wetland because of the documented observations of barred owl and wood turtle, both state-listed species. Additionally, this wetland is inside Allaire State Park.

Wetland 15 (PFO)

Wetland 15 is a PFO wetland associated with Mingamahone Brook that is dominated by red maple and rice cut grass (*Leersia oryzoides*, OBL) and meets the criteria for hydrophytic vegetation. Soils were an organic sand that transitions to sand with a histic epipedon, sulfide odor, and low chroma matrix (10 YR 2/2); meeting the hydric soils criteria. Wetland hydrology indicators observed were ground surface inundation, soil saturation, high water table, sulfide odor and geomorphic location. This wetland is assumed to be an exceptional resource value wetland because of the documented observations of barred owl and wood turtle, both state-listed species. Additionally, this wetland is inside Allaire State Park.

Wetland 16 (PEM)

Wetland 16 is a PEM wetland that appears to be a depressional wetland along County Route 547 within the floodplain of the Manasquan River. The area was most likely constructed to collect and convey rainfall events. Dominant vegetation includes common reed and Japanese stilt grass and meets the criteria for hydrophytic vegetation. Soils were mucky with a low chroma matrix (2.5Y 2.5/1) and qualifies as a histosol. Wetland hydrology indicators observed include water marks, water-stained leaves, drainage patterns, geomorphic position, and FAC-Neutral test. Additionally, this wetland was assessed as an intermediate resource value wetland because the primary function of this wetland is a stormwater detention basin but there is barred owl breeding activity and a documented Cooper's hawk nest directly adjacent.

Wetland 17 (PSS)

Wetland 17 is a PSS wetland acting within the floodplain of a lower perennial watercourse, Bear Swamp Brook, and is located within Bear Swamp Natural Area. Dominant vegetation consists of red osier dogwood (*Cornus alba*, FACW), sweetgum, and boxelder (*Acer negundo*, FAC) and meets the criteria for hydrophytic vegetation. Soils were a mixture of sandy, disturbed fill material with low chroma soils (10 YR 4/3) and a thin muck surface indicating periods of standing water during the growing season. Wetland hydrology indicators observed were water marks, water-stained leaves, drainage patterns, geomorphic position, and FAC-neutral test. This wetland assumed to be an exceptional resource value wetland because of the mapped observations of Pine Barrens tree frog, vernal pool breeding locations and its location within the Bear Swamp Natural Area.

Wetland 18 (PSS)

Wetland 18 is a PSS wetland that acts as a floodplain for North Branch Squankum Brook along County Route 547. Dominant vegetation includes red osier dogwood, box elder, and umbrella magnolia (*Magnolia tripetala*¸ FACU) in the shrub stratum, and Japanese stiltgrass in the herbaceous stratum and meets the criteria for hydrophytic vegetation. Soils were mucky with a low chroma matrix (10YR 2/1) and qualifies as a histosol. Wetland hydrology indicators observed include water-stained leaves, drainage patterns, dry season water table, geomorphic position, and FAC-neutral test. This wetland was assessed as an exceptional resource value wetland because of the documented observations of a Pine Barrens tree frog vernal pool breeding location.

Wetland 19 (PFO)

Wetland 19 is a PFO wetland associated with Squankum Brook located along County Road 547 and is dominated by sweetgum, red maple, and sweet pepperbush and meets the criteria for hydrophytic vegetation. Soils were an organic sand mixture that transitions to sand with a low chroma matrix (10 YR 2/1) and mottles (2.5Y 5/4); meeting the hydric soils criteria. Wetland hydrology indicators observed were ground surface inundation, soil saturation, and high-water

table. This wetland was assumed to be an intermediate resource value wetland because of its large size and lack of documented threatened or endangered species habitat.

Wetland 20 (PFO)

Wetland 20 is a PFO depressional wetland along County Route 547 that is dominated by sweetgum in the tree stratum and waterhorehound (*Lycopus sherardii,* OBL), common reed, and marsh fern in the herbaceous stratum, and meets the criteria for hydrophytic vegetation. Soils were an organic muck with a low chroma gleyed matrix (N 2.5) meeting the hydric soils criteria. Wetland hydrology indicators observed were drainage patterns, dry-season water table, geomorphic position, and FAC-neutral test. Similar to Wetland 19, this wetland was assumed to be an intermediate resource value wetland because of its large size and lack of documented threatened or endangered species habitat.

Wetland 21 (PFO)

Wetland 21 is a PFO wetland associated with and unnamed tributary of Muddy Fork Brook that is dominated by sweetgum, red maple, and pepperbush and meets the criteria for hydrophytic vegetation. Soils were an organic sand mix that transitions to sand with a low chroma matrix (2.5Y 2.5/1); meeting the hydric soils criteria. Wetland hydrology indicators observed were ground surface inundation, soil saturation, and high-water table. This wetland was assumed to be an exceptional resource value wetland because there are documented observations of Pine Barrens tree frog and black-crowned night heron.

Wetland 22 (PFO)

Wetland 22 is a PFO wetland associated with an unnamed tributary of Muddy Fork Run that is dominated by sweetgum and blackgum in the tree stratum; highbush blueberry in the shrub layer, and common greenbrier in the herbaceous layer, and meets the criteria for hydrophytic vegetation. Soils were an organic sand mix that transition to sand with a low chroma matrix (2.5Y 2.5/1); meeting the hydric soils criteria. Wetland hydrology indicators observed were water-stained leaves, drainage patterns, geomorphic position, and FAC-neutral test. This wetland was assumed to be an exceptional resource value wetland because of the documented observations of Pine Barrens tree frog.

Wetland 23 (PFO)

Wetland 23 is a PFO wetland associated with Tarkiln Brook, located along County Road 547, and is dominated by red maple in the tree stratum, willow, sweetgum, and umbrella magnolia in the shrub layer, and sensitive fern (*Onoclea sensibilis*, FACW) in the herbaceous layer and meets the criteria for hydrophytic vegetation. Soils were an organic sand mix that transitions to sand with a low chroma matrix (2.5Y 3/1 and 10YR 2/1); meeting the hydric soils criteria. Wetland hydrology indicators observed were water-stained leaves, drainage patterns, geomorphic position, and FAC-

neutral test. Similar to Wetland 22, this wetland was assumed to be an exceptional resource value wetland because of because of the documented observations of Pine Barrens tree frog.

Wetland 24 (PEM)

Wetland 24 is a large PEM wetland associated with Haystack Brook along Route 547 that is bisected by a Jersey Central Power & Light Company access road through the powerline right-of-way to the south of the Larrabee Study Area. The east side of the wetland is dominated by red maple and pepperbush in the tree and shrub stratum. Dominant vegetation in the herbaceous stratum includes narrowleaf cattail (*Typha angustifolia*, OBL), an unidentified sedge species, arrow arum (*Peltandra virginica*, OBL), and intermediate fern (*Dryopteris intermedia*, FACU). Soils were a thick layer of muck qualifying as a histosol with a hydrogen sulfide odor. Wetland hydrology indicators observed include ground surface inundation, saturated soil, and a high-water table. The west side of the wetland is dominated by pepperbush and common reed. This wetland was assumed to be an intermediate resource value.

Wetland 25 (PFO)

Wetland 25 is a PFO wetland associated with Dicks Brook that is dominated by red maple, swamp white oak, and black gum in the tree stratum, and pepperbush in the shrub stratum and meets the criteria for hydrophytic vegetation. Soils were an organic sand mix that transitions to sand with a low chroma matrix (2.5Y 3/2, 10YR 2/2, and 10YR 3/1); meeting the hydric soils criteria. Wetland hydrology indicators observed were geomorphic position and FAC-neutral test. Similar to Wetland 22, this wetland was assumed to be an exceptional resource value wetland because of of the documented observations of Pine Barrens tree frog.

4.1.2 Surface Waters

EDR identified 20 surface waters that included streams, rivers, and other surface drainage features within the Study Area. Descriptions of each watercourse are presented below.

Watercourse 1 – Intermittent (R4)

The watercourse, near the headwaters of Judas Creek, flows between a wetland and the pedestrian bike path. It had a gentle slope, an approximate bank width of 6 feet and a stream width of 3 feet. At the time of delineation, the watercourse had an approximate water depth of 2 inches, and was characterized by a gentle gradient, overhanging vegetation and channelization. Substrate consisted of silt, clay, sand, and gravel.

Watercourse 2 – Upper Perennial (R3)

The watercourse, an unnamed tributary to the Manasquan River, drains a large wetland pond and flows along a pedestrian bike path. It has a gentle slope, an approximate bank width of 4 feet and a stream width of 3 feet. At the time of field studies, the watercourse had an approximate water depth of 6 inches, and was characterized by a gentle gradient, overhanging vegetation, course woody debris and channelization. Substrate consisted of silt/clay and sand.

Watercourse 3 – Intermittent (R4)

The watercourse, an unnamed tributary to the Manasquan River, flows from northeast to southeast as a drainage ditch along County Road 524 and flows through a culvert under W 18th Avenue. It had a gentle slope, an approximate bank width of 4 feet and a stream width of 3 feet. At the time of field studies, the watercourse had an approximate water depth of 5 inches and was characterized by leaf litter and channelization. Substrate consisted of silt/clay and sand.

Watercourse 4 – Lower Perennial (R2)

The watercourse, an unnamed tributary to the Manasquan River, flows through a culvert adjacent to W 18th Avenue, and flows underneath County Road 524 eventually flowing along a pedestrian bike path, crossing under the bike path at the edge of a parking lot and continues to flow under County Route 524. It had a gentle slope, an approximate bank width of 6 feet and a stream width of 3 feet. At the time of field studies, the watercourse had an approximate water depth of 2 inches and was characterized by overhanging vegetation, coarse woody debris, channelization, and channel armoring. Substrate consisted of silt/clay, gravel, and cobble.

Watercourse 5 – Lower Perennial (R2)

The watercourse, known as Mill Run, is set in a deep, forested gully that runs perpendicular and underneath County Road 524 and continues to flow underneath a pedestrian bike path. It has a moderate slope, an approximate bank width of 30 feet and a stream width of 10 feet. At the time of field studies, the watercourse had an approximate water depth of 24 inches and was characterized by overhanging vegetation, coarse woody debris, and channelization. Substrate consisted of sand and gravel.

Watercourse 6 – Unknown Perennial (R5)

The watercourse, an unnamed tributary to the Manasquan River, flows under County Route 524 and connects larger wetland complexes north and south of the roadway. It has a gentle slope, an approximate bank width of 3 feet, and a stream width of 1 foot. At the time of field studies, the watercourse had an approximate water depth of 0.5 inch and was characterized by overhanging vegetation and coarse woody debris. Substrate consisted of silt/clay, sand, and gravel.

Watercourse 7 – Lower Perennial (R2)

The watercourse, an unnamed tributary to the Manasquan River, is a heavily channelized stream that flows under I-195. It has a gentle slope, an approximate bank width of 13 feet and a stream width of 10 feet. At the time of field studies, the watercourse had an approximate water depth of 1 foot or greater and was characterized by overhanging vegetation, deep pools, coarse woody debris, channelization and channel armoring. Substrate consisted of silt/clay.

Watercourse 8 – Ephemeral (R6)

The watercourse is a spring seep at the base of a slope from I-195 that turns into an ephemeral stream. It has a gentle slope, an approximate bank width of 6 feet and a stream width of 3 feet. At the time of field studies, the watercourse had an approximate water depth of 2 inches and was characterized by overhanging vegetation and channelization. Substrate consisted of silt/clay and sand.

Watercourse 9 – Lower Perennial (R2)

The watercourse, known as Mingamahone Brook, flows under I-195, was heavily channelized and then became sinuous south of the highway. The entire section of the stream within the Study Area has very deep-cut banks. It has a gentle slope, an approximate bank width of 30 feet and a stream width of 25 feet. At the time of field studies, the watercourse had an approximate depth of 1 foot or greater and was characterized by undercut banks, overhanging vegetation, deep pools, coarse woody debris, channelization, and channel armoring (associated with the I-195 crossing). Substrate consisted of silt/clay, sand, and cobbles.

Watercourse 10 – Ephemeral (R6)

The watercourse is an unnamed tributary that flows through a wetland before its confluence with Mingmahone Brook. It has a gentle slope, an approximate bank width of 1 foot and stream width of 1 foot. At the time of field studies, the watercourse had an approximate depth of 0.25 inch and was characterized by overhanging vegetation and shallow banks. Substrate consisted of silt/clay and sand.

Watercourse 11 – Lower Perennial (R2)

The watercourse, known as the Manasquan River, flows through the Study Area from west to east and has a gentle slope, an approximate bank width of 37 feet and a river width of approximately 30 feet. At the time of field studies, the watercourse had an approximate depth of 18 inches or greater and was characterized by undercut banks, overhanging vegetation and deep pools. Substrate consisted of silt/clay, sand and cobble.

Watercourse 12 – Lower Perennial (R2)

The watercourse, known as Bear Swamp Brook, flows between wetland 17 and underneath County Road 524. It has a gentle slope, an approximate bank width of 8 feet, and a stream width of 5 feet. At the time of field studies, the watercourse had an approximate depth of 12 inches and was characterized by undercut banks, overhanging vegetation, and channelization. Substrate consisted of silt/clay and sand.

Watercourse 13 – Upper Perennial (R3)

The watercourse, known as Finch Brook/North Branch Squankum Brook, flows through palustrine emergent wetland 18. It has a gentle slope, an approximate bank width of 15 feet and a stream width of 8 feet. At the time of fields studies, the watercourse had an approximate depth of 6 inches and was characterized by undercut banks, overhanging vegetation and deep pools. Substrate consisted of silt/clay, sand and gravel.

Watercourse 14 – Lower Perennial (R2)

The watercourse, known as Squankum Brook, and flows through a forested wetland, Wetland 19, and continues through a series of culverts to the southeastern side of County Route 547. It has a gentle slope, an approximate bank width of 15 feet and a stream width of 9 feet. At the time of field studies, the watercourse had an approximate depth of 24 inches and was characterized by undercut banks and overhanging vegetation. Substrate consisted of silt/clay and sand.

Watercourse 15 – Lower Perennial (R2)

The watercourse is an unnamed tributary to Muddy Fork Brook that flows through a forested wetland, Wetland 21, and flows through a culvert under County Road 547. This tributary eventually confluences with Muddy Fork Brook to the southeast of the Study Area. It has a gentle slope, an approximate bank width of 15 feet and a stream width of 8 feet. At the time of field studies, the watercourse had an approximate depth of 12 inches and was characterized by undercut banks, overhanging vegetation, and deep pools. Substrate consisted of sand.

Watercourse 16 – Lower Perennial (R2)

The watercourse, Woodcock Brook, flows through a forested wetland, Wetland 22, and flows through a culvert under County Road 547. This tributary eventually confluences with Muddy Ford Brook to the southeast outside of the Study Area. It has a gentle slope, an approximate bank width of 5 feet, and a stream width of 3 feet. At the time of field studies, the watercourse had an approximate depth of 4 inches and was characterized by undercut banks and overhanging vegetation. Substrate consisted of silt/clay and sand.

Watercourse 17 – Lower Perennial (R2)

This watercourse, known as Tarkiln Brook, flows through a forested wetland, Wetland 19, and continues through a series of culverts to the southeast side of County Route 547. It has a gentle slope, an approximate bank width of 15 feet and a stream width of 10 feet. At the time of field studies, the watercourse had an approximate depth of 10 inches and was characterized by undercut banks and overhanging vegetation. Substrate consisted of silt/clay and sand.

Watercourse 18 – Intermittent (R4)

This watercourse is an unnamed tributary that provides the source of hydrology for a forested wetland, Wetland 24, and flows from Haystack Brook further northwest outside of the Study Area. It has a gentle slope, an approximate bank width of 5 feet and a stream width of 3 feet. At the time of field studies, the watercourse had an approximate depth of 3 inches and was characterized by undercut banks and overhanging vegetation. Substrate consisted of silt/clay and sand.

Watercourse 19 – Upper Perennial (R3)

The watercourse, known as Haystack Brook, flows through forested wetland, Wetland 24. It has a gentle slope, an approximate bank width of 40 feet and a stream width of 20 feet. At the time of fields studies, the watercourse had an approximate depth of 24+ inches and was characterized by undercut banks, overhanging vegetation and deep pools. Substrate consisted of silt/clay, sand, and gravel.

Watercourse 20 – Upper Perennial (R3)

The watercourse, known as Dicks Brook, flows through forested wetland, Wetland 25. It has a gentle slope, an approximate bank width of 40 feet and a stream width of 28 feet. At the time of fields studies, the watercourse had an approximate depth of 24+ inches and was characterized by undercut banks, overhanging vegetation and deep pools. Substrate consisted of silt/clay, sand, and gravel.

5.0 CONCLUSIONS

EDR conducted a wetland and watercourse delineation in June and December 2020 for the Atlantic Shores proposed onshore interconnection cable route to the Larrabee POI, Monmouth Landfall site and potential substation locations. A total of approximately 7.8 acres across 25 individual non tidal, freshwater wetlands and 20 watercourses totaling 3,035 linear feet were identified and delineated within the Study Area.

All wetlands and watercourses are under the jurisdiction of the NJDEP under the New Jersey Freshwater Wetlands Protection Act. New Jersey has assumed jurisdiction of wetlands and watercourses that would typically be under the jurisdiction of the USACE greater than 1,000 feet from the head of tide. Even though New Jersey has assumed jurisdiction over all of the wetlands and watercourses within the Study Area, each wetland and watercourse has a presumed federal jurisdictional determination.

This wetland and waterway delineation and presumed jurisdictional determination should not be considered final until a Letter of Interpretation (LOI) is issued by the NJDEP concurring with the location, extent and jurisdiction of the wetlands and watercourses identified. NJDEP will also need to confirm the resource value classification presented in Table 3.

6.0 REFERENCES

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APPENDIX A

Figures

Figure 1

Project Location Map

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore

Borough of Sea Girt,
Township of Wall, and
Township of Howell
Monmouth County, New Jersey

Figure 1
Project Location Map

Larrabee Interconnection Route

Study Area

Larrabee POI

Monmouth Landfall Site

0 2,500 5,000 10,000 Feet

Notes: 1. Basemap: ESRI ArcGIS Online "USA Topo Maps" map service. **2.** This map was generated in ArcMap on March 8, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

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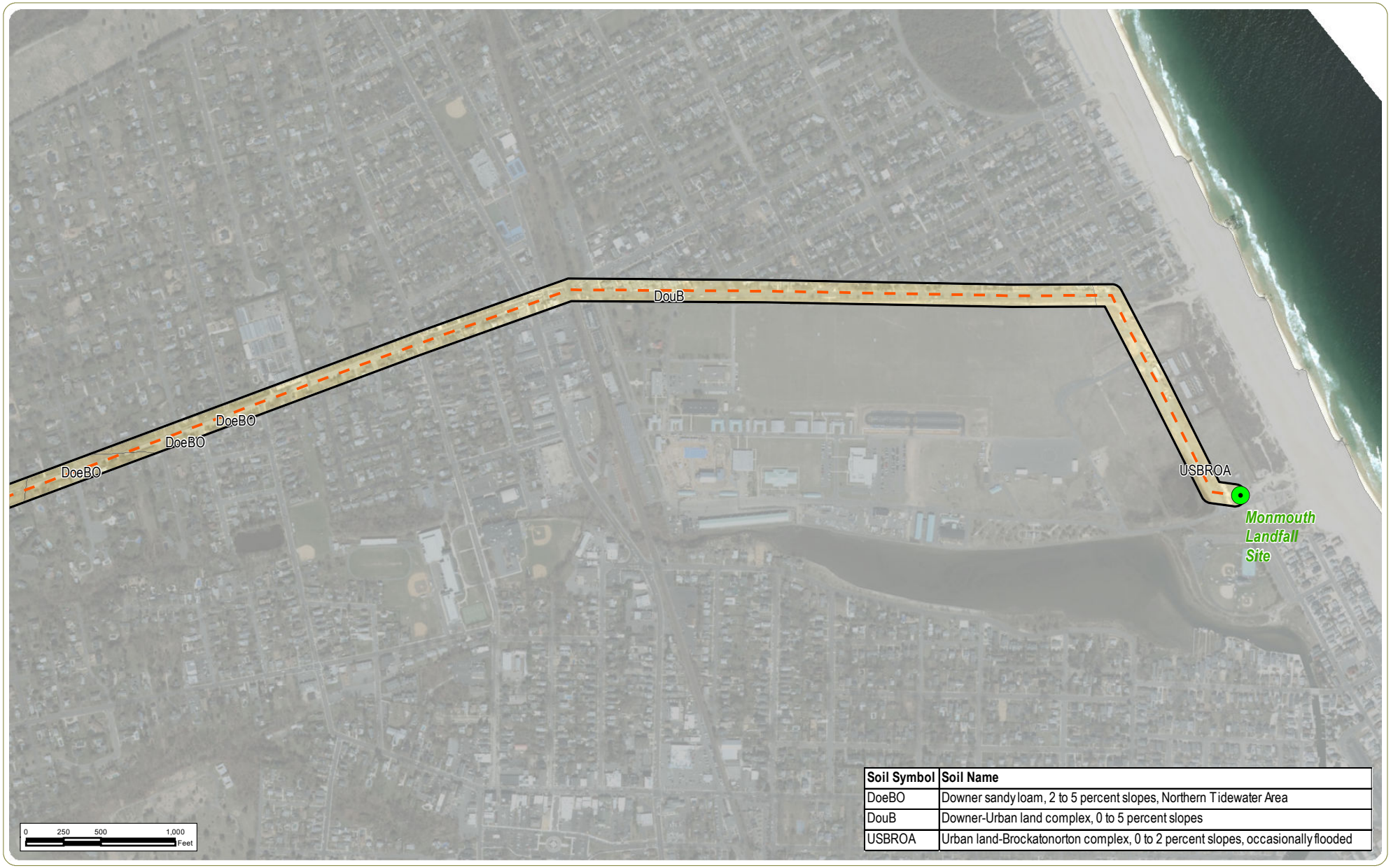
Figure 2

SSURGO Soils Map



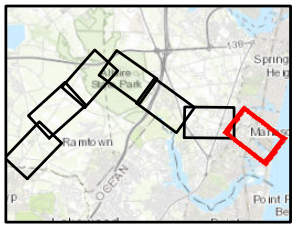
Soil Symbol	Soil Name
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area
DouB	Downer-Urban land complex, 0 to 5 percent slopes
USBROA	Urban land-Brockatonorton complex, 0 to 2 percent slopes, occasionally flooded

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

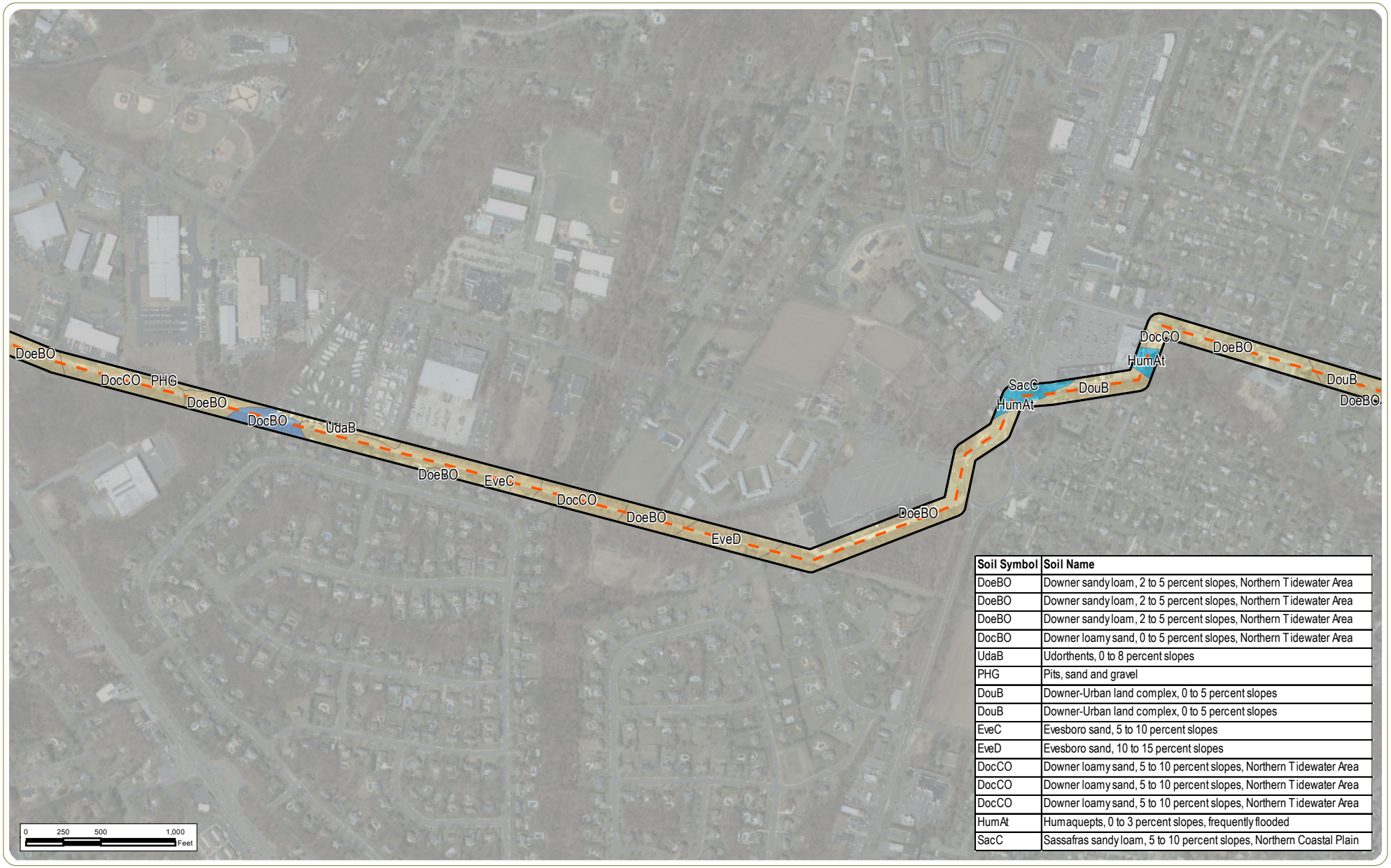
Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 2 - SSURGO Soils
Sheet 1 of 7

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on March 8, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area
NRCS (SSURGO) Soils
Not Hydric



Soil Symbol	Soil Name
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area
DocBO	Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area
UdaB	Udorthents, 0 to 8 percent slopes
PHG	Pits, sand and gravel
DouB	Downer-Urban land complex, 0 to 5 percent slopes
DouB	Downer-Urban land complex, 0 to 5 percent slopes
EveC	Evesboro sand, 5 to 10 percent slopes
EveD	Evesboro sand, 10 to 15 percent slopes
DocCO	Downer loamy sand, 5 to 10 percent slopes, Northern Tidewater Area
DocCO	Downer loamy sand, 5 to 10 percent slopes, Northern Tidewater Area
DocCO	Downer loamy sand, 5 to 10 percent slopes, Northern Tidewater Area
HumAt	Humaquepts, 0 to 3 percent slopes, frequently flooded
SacC	Sassafras sandy loam, 5 to 10 percent slopes, Northern Coastal Plain

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 2 - SSURGO Soils
Sheet 2 of 7

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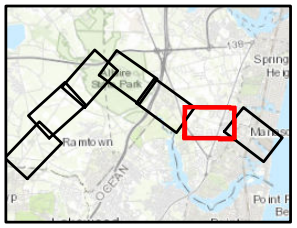
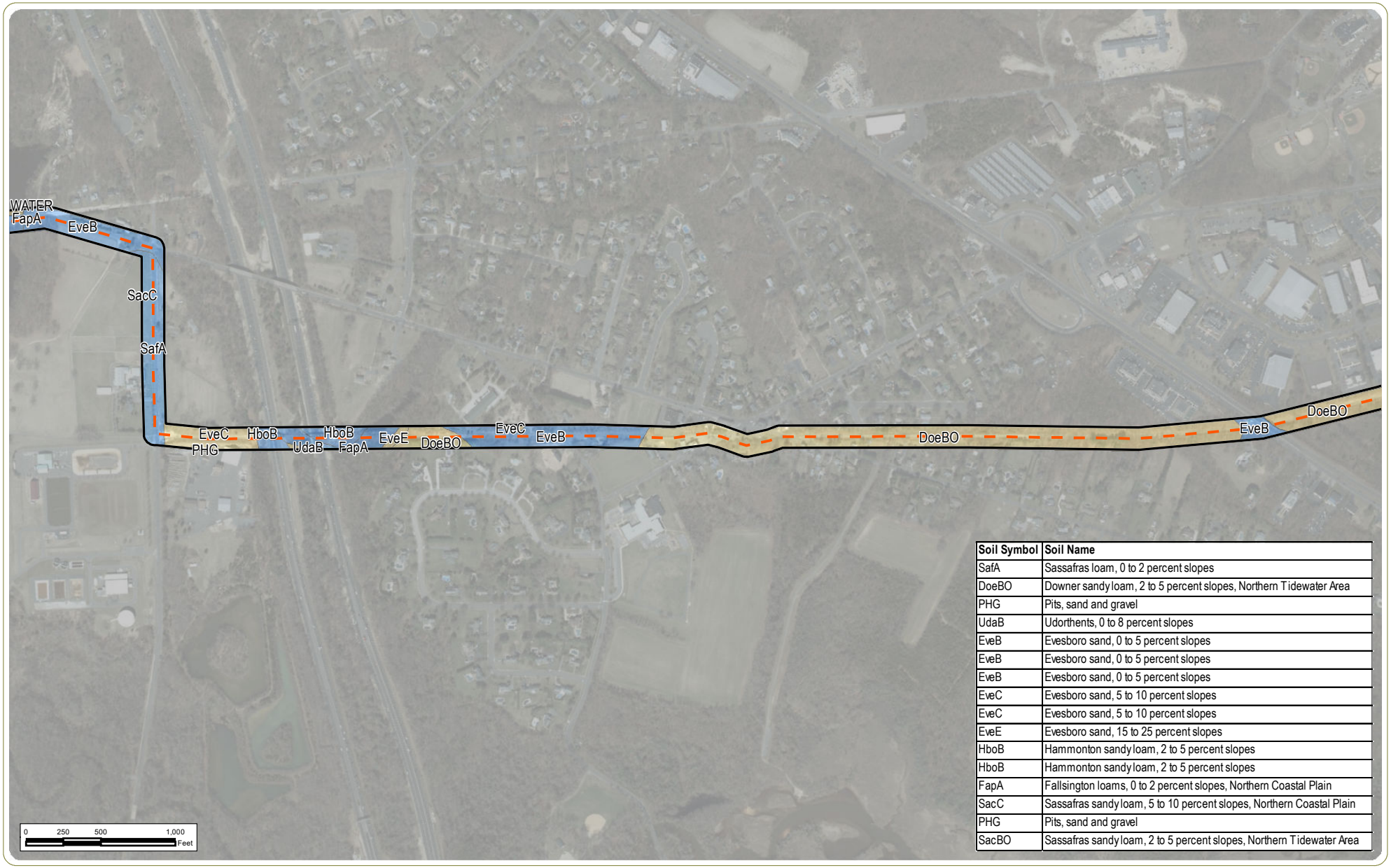


Onshore Route
Study Area
NRCS (SSURGO) Soils
Hydric
Not Hydric
Partially Hydric



Soil Symbol	Soil Name
SafA	Sassafras loam, 0 to 2 percent slopes
DoeBO	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area
PHG	Pits, sand and gravel
UdaB	Udorthents, 0 to 8 percent slopes
EveB	Evesboro sand, 0 to 5 percent slopes
EveB	Evesboro sand, 0 to 5 percent slopes
EveB	Evesboro sand, 0 to 5 percent slopes
EveC	Evesboro sand, 5 to 10 percent slopes
EveC	Evesboro sand, 5 to 10 percent slopes
EveE	Evesboro sand, 15 to 25 percent slopes
HboB	Hammonton sandy loam, 2 to 5 percent slopes
HboB	Hammonton sandy loam, 2 to 5 percent slopes
FapA	Fallsington loams, 0 to 2 percent slopes, Northern Coastal Plain
SacC	Sassafras sandy loam, 5 to 10 percent slopes, Northern Coastal Plain
PHG	Pits, sand and gravel
SacBO	Sassafras sandy loam, 2 to 5 percent slopes, Northern Tidewater Area

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 2 - SSURGO Soils
Sheet 3 of 7

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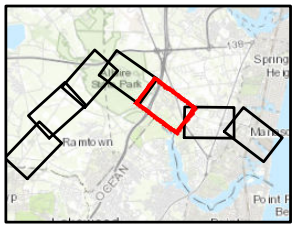
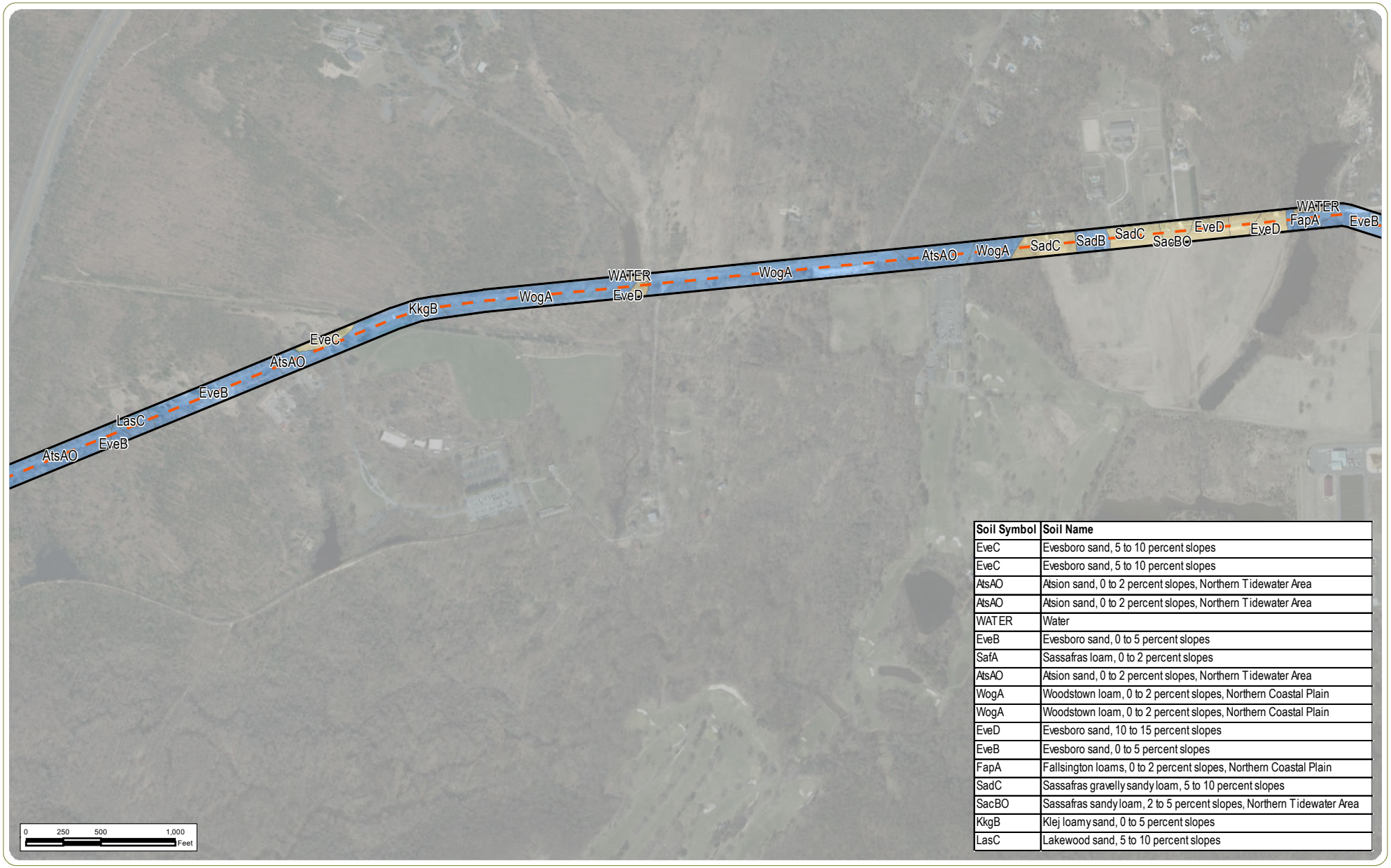


Onshore Route
Study Area
NRCS (SSURGO) Soils
Not Hydric
Partially Hydric



Soil Symbol	Soil Name
EveC	Evesboro sand, 5 to 10 percent slopes
EveC	Evesboro sand, 5 to 10 percent slopes
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
WATER	Water
EveB	Evesboro sand, 0 to 5 percent slopes
SafA	Sassafras loam, 0 to 2 percent slopes
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
WogA	Woodstown loam, 0 to 2 percent slopes, Northern Coastal Plain
WogA	Woodstown loam, 0 to 2 percent slopes, Northern Coastal Plain
EveD	Evesboro sand, 10 to 15 percent slopes
EveB	Evesboro sand, 0 to 5 percent slopes
FapA	Fallsington loams, 0 to 2 percent slopes, Northern Coastal Plain
SadC	Sassafras gravelly sandy loam, 5 to 10 percent slopes
SacBO	Sassafras sandy loam, 2 to 5 percent slopes, Northern Tidewater Area
KkgB	Klej loamy sand, 0 to 5 percent slopes
LasC	Lakewood sand, 5 to 10 percent slopes

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 2 - SSURGO Soils
Sheet 4 of 7

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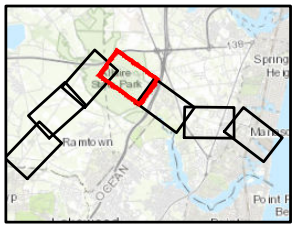

Onshore Route
Study Area
NRCS (SSURGO) Soils
Not Hydric
Partially Hydric

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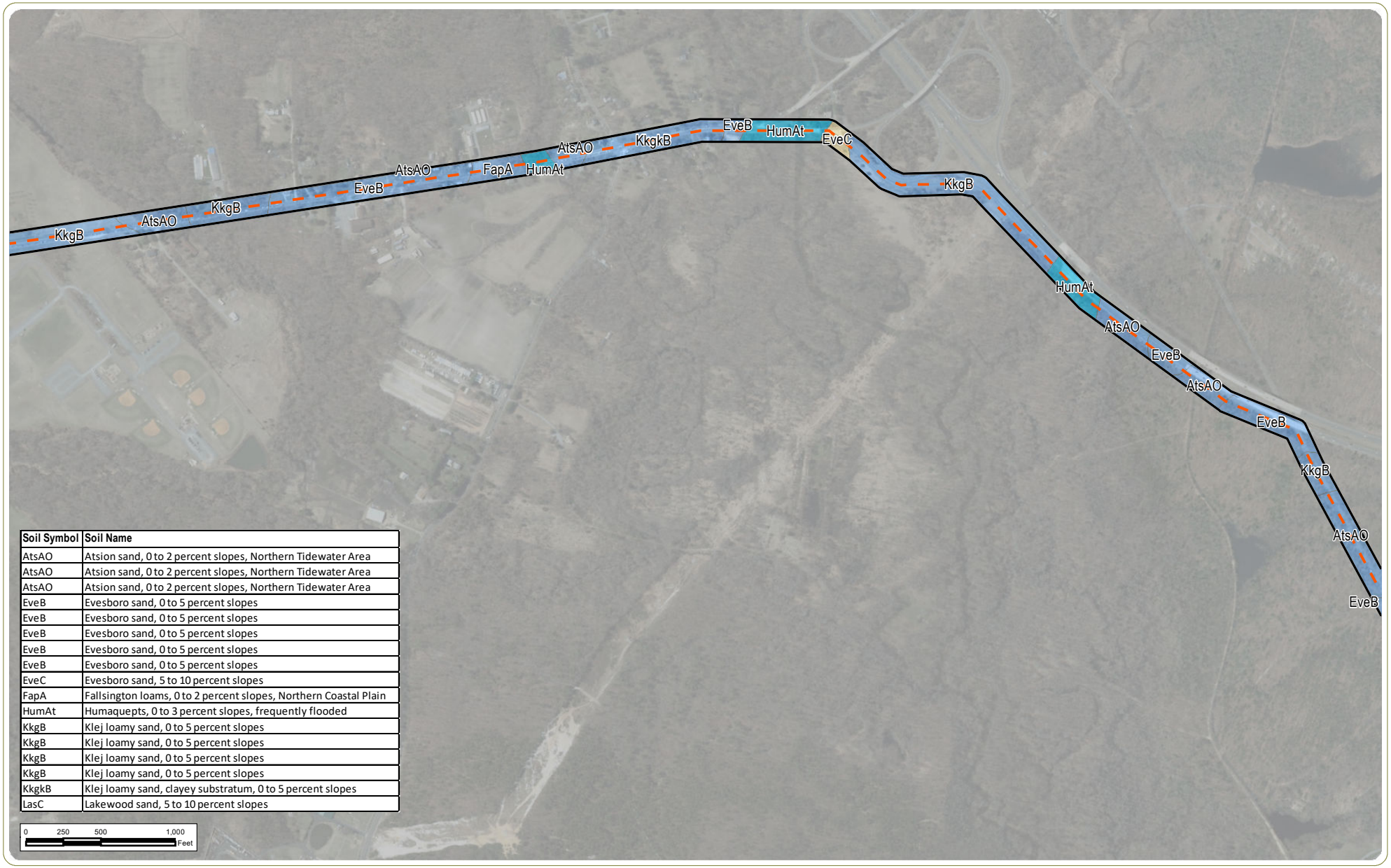

Soil Symbol	Soil Name
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
EveB	Evesboro sand, 0 to 5 percent slopes
EveB	Evesboro sand, 0 to 5 percent slopes
EveB	Evesboro sand, 0 to 5 percent slopes
EveB	Evesboro sand, 0 to 5 percent slopes
EveB	Evesboro sand, 0 to 5 percent slopes
EveC	Evesboro sand, 5 to 10 percent slopes
FapA	Fallsington loams, 0 to 2 percent slopes, Northern Coastal Plain
HumAt	Humaquepts, 0 to 3 percent slopes, frequently flooded
KkgB	Klej loamy sand, 0 to 5 percent slopes
KkgB	Klej loamy sand, 0 to 5 percent slopes
KkgB	Klej loamy sand, 0 to 5 percent slopes
KkgB	Klej loamy sand, 0 to 5 percent slopes
KkgkB	Klej loamy sand, clayey substratum, 0 to 5 percent slopes
LasC	Lakewood sand, 5 to 10 percent slopes

0 250 500 1,000 Feet

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 2 - SSURGO Soils
Sheet 5 of 7

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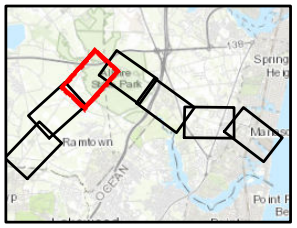
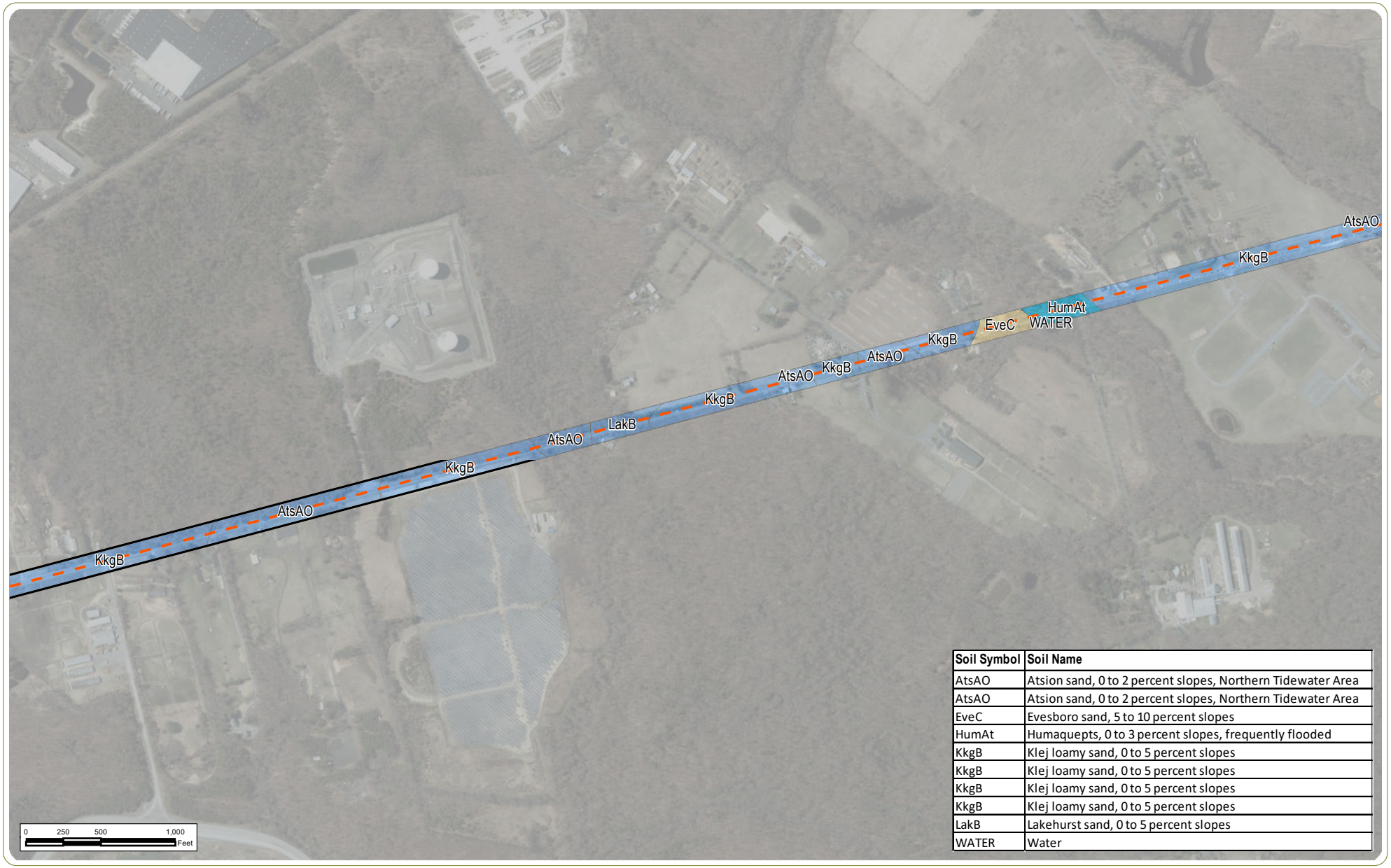


Onshore Route
Study Area
NRCS (SSURGO) Soils
Hydric
Not Hydric
Partially Hydric



Soil Symbol	Soil Name
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
EveC	Evesboro sand, 5 to 10 percent slopes
HumAt	Humaquepts, 0 to 3 percent slopes, frequently flooded
KkgB	Klej loamy sand, 0 to 5 percent slopes
KkgB	Klej loamy sand, 0 to 5 percent slopes
KkgB	Klej loamy sand, 0 to 5 percent slopes
KkgB	Klej loamy sand, 0 to 5 percent slopes
LakB	Lakehurst sand, 0 to 5 percent slopes
WATER	Water

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 2 - SSURGO Soils
Sheet 6 of 7

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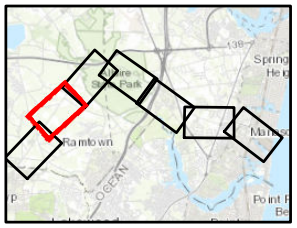
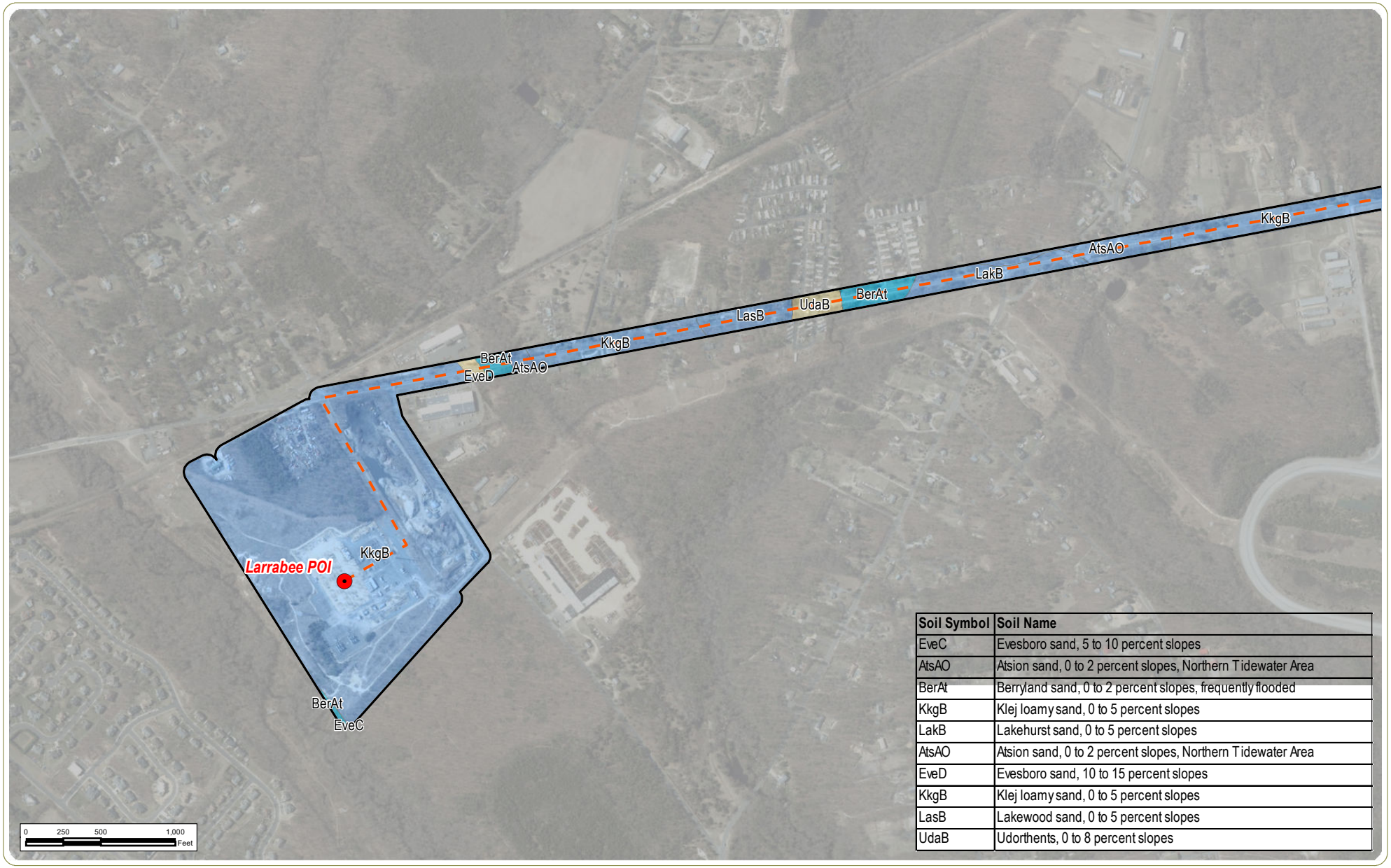


Onshore Route
Study Area
NRCS (SSURGO) Soils
Hydric
Not Hydric
Partially Hydric



Soil Symbol	Soil Name
EveC	Evesboro sand, 5 to 10 percent slopes
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
BerAt	Berryland sand, 0 to 2 percent slopes, frequently flooded
KkgB	Klej loamy sand, 0 to 5 percent slopes
LakB	Lakehurst sand, 0 to 5 percent slopes
AtsAO	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area
EveD	Evesboro sand, 10 to 15 percent slopes
KkgB	Klej loamy sand, 0 to 5 percent slopes
LasB	Lakewood sand, 0 to 5 percent slopes
UdaB	Udorthents, 0 to 8 percent slopes

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 2 - SSURGO Soils
Sheet 7 of 7

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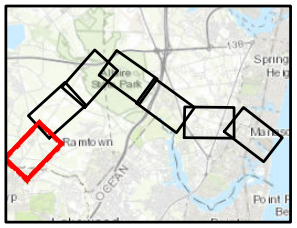
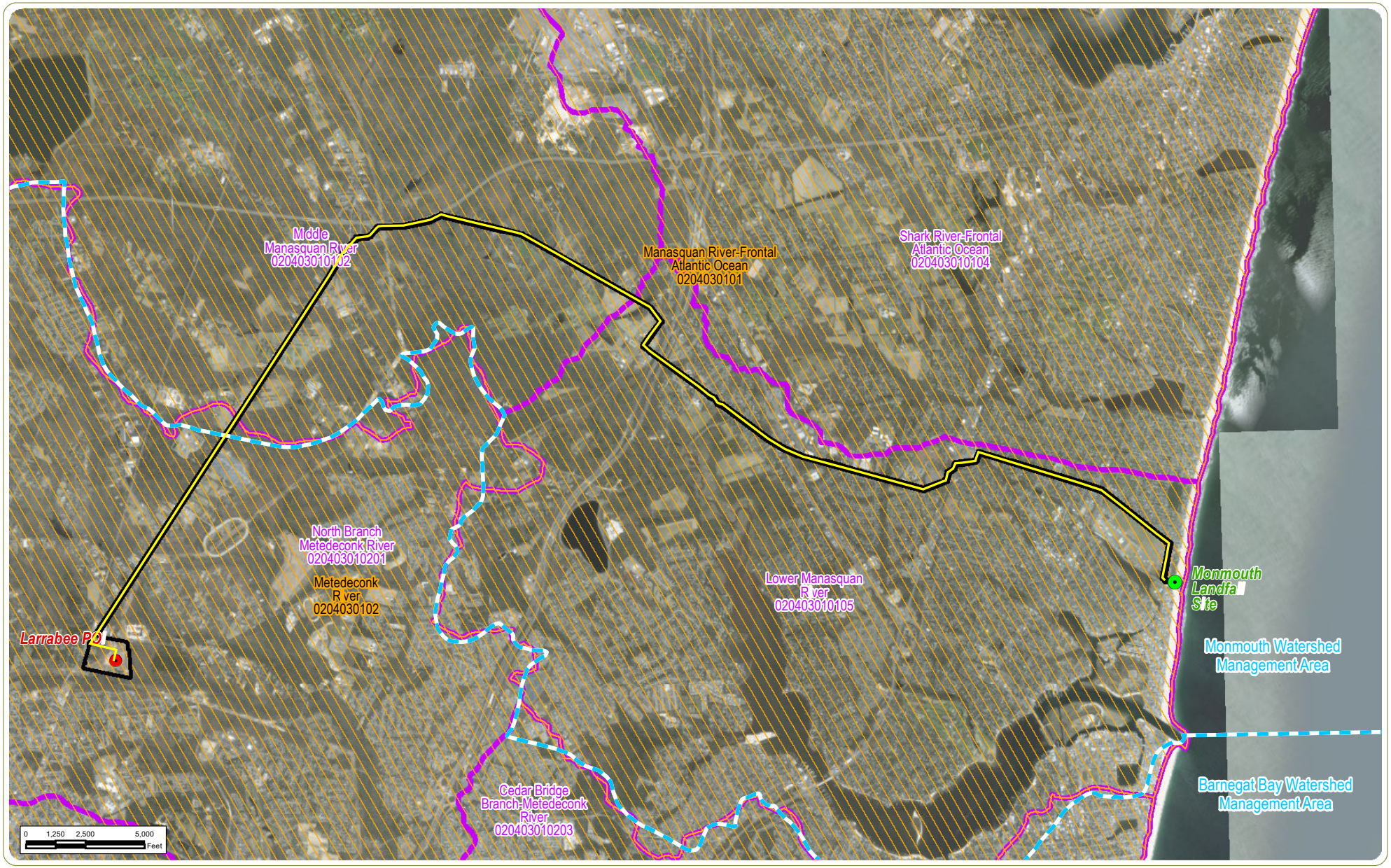


Onshore Route
Study Area
NRCS (SSURGO) Soils
Hydric
Not Hydric
Partially Hydric

Figure 3

Watershed Management Areas and Hydrologic Units

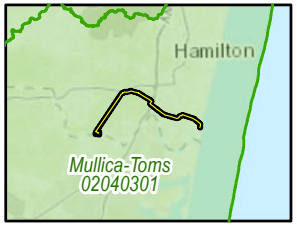


Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 3 - Watershed Management Areas and Hydrologic Units

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on March 8, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



- Onshore Route
- Study Area
- Watershed Management Area
- 8- Digit Watershed
- 10-Digit Watershed
- 12-Digit Watershed

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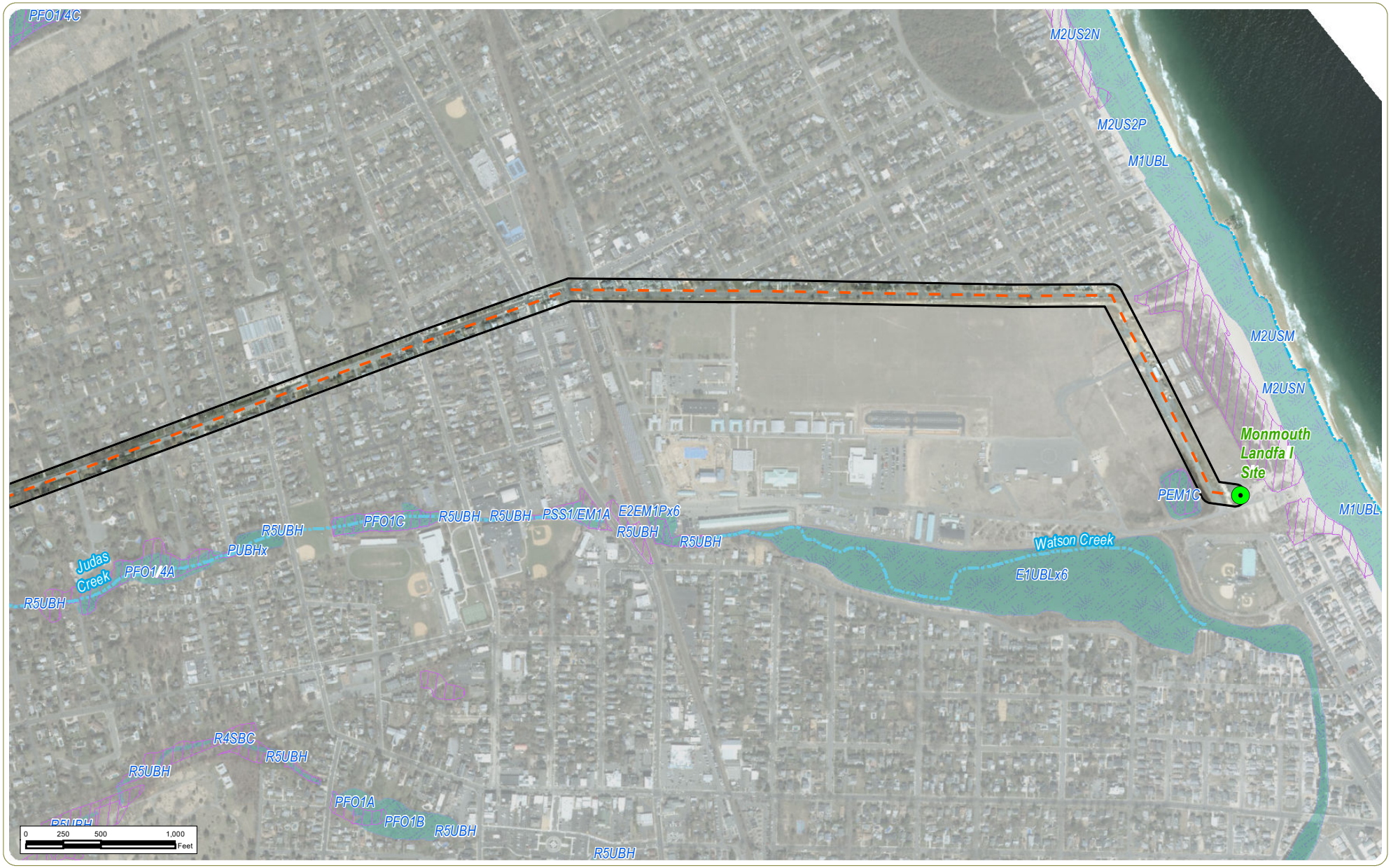
Figure 4

NJDEP/NWI Mapped Wetlands and Streams



Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 4 - NJDEP/NWI Mapped Wetlands and Streams
Sheet 1 of 7

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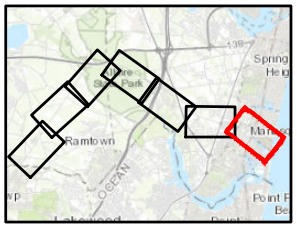

- Onshore Route
- Study Area
- Stream
- NJDEP Wetland
- NWI Wetland

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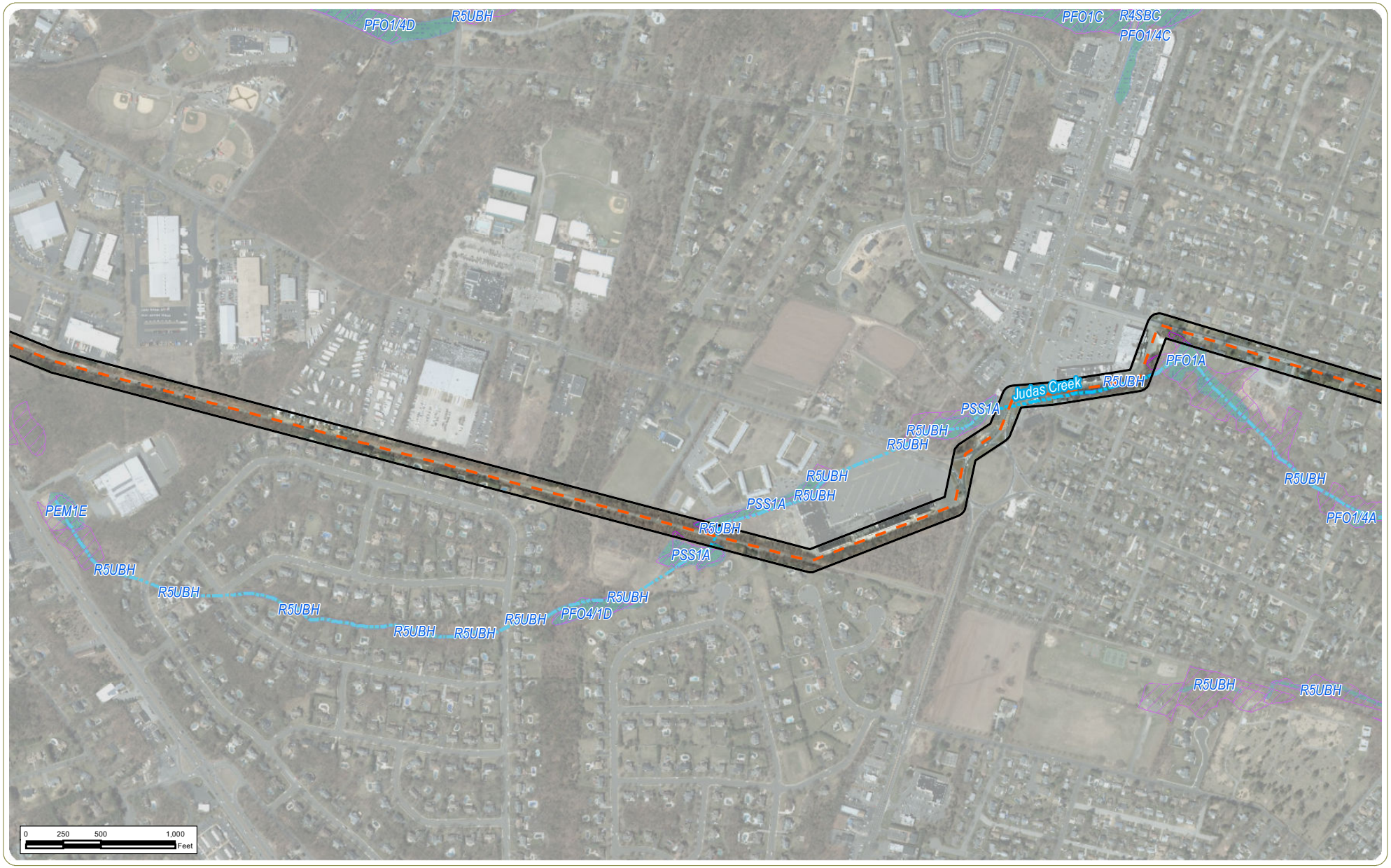

Wetland and Stream Delineation Report
Insert Project Title
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 4 - NJDEP/NWI Mapped Wetlands and Streams
Sheet 2 of 7

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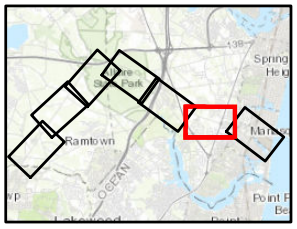

- Onshore Route
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- Stream
- NJDEP Wetland
- NWI Wetland

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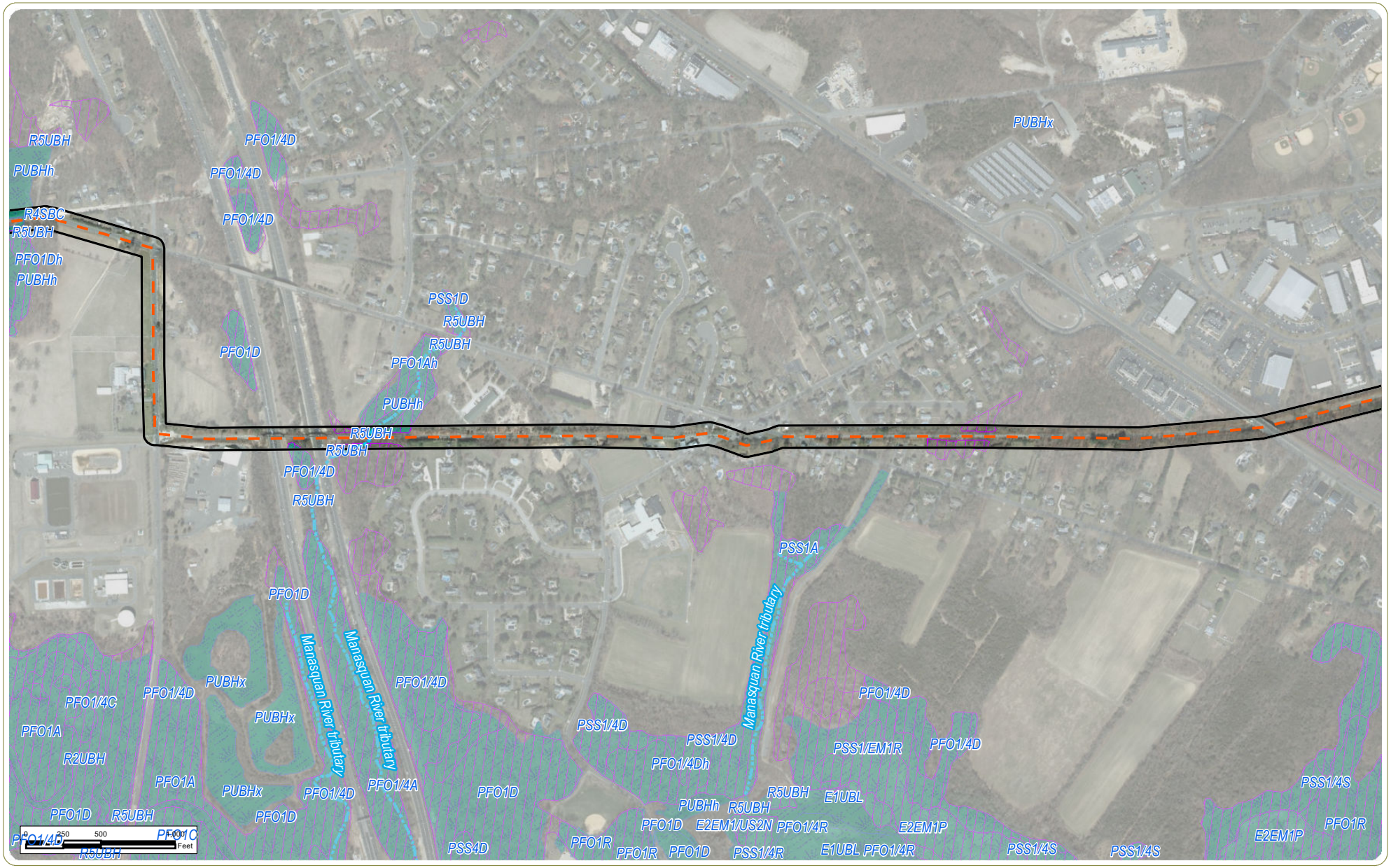

Wetland and Stream Delineation Report
Insert Project Title
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 4 - NJDEP/NWI Mapped Wetlands and Streams
Sheet 3 of 7

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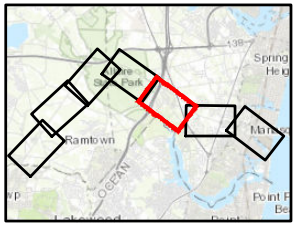

- Onshore Route
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- Stream
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- NWI Wetland

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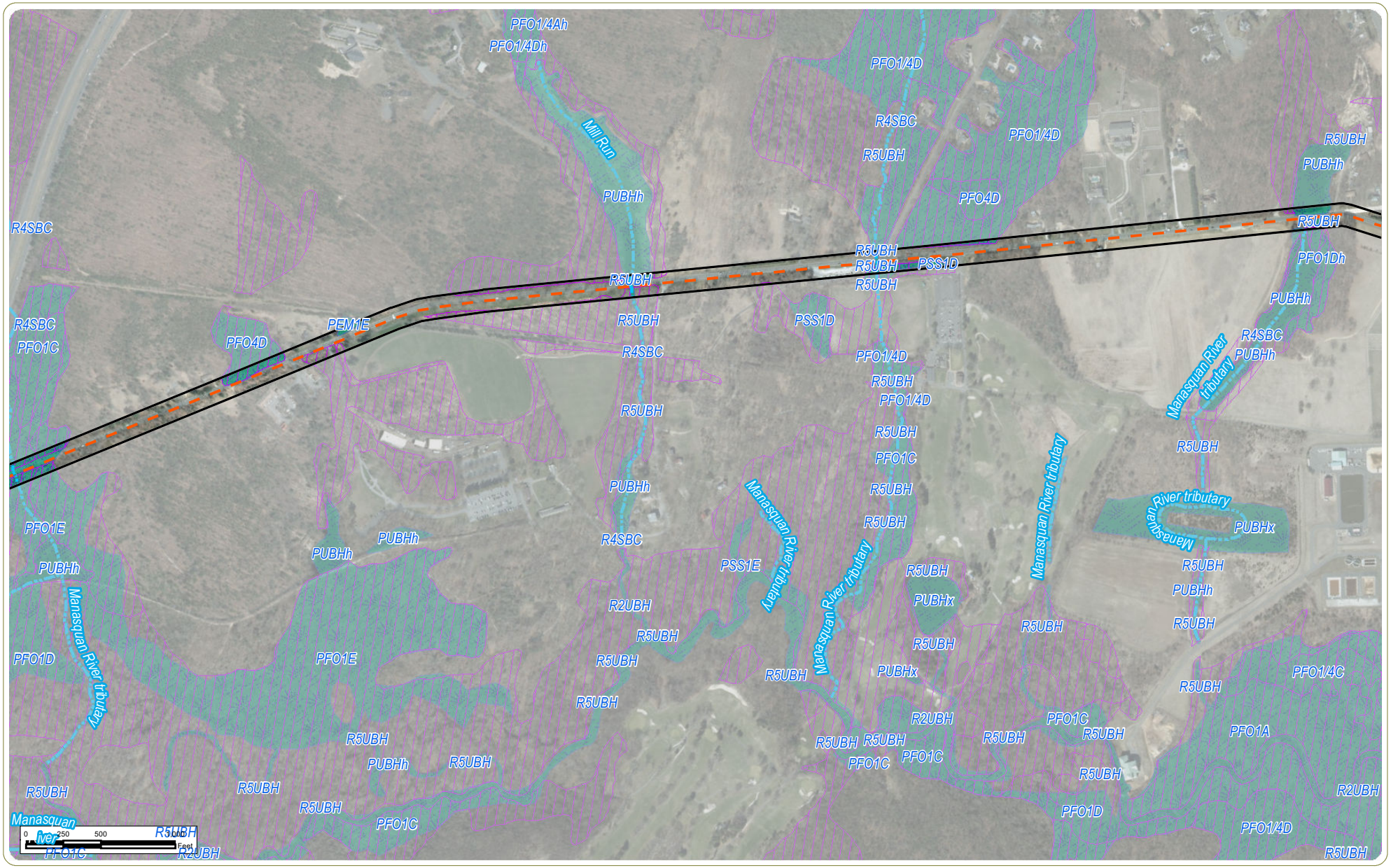

Wetland and Stream Delineation Report
Insert Project Title
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 4 - NJDEP/NWI Mapped Wetlands and Streams
Sheet 4 of 7

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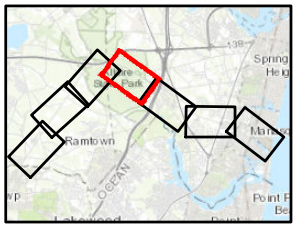

- Onshore Route
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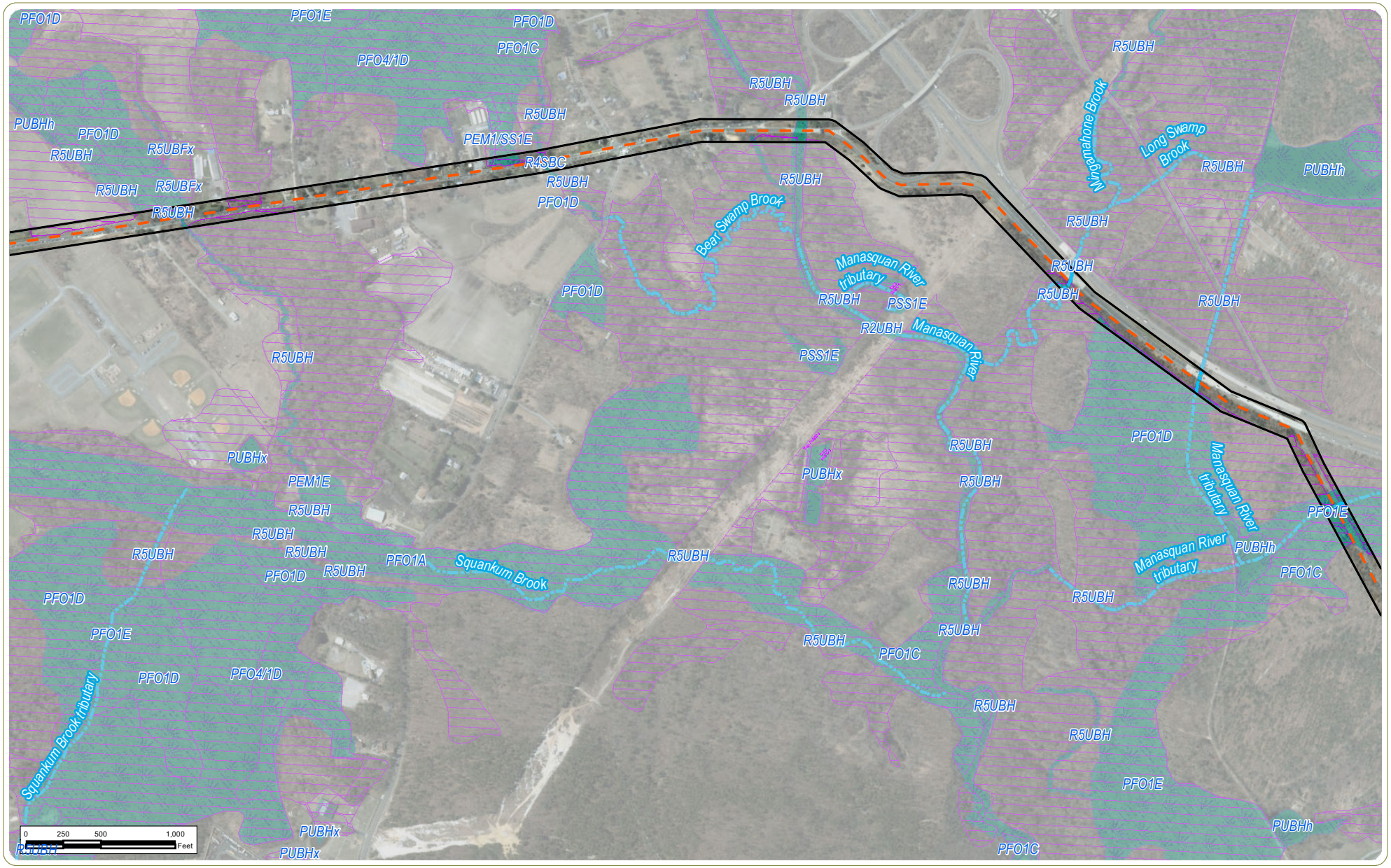

Wetland and Stream Delineation Report
Insert Project Title
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
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Figure 4 - NJDEP/NWI Mapped Wetlands and Streams
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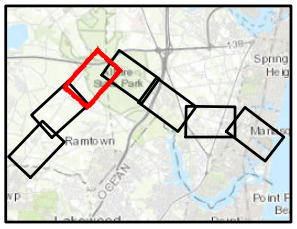

- Onshore Route
- Study Area
- Stream
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- NWI Wetland

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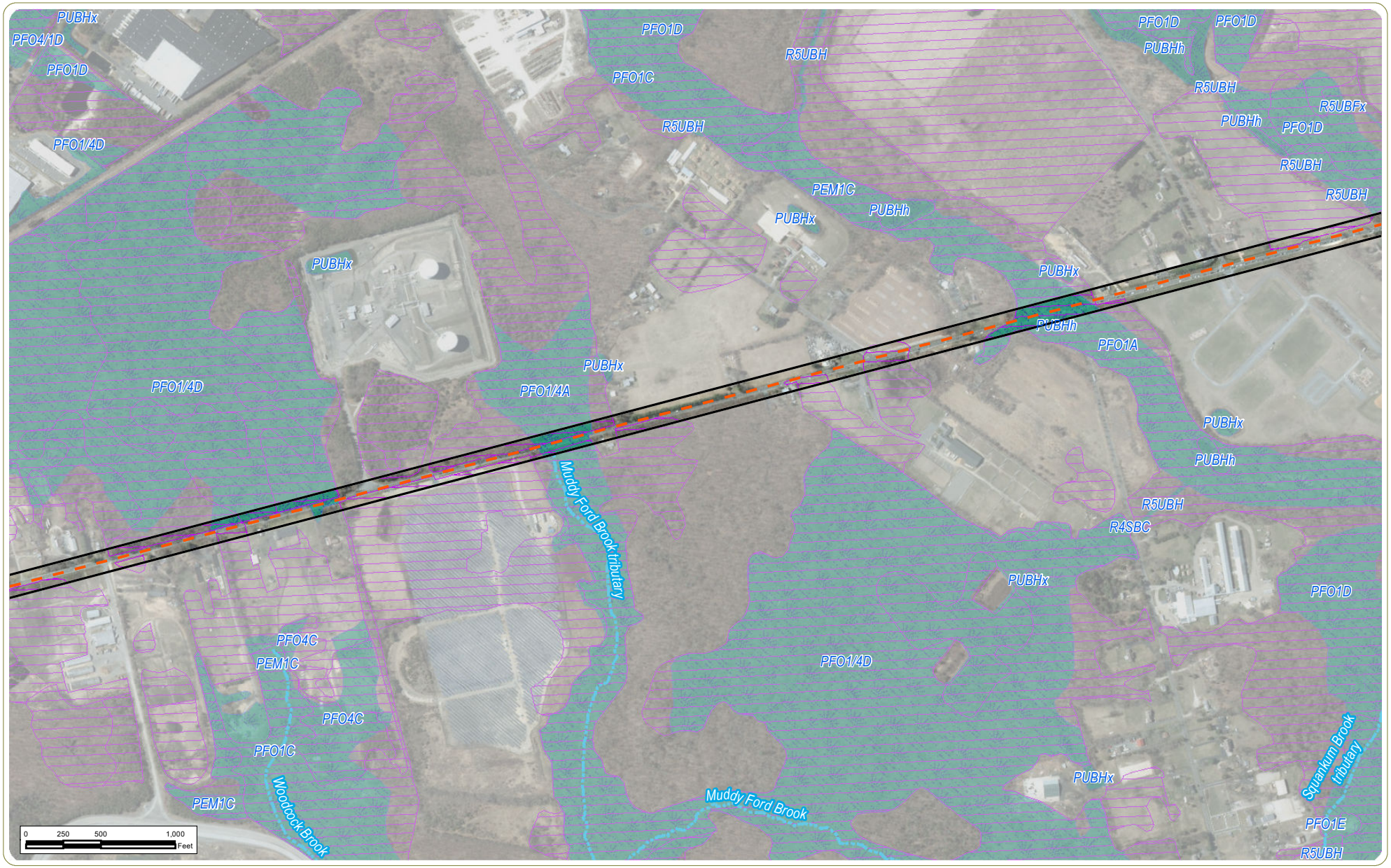

Wetland and Stream Delineation Report
Insert Project Title
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 4 - NJDEP/NWI Mapped Wetlands and Streams
Sheet 6 of 7

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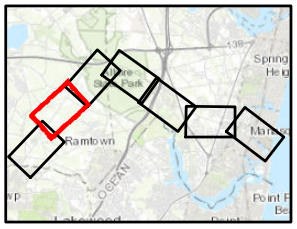

- Onshore Route
- Study Area
- Stream
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- NWI Wetland

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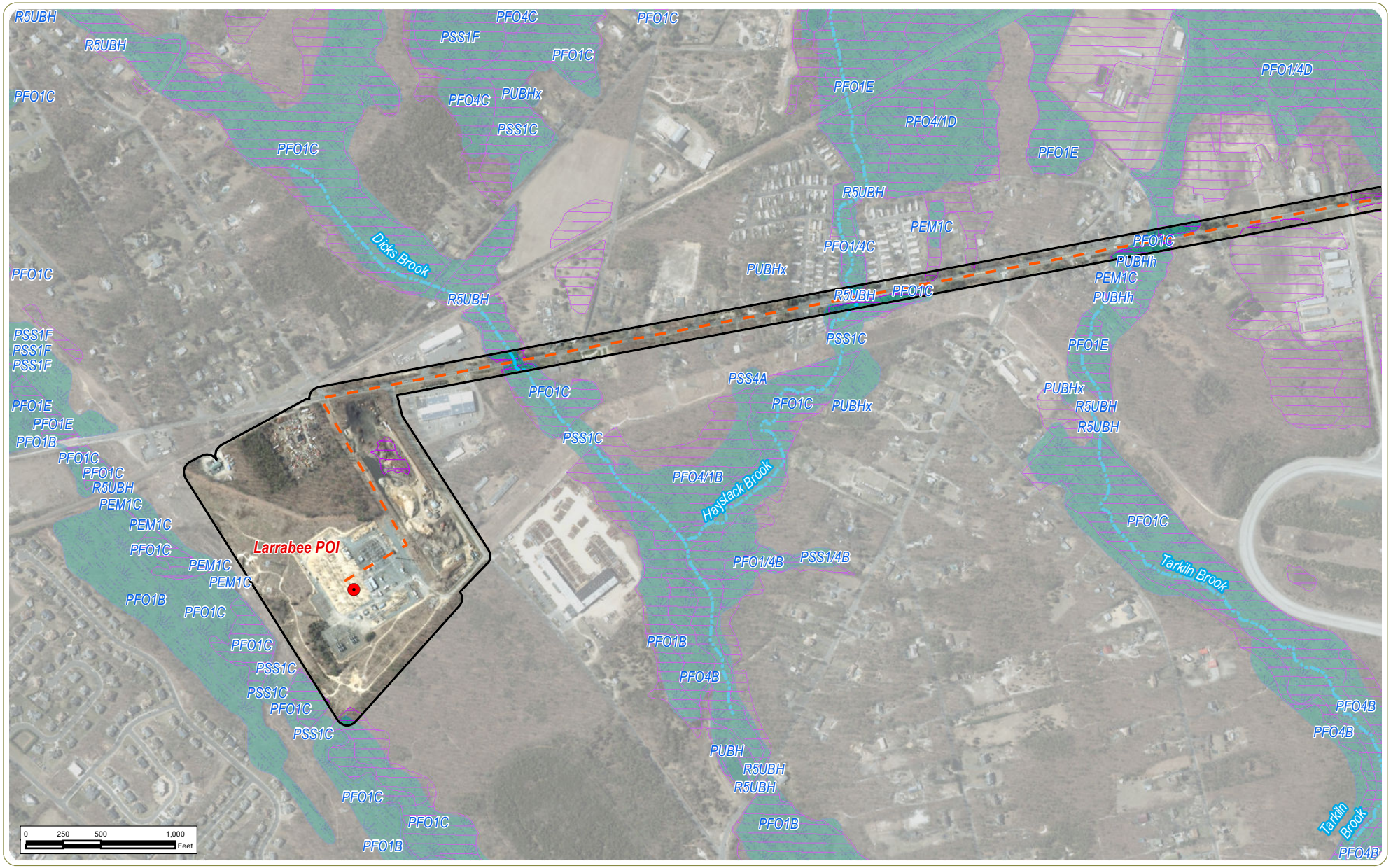

Wetland and Stream Delineation Report

Insert Project Title

Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 4 - NJDEP/NWI Mapped Wetlands and Streams
Sheet 7 of 7

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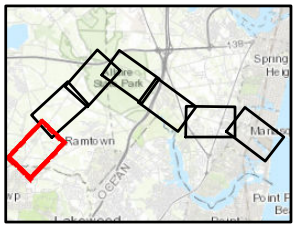

- Onshore Route
- Study Area
- Stream
- NJDEP Wetland
- NWI Wetland

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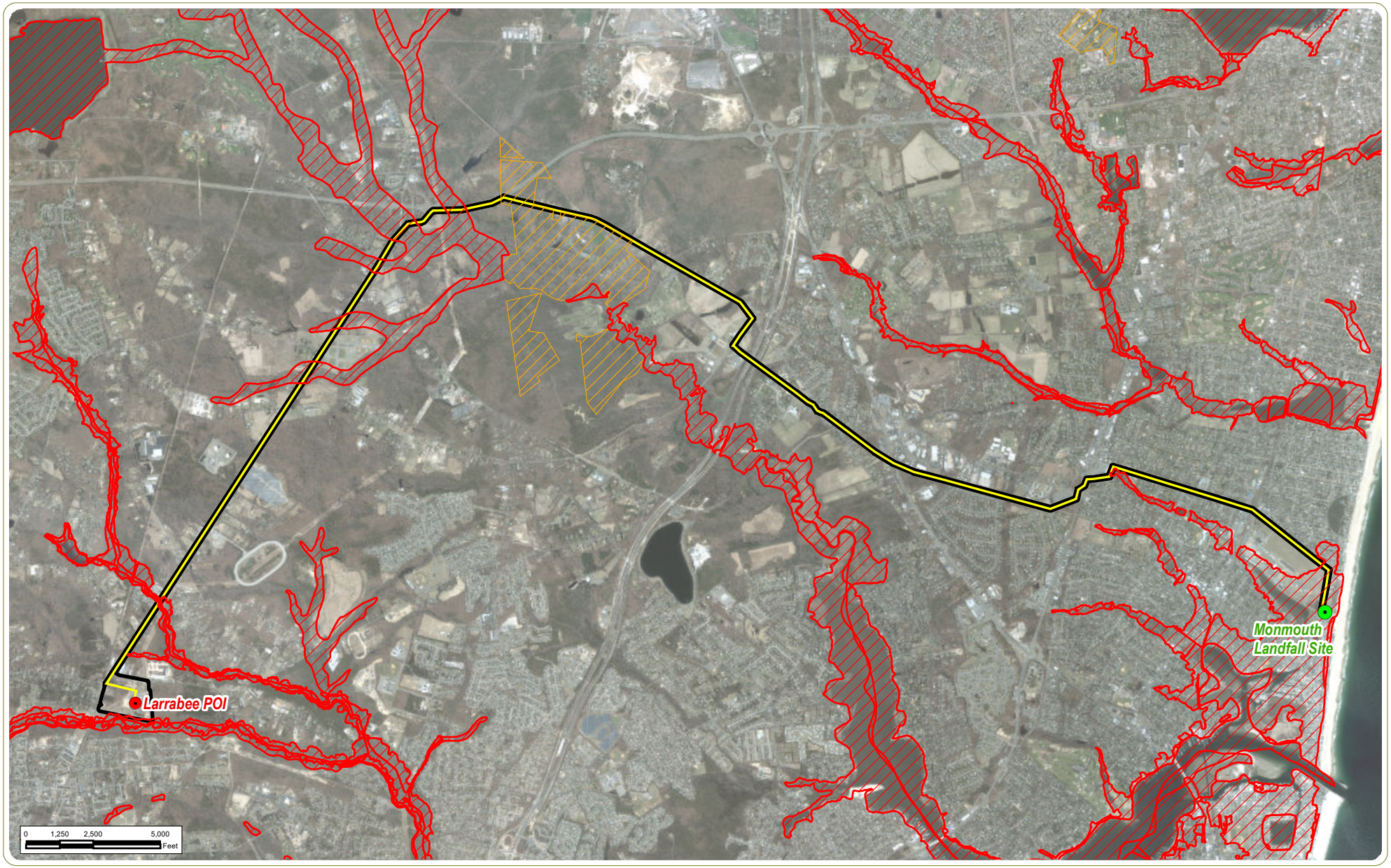
Figure 5

FEMA 1% Chance Annual Floodplain



Wetland and Stream Delineation Report
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Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 5 - FEMA 1% Chance Annual Floodplain

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- FEMA Floodplain (1% Annual Chance of Flood)
- Floodzone D - Undetermined Flood Hazard Risk
- Onshore Route
- Study Area

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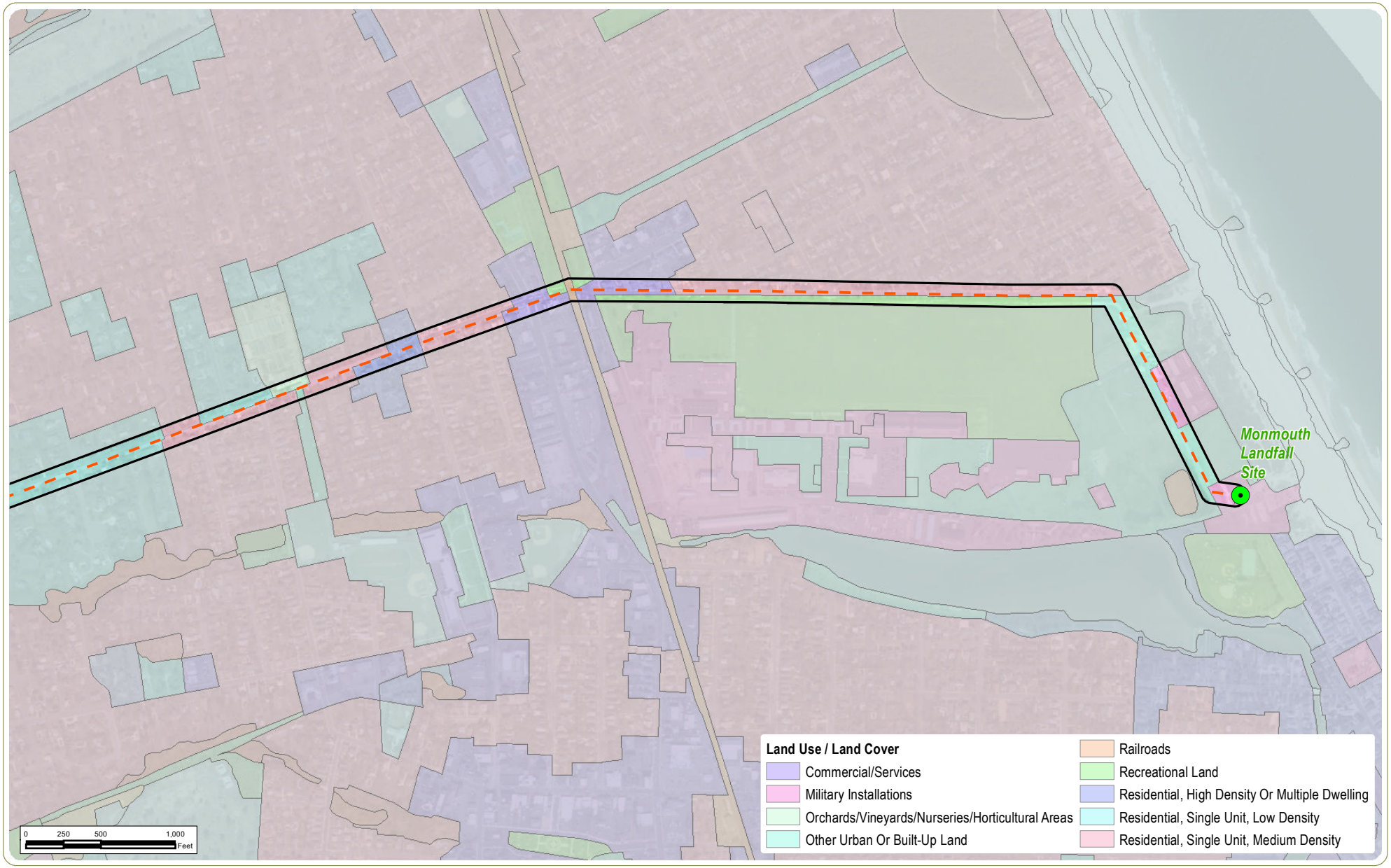
Figure 6

Land Use/Land Cover



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Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Figure 6 - Land Use/Land Cover
Sheet 1 of 7

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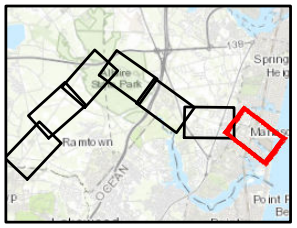

Onshore Route
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Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
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Figure 6 - Land Use/Land Cover
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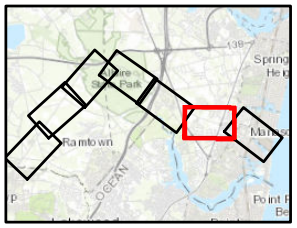
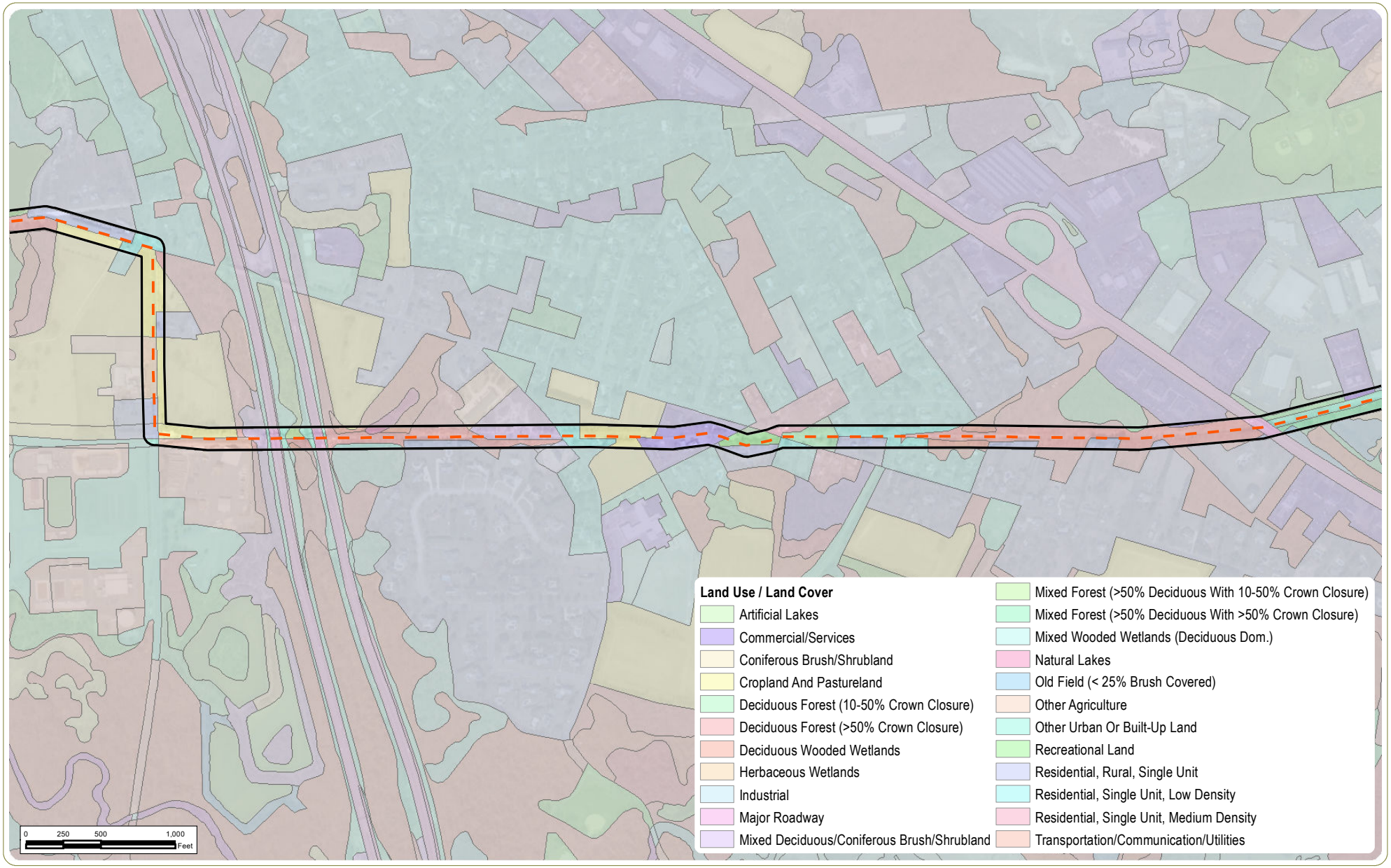


Onshore Route
Study Area



Habitat Suitability Assessment Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

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Figure 6 - Land Use/Land Cover
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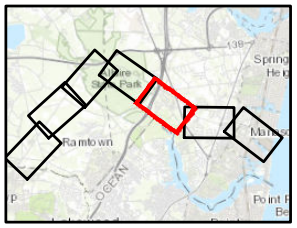
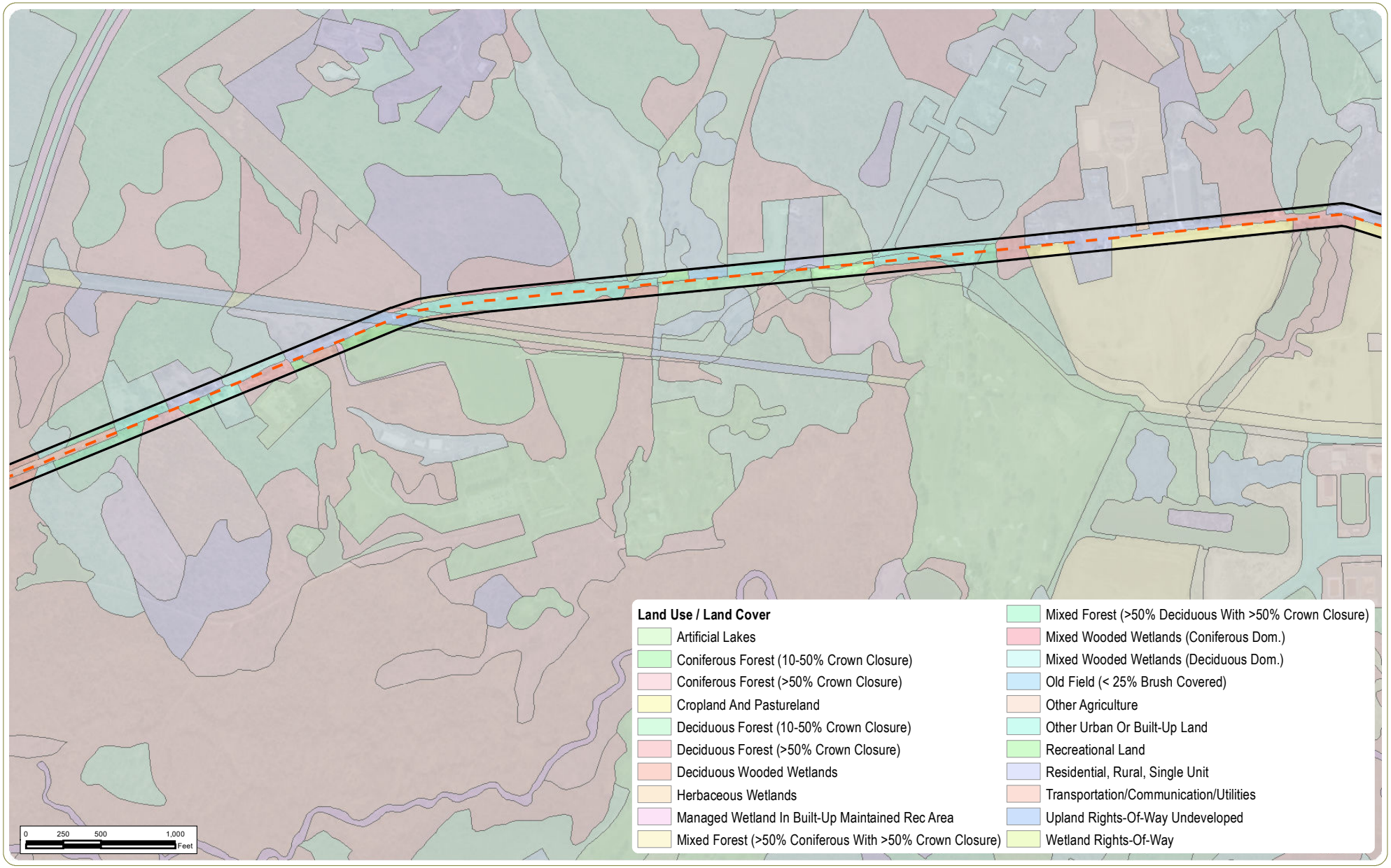


Onshore Route
Study Area



Habitat Suitability Assessment Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
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Figure 6 - Land Use/Land Cover
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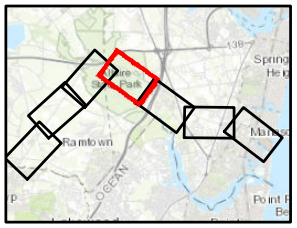
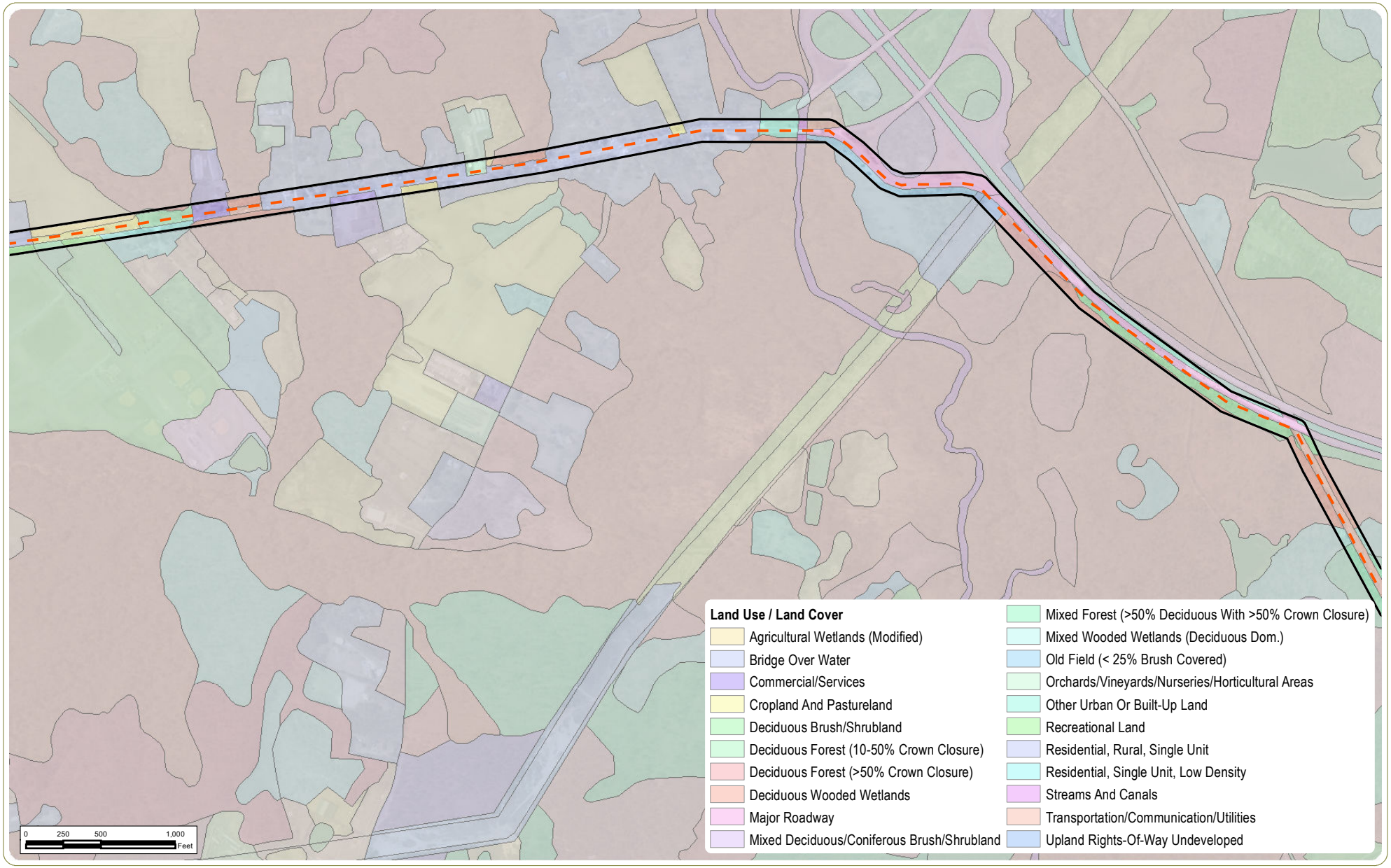


Onshore Route
Study Area



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Monmouth County, New Jersey

Figure 6 - Land Use/Land Cover
Sheet 5 of 7

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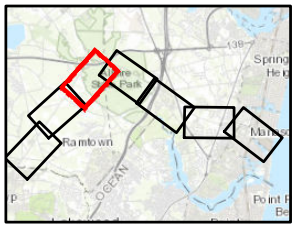

Onshore Route
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Habitat Suitability Assessment Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

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Monmouth County, New Jersey

Figure 6 - Land Use/Land Cover
Sheet 6 of 7

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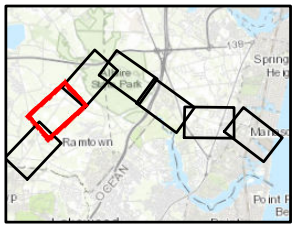

Onshore Route
Study Area

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Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

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Figure 6 - Land Use/Land Cover
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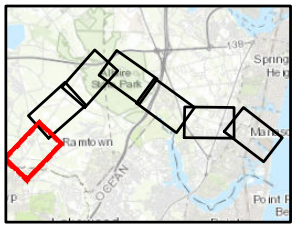

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Study Area

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APPENDIX B

Routine Wetland Determination Data Sheets and Stream Inventory Forms

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL1

Note: if a more detailed site description is necessary, provide detail here: Upland area within the National Guard Training Facility.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 3/3 , loamy sand

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL1

Note: if a more detailed site description is necessary, provide detail here: Depressional area associated with beach and dune system within the National Guard Training Facility. PEM wetland.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Common Reed (Phragmites australis)*	80	FACW	Herbaceous
2.	*Soft Rush (Juncus effucus)*	3	OBL	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are FAC or OBL.

SOILS

Series/Phase: WogA: Woodstown loam, 0 to 2 percent slopes Subgroup: Woodstown

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-12" 10YR 2/2

Mottle Colors: None

Other hydric soil indicators: Problematic sandy soils

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Both colors and texture qualify this soil to be hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 3 inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 3 inches

List of other field evidence of surface inundation or soil saturation: Drainage patterns, dry season water table, geomorphic position, FAC-neutral test.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Two primary and four secondary indicators of hydrology were observed at this location.

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL2

Note: if a more detailed site description is necessary, provide detail here: Steep hill between bike path and wetland area, on a convex hillslope with >12% slope

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Cherry (Prunus serotina)	30%	FACU	Tree
2.	Tree of Heaven (Ailanthus altissima)	70%	FACU	Tree
3.	Black Locust (Robinia pseudoacacia)	20%	UPL	Tree
4.	Bamboo (Bambusoideae sp.)	30%	NA	Sapling/Shrub
5.	Grape Vine (Vitis sp.)	20%	NA	Woody Vine
6.	Pokeweed (Phytolacca americana)	15%	FACU	Herbaceous
7.	Multiflora Rose (Rosa multiflora)	5%	FACU	Herbaceous
8.	Green Briar (Smilax rotundifolia)	60%	FAC	Woody Vine

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0.14%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Entisols Subgroup: Psamments

Is the soil on the hydric soils list? Yes ☐ No ☒ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-3 10YR 3/1 (Sandy fill) Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/20/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL2

Note: if a more detailed site description is necessary, provide detail here:

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Willow sp. (Salix sp.)	35%	NA	Tree
2.	PA Smartweed (Polygonum pensylvanicum)	65%	FACW	Herbaceous
3.	Soft Rush (Juncus effusus)	10%	OBL	Herbaceous
4.	Reed Canary Grass (Phalaris arundinacea)	10%	OBL	Herbaceous
5.	Blunt Broom Sedge (Carex tribuloides)	10%	FACW	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Ultisols Subgroup: Udultus

Is the soil on the hydric soils list? Yes ☐ No ☒ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-1” 10yr 2/1, 1-8” 10yr 4/1 (80%), clayey loam Mottle Colors: 1-8” 10yr 5/8 (20%)

Other hydric soil indicators: Low chroma soils and mottled soils

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Hydric mineral soils that are saturated for substantial periods of the growing season, but are unsaturated for some time, commonly develop mottles. Soils that have brightly colored mottles and a low chroma matrix are indicative of a fluctuating water table.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: water stained leaves, saturated soils, geomorphic position

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL3

Note: if a more detailed site description is necessary, provide detail here: Upland between open water wetland and pedestrian walkway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☒ No☐ (If yes, explain) Pedestrian walkway through upland area

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Black Maple (Acer nigrum)	50%	UPL	Tree
2.	Tree of Heaven (Ailanthus altissima)	70%	FACU	Tree
3.	Black Locust (Robinia pseudoacacia)	20%	UPL	Tree
4.	Mulitflora Rose (Rosa multiflora)	30%	FACU	Sapling/Shrub
5.	Fireweed (Chamerion angustifolium)	20%	NA	Herbaceous
6.	Goldenrod (Solidago canadensis)	5%	FACU	Herbaceous
7.	Greenbriar (Smilax rotundifolia)	30%	FAC	Woody Vine
8.	Japanese Honeysuckle (Lonicera japonica)	30%	FACU	Woody Vine

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Ultisols Subgroup: Udults

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epipedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-3" 10YR 3/1 (Sandy fill)

Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL3

Note: if a more detailed site description is necessary, provide detail here: Open water wetland that feeds a stream that flows along the walkway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☒ No☐ (If yes, explain) Sand roadway running through wetland area

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Jewelweed (Impatiens capensis)	20%	FACW	Herbaceous
2.	Lurid Sedge (Carex lurida)	30%	OBL	Herbaceous
3.	Fox Sedge (Carex vulpinoidea)	20%	FACW	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Hammonton sandy loam & Fallsington loams/Ultisols Subgroup: Udults & Aquults

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☒ No ☐ Histic epipedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: Not accessible, wet muck

Mottle Colors: N/A

Other hydric soil indicators: heavy concentration of organic material, creating a loose mucky soil

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 3”

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 0”

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL4

Note: if a more detailed site description is necessary, provide detail here: hillslope

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Fireweed (Chamerion angustifolium)	30%	NA	Herbaceous
2.	Goldenrod (Solidago canadensis)	50%	FACU	Herbaceous
3.	Honeysuckle Vine (Lonicera japonica)	20%	FACU	Herbaceous
4.	Mugwort (Artemisia vulgaris)	30	UPL	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Ultisols Subgroup: Udults

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epipedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-3” 10yr 3/1 sand

Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL4

Note: if a more detailed site description is necessary, provide detail here: PFO

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Red Maple (Acer rubrum)	80%	FAC	Tree
2.	Pepperbush (Clethra alnifolia)	60%	FACW	Sapling/Shrub
3.	Sweetgum (liquidambar styraciflua)	20%	FAC	Sapling/Shrub
4.	Skunk Cabbge (Symplocarpus foetidus)	60%	OBL	Herbaceous
5.	Cinnamon Fern (Osmunda cinnamomea)	30%	FACW	Herbaceous
6.	Jack in the Pulpet (Arisaema triphyllum)	10%	FACW	Herbaceous
7.	Jewelweed (Impatiens capensis)	10%	FACW	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Fallsington loams/Ultisols Subgroup: Aquults

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☒ No ☐ Histic epipedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10yr 2/1 mucky

Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 1"

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL5

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 3/3 , loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL5

Note: if a more detailed site description is necessary, provide detail here: Depressional area associated with stormwater runoff. PEM wetland.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Common Reed (Phragmites australis)*	40	FACW	Herbaceous
2.	*Marsh Fern (Thelypteris palustris)*	25	FACW	Herbaceous
3.	*Skunk Cabbage (Symplocarpus foetidus)*	20	OBL	Herbaceous
4.	*Allegheny Blackberry (Rubus allegheniensis)*	5	FACU	Herbaceous
5.	*White Goldenrod (Solidago bicolor)*	5	FAC	Herbaceous
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are FAC, FACW, or OBL.

SOILS

Series/Phase: FapA: Fallsington loams, 0 to 2 percent slopes Subgroup: Fallsington

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-2" 10YR 2/2, loam; 2-18" 2.5Y 4/2, sand with cobbles

Mottle Colors: None

Other hydric soil indicators: Problematic sandy soils

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Both colors and texture qualify this soil to be hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 4 inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 4 inches

List of other field evidence of surface inundation or soil saturation: Algal mat or crust, inundation visible on aerial imagery, water-stained leaves, drainage patterns, dry-season water table, geomorphic position, FAC neutral test.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Six primary and four secondary indicators of hydrology were observed at this location.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL6

Note: if a more detailed site description is necessary, provide detail here: Upland forested area on the side of a county highway.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*American Holly (Ilex opaca)*	30	FAC	Tree
2.	*Mountain Laurel (Kalmia latifolia)*	15	FACU	Tree
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 66.6%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are either FAC or FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-2" 10YR 2/1; 2-6" 10YR 3/2+; 6-18" 10YR 3/3, sandy loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL6

Note: if a more detailed site description is necessary, provide detail here: Depressional area associated with stormwater runoff. PFO wetland.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Swamp White Oak (Quercus bicolor)*	30	FACW	Tree
2.	*American Holly (Illex opaca)*	30	FAC	Tree
3.	*Roundleaf Green Briar (Smilax rotundifolia)*	5	FAC	Herbaceous
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are FAC or FACW.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☒ No ☐ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-5" 10YR 2/1, muck; 5-18" 10YR 3/1, silt loam

Mottle Colors: None

Other hydric soil indicators: Histosol (A1) and 2cm Muck (A10)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Both colors and texture qualify this soil to be hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 1 inch

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 5 inches

List of other field evidence of surface inundation or soil saturation: Thin muck surface, drainage patterns, dry-season water table, geomorphic position

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Four primary and three secondary indicators of hydrology were observed at this location.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL7

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: WogA: Woodstown loam, 0 to 2 percent slopes Subgroup: Woodstown

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 3/3, loamy sand

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL7

Note: if a more detailed site description is necessary, provide detail here: Depressional area associated with stormwater runoff. PEM wetland.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Sweetgum (Liquidambar styraciflua)*	5	FAC	Tree/Sapling
2.	*Soft Rush (Juncus effucus)*	3	OBL	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are FAC or OBL.

SOILS

Series/Phase: WogA: Woodstown loam, 0 to 2 percent slopes Subgroup: Woodstown

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-5" 10YR 2/2, silt loam; 5-18" 2.5Y 3/2, loamy sand Mottle Colors: 0-5" 10YR 5/6

Other hydric soil indicators: Problematic sandy soils

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Both colors and texture qualify this soil to be hydric. There are also oxidized rhizospheres.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 3 inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 3 inches

List of other field evidence of surface inundation or soil saturation: Oxidized rhizospheres, drainage patterns, dry season water table, geomorphic position, FAC neutral test.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Three primary and four secondary indicators of hydrology were observed at this location.

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL8

Note: if a more detailed site description is necessary, provide detail here: Upland between forested wetland swale and walkway, mowed area

Do normal environmental conditions exist at the plant community?

Yes ☐ No ☒ (If no, explain) Mowed area

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☒ No☐ (If yes, explain) Mowed area

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Sweet Gum (Liquidambar styraciflua)	50%	FAC	Tree
2.	Red Maple (Acer rubrum)	30%	FAC	Tree
3.	Grass sp.	90%	NA	Herbaceous
4.	White Clover (Trifolium repens)	50%	FACU	Herbaceous
5.	Sensitive Fern (Onoclea sensibilis)	1%	FACW	Herbaceous
6.	Wild Carrot (Daucus carota)	10%	UPL	Herbaceous
7.	Red Clover (Trifolium pretense)	30%	FACU	Herbaceous
8.	Poison Ivy (Toxicodendron radicans)	10%	FAC	Herbaceous
9.	Milkweed (Asclepias syriaca)	5%	UPL	Herbaceous
10.	Dogbane (Apocynum cannabinum)	5%	FACU	Herbaceous
11.	Blue Eyed Grass (Sisyrichium angustifolium)	1%	FACW	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 50%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Spodosols Subgroup: Aquods

Is the soil on the hydric soils list? Yes ☐ No ☒ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epipedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-4" 10yr 3/3

Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL8

Note: if a more detailed site description is necessary, provide detail here: Low lying area between walkway and road

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Sweet Gum (Liquidambar styraciflua)	60%	FAC	Tree
2.	Red Maple (Acer rubrum)	90%	FAC	Tree
3.	Cherry (Prunus serotine)	10%	FACU	Tree
4.	Arrowwood Viburnum (Viburnum dentatum)	10%	FAC	Sapling/Shrub
5.	Pepperbush (Clethra alnifolia)	5%	FACW	Sapling/Shrub
6.	Sensative Fern (Onoclea sensibilis)	10%	FACW	Herbaceous
7.	Fern	60%	NA	Herbaceous
8.	Poison Ivy (Toxicodendron radicans)	15%	FAC	Herbaceous
9.	Soft Rush (Juncus effuses)	10%	OBL	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 80%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Woodstown loam & Atsion sand/Ultisols & Spodosols Subgroup: Udults & Aquods

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epipedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-3" 10yr 2/1, 3-10" 10yr 4/2 (85%)

Mottle Colors: 3-10" 10yr 4/6 (15%) redox

Other hydric soil indicators: Low chroma matrix

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: Sparsely vegetated areas, moss trim lines

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL9

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 3/3, sandy loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/07/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL9

Note: if a more detailed site description is necessary, provide detail here: Depressional area associated with stormwater runoff. PEM wetland.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Coastal Pepperbush (Clethra alnifolia)*	10	FACW	Shrub/Scrub
2.	*Creeping Jenny (Lysimachia nummularia)*	20	FACW	Herbaceous
3.	*Japanese Silt Grass (Microstegium vimineum)*	15	FAC	Herbaceous
4.	*Water Knotweed (Polygonum almhibium)*	10	OBL	Herbaceous
5.	*Woolgrass (Scirpus cyperinus)*	5	OBL	Herbaceous
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are OBL, FAC, or FACW.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☒ No ☐ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-10" 10YR 2/1, muck; 10- 18" 2.5Y 4/1, sandy loam

Mottle Colors: 10-18" 2.5Y 2.5/1

Other hydric soil indicators: Histosol (A1), Thick Dark Surface (A12) and 2cm Muck (A10)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Both colors and texture qualify this soil to be hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 24+ inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 0 inches

List of other field evidence of surface inundation or soil saturation: Algal mat or crust, iron deposits, drainage patterns, moss trim lines, dry-season water table, geomorphic position, and FAC neutral test.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Five primary and five secondary indicators of hydrology were observed at this location.

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL10

Note: if a more detailed site description is necessary, provide detail here: Sloped area leading to steep bank

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Red Maple (Acer rubrum)	40%	FAC	Tree
2.	Cherry (Prunus serotine)	10%	FACU	Tree
3.	Knotweed (Polygonum cuspidatum)	40%	UPL	Sapling/Shrub
4.	Arrowwood Viburnum (Viburnum dentatum)	50%	FAC	Sapling/Shrub
5.	Japanese Honeysuckle (Lonicera japonica)	30%	FACU	Woody Vine
6.	Mugwort (Artemisia vulgaris)	30%	UPL	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 33.3%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Ultisols Subgroup: Udults

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epipedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-6" 10yr 4/2

Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL10

Note: if a more detailed site description is necessary, provide detail here: PEM, Channel within steep banks, wetland fringe between stream and toe of slope

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Cherry (Prunus serotine)	40	FACU	Tree
2.	Arrowwood Viburnum (Viburnum dentatum)	30%	FAC	Sapling/Shrub
3.	Multiflora Rose (Rosa multiflora)	5%	FACU	Sapling/Shrub
4.	Grape Vine (Vitis sp.)	20%	NA	Woody Vine
5.	Skunk Cabbage (Symplocarpus foetidus)	20%	OBL	Herbaceous
6.	Japanese Stiltgrass (Microstegium vimineum)	80%	FAC	Herbaceous
7.	Sensitive Fern (Onoclea sensibilis)	5%	FACW	Herbaceous
8.	Deer Tongue (Dichanthelium clandestinum)	5%	FACW	Herbaceous
9.	Japanese Honeysuckle (Microstegium vimineum)	10%	FAC	Herbaceous
10.	Lurid Sedge (Carex lurida)	5%	OBL	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 50%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: Prevalence Index: 2.93 (</= 3.0)

SOILS

Series/Phase: Woodstown loam/Ultisols Subgroup: Udults

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epipedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-6" 10yr 2/1 (85%), 6-14" 10yr 3/1 sandy

Mottle Colors: 0-6" 10yr 4/6 (15%)

Other hydric soil indicators: Low chroma mottled matrix

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 5"

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/8/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL11

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Red Maple (Acer rubrum)*	10	FAC	Tree
2.	*Green Briar (Smilax sp.)*	5	FAC	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: Click or tap here to enter text.

SOILS

Series/Phase: HumAt: Humaquepts, 0 to 3 percent slopes, frequently flooded Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 4/4, sandy loam

Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: No hydric soils present.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: No standing water in the pit.

List of other field evidence of surface inundation or soil saturation: Not a hydric soil.

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: Click or tap here to enter text.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/8/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL11

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Deer Tongue Grass (Dichanthelium clandestinum)*	5	FACW	Herbaceous
2.	*Skunk Cabbage (Symplocarpus foetidus)*	5	OBL	Herbaceous
3.	*River Birch (Betula nigra)*	5	FACW	Tree
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All vegetation present is either FACW or OBL.

SOILS

Series/Phase: HumAt: Humaquepts, 0 to 3 percent slopes, frequently flooded Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☒ No ☐ Histic epidedon present? Yes ☐ No ☐

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 2.5Y 2.5/1, muck

Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: 16 inches or more of the upper 80 cm (32 inches) is organic soil material.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 3-inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 0-inches

List of other field evidence of surface inundation or soil saturation: High Water Table, Iron Deposits, Water-Stained Leaves, Drainage Patterns, Dry-Season Water Table, Geomorphic Position, FAC-Neutral Test.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: POW wetland meeting all three criteria for a wetland.

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL12

Note: if a more detailed site description is necessary, provide detail here: Roadside shoulder – recently mowed, vegetation is disturbed

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☒ No☐ (If yes, explain) vegetation was recently mowed

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Grass sp.	95%	NA	Herbaceous
2.	Deer Tongue (Dichanthelium clandestinum)	10%	FACW	Herbaceous
3.	Green Briar (Smilax rotundifolia)	60%	FAC	Herbaceous
4.	Poison Ivy (Toxicodendron radicans)	5%	FAC	Herbaceous
5.	Fireweed (Camerion angustifolium)	80%	FACU	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0.33%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Spodosols Subgroup: Aquods

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☒

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-8 10yr 3/2 (sandy loam) Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/a

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL12

Note: if a more detailed site description is necessary, provide detail here: Swale/Collection Basin along roadway and park entrance

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Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☒ No☐ (If yes, explain) Man-made area, not recently disturbed, but historically disturbed/created

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VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Elderberry (Sambcus nigra)	10%	FACW	Tree
2.	Common Reed (Phragmites australis)	95%	FACW	Herbaceous
3.	Deer Tongue (Dichanthelium clandestinum)	5%	FACW	Herbaceous
4.	Grape sp. (Vitis sp.)	10%	NA	Woody Vine
5.	Greenbriar (Smilax rotundifolia)	15%	FAC	Woody Vine

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Atsion Sand/Spodosols Subgroup: Aqalquods

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-6" 10yr 3/1(90%), 6-14 10yr 5/2 (90%) Mottle Colors: 0-6"10yr 4/6 concentrations (10%), 6-14" 10yr 4/6 redox concentrations (10%)

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Hydric mineral soils that are saturated for substantial periods of the growing season, but are unsaturated for some time, commonly develop mottles. Soils that have brightly colored mottles and a low chroma matrix are indicative of a fluctuating water table.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: Low lying area

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Area was visited at a dry time, low lying area paired with hydric soils and vegetation indicate that water collects here and lays for long periods of time. Sandy soils will not hold water during dry times.

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL13

Note: if a more detailed site description is necessary, provide detail here: Upland area: wooded and transition from wetland to upland area

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Black Gum (Nyssa sylvatica)	60%	FAC	Tree
2.	Sweet Gum (Liquidambar styraciflua)	50%	FAC	Tree
3.	Sweet Gum (Liquidambar styraciflua)	60%	FAC	Sapling/Shrub
4.	Blueberry (Vaccinium corymbosum)	10%	FACW	Sapling/Shrub
5.	Red Maple (Acer rubrum)	10%	FAC	Sapling/Shrub
6.	Japanese Stilt Grass (Microstegium vimineum)	5%	FAC	Herbaceous
7.	Red Maple (Acer rubrum)	80%	FAC	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Spodosols Subgroup: Aquods

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-12" 10yr 4/2 sandy Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL13

Note: if a more detailed site description is necessary, provide detail here: Wetland on edge of forest line stretching into forest line

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Black Gum (Nyssa sylvatica)	50%	FAC	Tree
2.	Red Maple (Acer rubrum)	20%	FAC	Tree
3.	Sugar Maple (Acer saccharum)	5%	FACU	Sapling/Shrub
4.	Blueberry (Vaccinium corymbosum)	10%	FACW	Sapling/Shrub
5.	Japanese Stilt Grass (Microstegium vimineum)	90%	FAC	Herbaceous
6.	Greenbriar (Smilax rotundifolia)	30%	FAC	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 83%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Atsion Sand/Spodosols Subgroup: Aquods

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☒ No ☐

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-4" 10yr 2/1 organic loam (90%), 4-8" 10yr 2/1 sandy loam (90%), 8-14 10yr 4/2 sand (80%)

Mottle Colors: 0-4" 5yr 4/4 (10%), 4-8" 5yr 4/4 (10%), 8-14" 10yr 5/8 (20%)

Other hydric soil indicators: Low chroma soils

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: Moss trim lines, soils saturation

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL14

Note: if a more detailed site description is necessary, provide detail here: Forested Area

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Black Gum (Nyssa sylvatica)	80%	FAC	Tree
2.	Sweet Gum (Liquidambar sytraciflua)	10%	FAC	Tree
3.	Grass sp.	90%	NA	Herbaceous
4.	Greenbriar (Smilax rotundifolia)	5%	FAC	Herbaceous
5.	Winterberry Holly (Ilex verticillate)	5%	FACW	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 50%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Spodosols Subgroup: Aquods

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-6" 10yr 3/1 sandy Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL14

Note: if a more detailed site description is necessary, provide detail here: Soils are heavily saturated with areas that have little to no vegetation from previous standing water

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Sweet Gum (Liquidambar styraciflua)	80%	FAC	Tree
2.	Black Gum (Nyssa sylvatica)	30%	FAC	Tree
3.	Red Maple (Acer rubrum)	80%	FAC	Tree
4.	Red Maple (Acer rubrum)	40%	FAC	Sapling/Shrub
5.	Cinnamon Fern (Osmunda cinnamomea)	5%	FACW	Herbaceous
6.	Moss sp.	50%	NA	Herbaceous
7.	Greenbriar (Smilax rotundifolia)	5%	FAC	Woody Vine
8.	Japanese Stilt Grass (Microstegium vimineum)	50%	FAC	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 83%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Atsion Sand and Evesboro Sand/Spodosols Subgroup: Aquods

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☒ No ☐

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-10" 10yr 2/1 organic sand (90%); 10-18" 10yr 3/1 sandy Mottle Colors: 0-10"10yr 4/2 (10%)

Other hydric soil indicators: saturated soils, low chroma soils

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: Saturated soils, sparsely vegetated surface, trees have moss trim lines

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: UL15

Note: if a more detailed site description is necessary, provide detail here: Area between wetland that feeds ephemeral stream and waterway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Sweet Birch (Betula lenta)	80%	FACU	Tree
2.	Red Maple (Acer rubrum)	60%	FAC	Tree
3.	Barberry (Berberis sp.)	20%	NA	Sapling/Shrub
4.	Spicebush (Lindera benzoin)	40%	FACW	Sapling/Shrub
5.	PA Smartweed (Polygonum pensylvanicum)	50%	FACW	Herbaceous
6.	Japanese Stiltgrass (Microstegium vimineum)	90%	FAC	Herbaceous
7.	Fern sp.	5%	NA	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 50%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Inceptisols Subgroup: Aquepts

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-8 10YR 3/1 Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: N/A

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: N/A

List of other field evidence of surface inundation or soil saturation: N/A

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen Date: 6/25/2020

Project/Site: Larrabee Wetland Delineation State: NJ County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL15

Note: if a more detailed site description is necessary, provide detail here:

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Red Maple (Acer rubrum)	50%	FAC	Tree
2.	Sweet Gum (Liquidambar styraciflua)	20%	FAC	Tree
3.	Rice Cut Grass (Leersia oryzoides)	60%	OBL	Herbaceous
4.	Reed Canary Grass (Phalaris arundinacea)	10%	OBL	Herbaceous
5.	Skunk Cabbage (Symplocarpus foetidus)	10%	OBL	Herbaceous
6.	Shallow Sedge (Carex lurida)	10%	OBL	Herbaceous

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Klej loamy sand/Entisols Subgroup: Psamments

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☒ No ☐

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-5" 10yr 2/2 Organic sand, 5-14" 10yr 4/1 sandy Mottle Colors: N/A

Other hydric soil indicators: sulfide smell, low chroma matrix

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 2”

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 0”

List of other field evidence of surface inundation or soil saturation: sulfide smell, located at the toe of slope

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL16

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Japanese Knotweed (Polygonum cuspidatum)*	15	FAC	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 15%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: 80% of the vegetation is FACU.

SOILS

Series/Phase: HumAt: Humaquepts, 0 to 3 percent slopes, frequently flooded Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-8" 10YR 3/3; 8-18" 10YR 4/4, loam

Mottle Colors: N/A

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: Matrix color does not meet criteria for a hydric soil.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None.

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No hydrology indicators present.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL16

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Japanese Stilt Grass (Microstegium vimineum)*	30	FAC	Herbaceous
2.	*Common Reed (Phragmites australis)*	10	FACW	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All vegetation present is either FAC or FACW.

SOILS

Series/Phase: HumAt: Humaquepts, 0 to 3 percent slopes, frequently flooded Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☒ No ☐ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 2.5Y 2.5/1, muck

Mottle Colors: N/A

Other hydric soil indicators: Thin muck surface

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Mucky texture and color make this soil hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 5-inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 0-inches

List of other field evidence of surface inundation or soil saturation: Water Marks (B1), Water-Stained Leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5).

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Multiple primary and secondary hydrology indicators present to meet hydrology criteria for this PFO wetland.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL17

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Common periwinkle (Vinca minor)*	80	FAC	Herbaceous
2.	*Japanese Knotweed (Polygonum cuspidatum)*	15	FAC	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All vegetation present is FAC.

SOILS

Series/Phase: HumAt: Humaquepts, 0 to 3 percent slopes, frequently flooded Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-6" 10YR 3/3; 6-18" 10YR 4/4, loam

Mottle Colors: N/A

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: Matrix color does not meet criteria for a hydric soil.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None.

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No hydrology indicators present.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL17

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*River Birch (Betula nigra)*	10	FACW	Tree
2.	*Boxelder (Acer negundo)*	10	FAC	Tree
3.	*White Dogwood (Cornus alba)*	20	FACW	Shrub/Scrub
4.	*Sweetgum (Liquidambar styraciflua)*	15	FAC	Shrub/Scrub
5.	Green Briar (Smilax sp.)	5	FAC	Herbaceous
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All vegetation present is either FAC or FACW.

SOILS

Series/Phase: HumAt: Humaquepts, 0 to 3 percent slopes, frequently flooded Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 2.5Y 4/3, sand (fill material)

Mottle Colors: N/A

Other hydric soil indicators: Thin muck surface

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Fill material from roadway creates problematic soils.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 2-inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 0-inches

List of other field evidence of surface inundation or soil saturation: Water Marks (B1), Water-Stained Leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2), and FAC-Neutral Test (D5).

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Multiple primary and secondary hydrology indicators present to meet hydrology criteria for this PFO wetland.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL18

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Red Maple (Acer rubrum)*	15	FAC	Tree
2.	*American Holly (Ilex opaca)*	5	FACU	Tree
3.	*Green Briar (Smilax sp.)*	10	FAC	Herbaceous
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 50%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: Vegetation criteria is not met.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-2" 7.5YR 3/3, loam; 2-18" 7.5YR 4/3, sand

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: Upland soil does not meet hydric criteria.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: No hydric soil indicators present.

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary and secondary hydrology indicators present.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL18

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Red Maple (Acer rubrum)*	10	FAC	Tree
2.	*White Dogwood (Cornus alba)*	30	FACW	Shrub/Scrub
3.	*Boxelder (Acer negundo)*	10	FAC	Shrub/Scrub
4.	*Umbrella Magnolia (Magnolia tripetala)*	5	FACU	Shrub/Scrub
5.	*Japanese Stilt Grass (Microstegium vimineum)*	50	FAC	Herbaceous
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 95.2%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: Vegetation is predominantly FAC or FACW.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☒ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 2/1, muck Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Matrix color and mucky texture qualify as hydric soil.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 10-inches

List of other field evidence of surface inundation or soil saturation: Water-Stained Leaves (B9), Drainage Patterns (B10), Dry Season Water Table (C2), Geomorphic Position (D2), and FAC-Neutral Test (D5).

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Multiple primary and secondary hydrology indicators present.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL19

Note: if a more detailed site description is necessary, provide detail here: Forested wetland area

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	40	FACU	Herbaceous
2.	*Ribwort Plantain (Plantago lanceolata)*	20	FACU	Herbaceous
3.	*Tall Blue Lettuce (Lactuca biennis)*	20	FAC	Herbaceous
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 25%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: Upland

SOILS

Series/Phase: HumAt: Humaquepts, 0 to 3 percent slopes, frequently flooded Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-7" 10YR 2/2, sandy loam; 7-18" 10YR 4/1, sandy loam

Mottle Colors: 7-18" 2.5Y 5/4

Other hydric soil indicators: Sandy Redox (S5)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: This hydric soil includes sandy characteristics that qualify as hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 3-inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: Saturation present to 8 inches.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Multiple primary and secondary hydrology indicators present within this PFO wetland.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL19

Note: if a more detailed site description is necessary, provide detail here: Forested wetland area

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Sweetgum (Liquidambar styraciflua)*	20	FAC	Tree
2.	*Red Maple (Acer rubrum)*	20	FAC	Tree
3.	*Sweet Pepperbush (Clethra sp.)*	30	FACW	Shrub/Scrub
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are either FAC or FACW.

SOILS

Series/Phase: HumAt: Humaquepts, 0 to 3 percent slopes, frequently flooded Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-11" 10YR 2/1, silt loam with cobbles; 11-18" 10YR 4/1, sand

Mottle Colors: 11-18" 2.5Y 5/4

Other hydric soil indicators: Sandy Redox (S5)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: This hydric soil includes sandy characteristics that qualify as hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 3-inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: Saturation present to 8 inches.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Multiple primary and secondary hydrology indicators present within this PFO wetland.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL20

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 3/3, loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL20

Note: if a more detailed site description is necessary, provide detail here: Click or tap here to enter text.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Sweetgum (Liquidambar styraciflua)*	30	FAC	Tree
2.	*Arrowwood Viburnum (Vibrumun dentatum)*	10	FAC	Shrub/Scrub
3.	*Virginia Bugleweed (Lycopus sherardii)*	15	OBL	Herbaceous
4.	*Common Reed (Phragmites australis)*	15	FACW	Herbaceous
5.	*Marsh Fern (Thelypteris palustris)*	10	FACW	Herbaceous
6.	*Soft Rush (Juncus effusus)*	10	OBL	Herbaceous
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are either FAC, FACW, or OBL.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☒ No ☐ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☒ No ☐

Matrix Color: 0-18" N2.5, muck Mottle Colors: None

Other hydric soil indicators: Black Histic (A3)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: This hydric soil includes appropriate matrix color and mucky texture to qualify as hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 3-inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 0-inches

List of other field evidence of surface inundation or soil saturation: Drainage Patterns (B10), Dry-Season Water Table (C2), Geomorphic Position (D2), and FAC-Neutral Test (D5).

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Multiple primary and secondary hydrology indicators present within this PFO wetland.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL21

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 3/3, sandy loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/08/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL21

Note: if a more detailed site description is necessary, provide detail here: Forested wetland area

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Sweetgum (Liquidambar styraciflua)*	20	FAC	Tree
2.	*Red Maple (Acer rubrum)*	15	FAC	Tree
3.	Black Gum (*Nyssa sylvatica)*	10	FAC	Tree
4.	*Sweet Pepperbush (Clethra sp.)*	20	FACW	Shrub/Scrub
5.	*Green Briar (Smilax rotundifolia)*	10	FAC	Herbaceous
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are either FAC or FACW.

SOILS

Series/Phase: LakB: Lakehurst sand, 0 to 5 percent slopes Subgroup: Lakehurst

Is the soil on the hydric soils list? Yes ☐ No ☒ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-4" 2.5Y 2.5/1, silty sand; 4-18" 2.5Y 5/3 sand

Mottle Colors: None

Other hydric soil indicators: Problematic sandy soils

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: This hydric soil includes sandy characteristics that qualify as hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: Saturation present to 8 inches.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: One primary hydrology indicator present for this wetland.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/10/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL22

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 3/3, loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/10/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL22

Note: if a more detailed site description is necessary, provide detail here: Forested wetland area

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Black Gum (Nyssa sylvatica)*	30	FAC	Tree
2.	*High-Bush Blueberry (Vaccinium corymbosum)*	80	FACW	Shrub/Scrub
3.	*Sweet Pepperbush (Clethra alnifolia)*	15	FACW	Shrub/Scrub
4.	*Green Briar (Smilax rotundifolia)*	30	FAC	Herbaceous
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are either FAC or FACW.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐ Gleyed? Yes ☐ No ☒

Matrix Color: 0-5" 2.5Y 2.5/1, silty sand; 5-18" 2.5Y 3/1, sand Mottle Colors: 2.5Y 2.5/1

Other hydric soil indicators: Problematic sandy soils

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: This hydric soil includes sandy characteristics that qualify as hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 2 inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 2 inches

List of other field evidence of surface inundation or soil saturation: Water-Stained Leaves (B9), Drainage Patterns (B10, Geomorphic Position (D2), and FAC-Neutral Test (D5).

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Three primary hydrology indicators and three secondary indicators present for this wetland.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/10/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL23

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 3/3, sandy loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/10/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL23

Note: if a more detailed site description is necessary, provide detail here: Depressional floodplain area associated with perennial stream. PSS wetland.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Red Maple (Acer rubrum)*	30	FAC	Tree
2.	*Black Willow (Salix nigra)*	20	OBL	Shrub/Scrub
3.	*Sweetgum (Liquidambar styraciflua)*	10	FAC	Shrub/Scrub
4.	*Sweetbay Magnolia (Magnolia virginiana)*	5	FACW	Shrub/Scrub
5.	*Sensitive Fern (Onoclea sensibilis)*	5	FACW	Herbaceous
6.	*Black Elderberry (Sambucus nigra)*	5	FACW	Herbaceous
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are FAC, FACW, or OBL.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-4" 2.5Y 3/1, sandy silt; 4-18" 10YR 2/1, mucky mineral

Mottle Colors: None

Other hydric soil indicators: 5cm mucky mineral (A7)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Both colors and texture qualify this soil to be hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 6 inches

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 4 inches

List of other field evidence of surface inundation or soil saturation: Water-stained leaves, drainage patterns, dry-season water table, geomorphic position, FAC-Neutral test

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Four primary and four secondary indicators of hydrology were observed at this location.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/10/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL24

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: BerAt: Berryland sand, 0 to 2 percent slopes, frequently flooded Subgroup: Berryland

Is the soil on the hydric soils list? Yes ☐ No ☒ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 4/4, loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/10/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL24

Note: if a more detailed site description is necessary, provide detail here: Depressional floodplain area associated with perennial stream. PSS wetland.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Black Gum (Nyssa sylvatica)*	30	FAC	Tree
2.	Sweet Pepperbush (Clethra alnifolia)	20	FACW	Shrub/Scrub
3.	*Sensitive Fern (Onoclea sensibilis)*	15	FACW	Herbaceous
4.	*Green Briar (Smilax rotundifolia)*	10	FAC	Herbaceous
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are FAC or FACW.

SOILS

Series/Phase: BerAt: Berryland sand, 0 to 2 percent slopes, frequently flooded Subgroup: Berryland

Is the soil on the hydric soils list? Yes ☐ No ☒ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☒ No ☐

Matrix Color: 0-4" 2.5Y 3/2, loamy sand; 4-8" 2.5Y 3/2, sandy loam; 8-18" N2.5, mucky mineral

Mottle Colors: None

Other hydric soil indicators: 5cm mucky mineral (A7)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Both colors and texture qualify this soil to be hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: Drainage patterns, geomorphic position, FAC-Neutral test

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: One primary and three secondary indicators of hydrology were observed at this location.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/10/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: UL25

Note: if a more detailed site description is necessary, provide detail here: Upland area on the side of a county highway

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Kentucky Bluegrass (Poa pratensis)*	80	FACU	Herbaceous
2.	*Red Fescue (Festuca rubra)*	20	FACU	Herbaceous
3.	Species Name	% Cover	STATUS	Stratum
4.	Species Name	% Cover	STATUS	Stratum
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 0%

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale: All species present are FACU.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-18" 10YR 4/4, loam

Mottle Colors: None

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes ☐ No ☒

Rationale: This is a characteristic upland soil without any colors or hydric indicators.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☐ No ☒

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: None

Is the wetland hydrology criterion met? Yes ☐ No ☒

Rationale: No primary or secondary wetland hydrology indicators exist.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, SMB Date: 12/10/2020

Project/Site: Atlantic Shores State: NJ County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: WL25

Note: if a more detailed site description is necessary, provide detail here: Depressional floodplain area associated with perennial stream. PFO wetland.

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain) Click or tap here to enter text.

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes☐ No☒ (If yes, explain) Click or tap here to enter text.

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	*Red Maple (Acer ruburm)*	30	FAC	Tree
2.	*Swamp White Oak (Quercus bicolor)*	15	FACW	Tree
3.	*Black Gum (Nyssa sylvatica)*	10	FAC	Tree
4.	*Sweet Pepperbush (Clethra alnifolia)*	80	FACW	Shrub/Scrub
5.	Species Name	% Cover	STATUS	Stratum
6.	Species Name	% Cover	STATUS	Stratum
7.	Species Name	% Cover	STATUS	Stratum
8.	Species Name	% Cover	STATUS	Stratum
9.	Species Name	% Cover	STATUS	Stratum
10.	Species Name	% Cover	STATUS	Stratum
11.	Species Name	% Cover	STATUS	Stratum
12.	Species Name	% Cover	STATUS	Stratum
13.	Species Name	% Cover	STATUS	Stratum
14.	Species Name	% Cover	STATUS	Stratum
15.	Species Name	% Cover	STATUS	Stratum

Percent of Dominant Species that are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: All species present are FAC or FACW.

SOILS

Series/Phase: AtsAO: Atsion sand, 0 to 2 percent slopes Subgroup: Atsion

Is the soil on the hydric soils list? Yes ☒ No ☐ Undetermined ☐

Is the soil a Histosol? Yes ☐ No ☒ Histic epidedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☐ No ☒ Gleyed? Yes ☐ No ☒

Matrix Color: 0-2" 2.5Y 3/2, coarse sand; 2-5" 10YR 2/2, silty sand; 5-10" 10YR 3/1, silty sand; and 10-18" 2.5Y 2.5/1, clayey sand

Mottle Colors: None

Other hydric soil indicators: Thick Dark Surface (A12)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Both colors and texture qualify this soil to be hydric.

HYDROLOGY

Is the ground surface inundated? Yes ☐ No ☒ Surface water depth: None

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: None

List of other field evidence of surface inundation or soil saturation: Geomorphic position, FAC-Neutral test

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: One primary and two secondary indicators of hydrology were observed at this location.

EDR Stream Determination Data Form

Project Name: Larabee Wetland Delineation Project Number: 20043

Survey Date: 6/25-6/26/2020

Evaluators: Matt Spadoni, Jacqueline McMillen

Stream ID: Watercourse 1 Data Point ID: WC1

Town: Click or tap here to enter text. County: Monmouth State: New Jersey

Latitude: 40.131417604 Longitude: -74.0714671556

Stream ID: Judas Creek

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: Wetland and Pedestrian bike path

Ecological Communities: Click or tap here to enter text.

Hydrologic Characteristics

Perceptible Flow? Yes ☒ No ☐

Flow Regime: R1-Tidal ☐ R2-Lower Perennial ☐
R3-Upper Perennial ☐ R4-Intermittent ☒
R5-Unknown Perennial ☐ R6-Ephemeral ☐

Flow Direction: west to east

Surface Water Present: Yes ☒ No ☐

Surface Water Depth at Thalweg: 2”

Wetted (Stream) Width: 3’

Geomorphologic Characteristics

Gradient: Gentle (0-5 %) ☒ Moderate (6-11 %) ☐ Steep (>12 %) ☐

Substrate: Silt/Clay (<0.062 mm) ☒ Sand (0.062–2 mm) ☒ Gravel (2-64 mm) ☒
Cobble (64-256 mm) ☐ Boulder (256-4096 mm) ☐ Bedrock (>4096 mm) ☐

Bankful Width: 6.5’

Bank Height: 1’

Stream Conditions

Undercut Banks: Yes☐ No☒ Description: Click or tap here to enter text.

Overhanging Vegetation: Yes☒ No☐ Description: Click or tap here to enter text.

Deep Pools Present: Yes☐ No☒ Description: Click or tap here to enter text.

Coarse Woody Debris: Yes☐ No☒ Description:

Channel Alteration: Channelization ☒ Channel Armoring ☐ Impoundment ☐ Other: Click or tap here to enter text.

Is the stream a Drainage Ditch: Yes ☐ No ☒

Additional Notes

Click or tap here to enter text..

EDR Stream Determination Data Form

Project Name: Larabee Wetland Delineation Project Number: 20043

Survey Date: 6/25-6/26/2020

Evaluators: Matt Spadoni, Jacqueline McMillen

Stream ID: Watercourse 2 Data Point ID: WC2

Town: Click or tap here to enter text. County: Monmouth State: New Jersey

Latitude: 40.1463361041 Longitude: -74.1075399039

Stream ID: Click or tap here to enter text.

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: forested, pedestrian bike path, steep slope from bike path to stream

Ecological Communities: Click or tap here to enter text.

Hydrologic Characteristics

Perceptible Flow? Yes ☒ No ☐

Flow Regime: R1-Tidal ☐ R2-Lower Perennial ☐
R3-Upper Perennial ☒ R4-Intermittent ☐
R5-Unknown Perennial ☐ R6-Ephemeral ☐

Flow Direction: north to south

Surface Water Present: Yes ☒ No ☐

Surface Water Depth at Thalweg: 6”

Wetted (Stream) Width: 3’

Geomorphologic Characteristics

Gradient: Gentle (0-5 %) ☒ Moderate (6-11 %) ☐ Steep (>12 %) ☐

Substrate: Silt/Clay (<0.062 mm) ☒ Sand (0.062–2 mm) ☒ Gravel (2-64 mm) ☐
Cobble (64-256 mm) ☐ Boulder (256-4096 mm) ☐ Bedrock (>4096 mm) ☐

Bankful Width: 4’

Bank Height: 2’

Stream Conditions

Undercut Banks: Yes☐ No☒ Description: Click or tap here to enter text.

Overhanging Vegetation: Yes☒ No☐ Description: Click or tap here to enter text.

Deep Pools Present: Yes☐ No☒ Description: Click or tap here to enter text.

Coarse Woody Debris: Yes☒ No☐ Description:

Channel Alteration: Channelization ☒ Channel Armoring ☐ Impoundment ☐ Other: Click or tap here to enter text.

Is the stream a Drainage Ditch: Yes ☐ No ☒

Additional Notes

Stream that drains large wetland pond along pedestrian bike path. Flow from north to south crossing under bike path.

20182 - Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125531
Survey Date	12/07/2020
User	Heather Berry
Town/County/State	Township of Wall/Monmouth/New Jersey
Investigator(s)	HB SM
Stream Delineation ID	WC3
Latitude, Longitude	
Latitude	40.15708274
Longitude	-74.1187992
Accuracy	3.94 m
Current Precipitation	None
Precipitation in Past 48 Hours	Heavy Rain, Rain

General Characteristics

NYSDEC Mapped Stream	
Drainage Ditch	Yes
Surface Water Depth at Thalweg (Inches)	5
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	3

Geomorphology

Continuity of channel bed and bank	Moderate (2)
Sinuosity of channel along thalweg	Weak (1)
In Channel Structures	Absent (0)
Particle Size of Stream Substrate	Absent (0)
Active/Relic Floodplain	Absent (0)
Depositional Bars or Benches	Weak (1)
Recent Alluvial Deposits	Absent (0)
Are Headcuts present	Absent (0)
Grade Control	Absent (0)
Natural Valley	Absent (0)
Second or Greater Order Channel	No (0)

Hydrology

Presence of Baseflow	Moderate (2)
Iron Oxidizing Bacteria	Weak (1)
Leaf Litter	Weak (1)
Sediment on Plants or Debris	Weak (0.5)
Organic Debris Lines or Piles	Absent (0)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Absent (0)
Aquatic Mollusks	Absent (0)
Fish	Absent (0)
Crayfish	Absent (0)
Amphibians	Weak (0.5)
Algae	Weak (0.5)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	19.25
Stream Determination	Intermittent (≥19)

Photos and Notes

Photo up and downstream

Notes

20182 - Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125530
Survey Date	12/07/2020
User	Heather Berry
Town/County/State	Township of Wall/Monmouth/NJ
Investigator(s)	HB SMB
Stream Delineation ID	WC4
Latitude, Longitude	
Latitude	40.15751812
Longitude	-74.11945334
Accuracy	5.94 m
Current Precipitation	None
Precipitation in Past 48 Hours	Heavy Rain, Rain

General Characteristics

NYSDEC Mapped Stream	
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	8
Stream Gradient	Gentle (0-5%)
Substrate	Gravel, Sand (Gritty feel)
Range of Bankfull width for stream reach	8

Geomorphology

Continuity of channel bed and bank	Moderate (2)
Sinuosity of channel along thalweg	Moderate (2)
In Channel Structures	Weak (1)
Particle Size of Stream Substrate	Moderate (2)
Active/Relic Floodplain	Moderate (2)
Depositional Bars or Benches	Absent (0)
Recent Alluvial Deposits	Weak (1)
Are Headcuts present	Weak (1)
Grade Control	Weak (0.5)
Natural Valley	Absent (0)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Moderate (2)
Leaf Litter	Weak (1)
Sediment on Plants or Debris	Absent (0)
Organic Debris Lines or Piles	Strong (1.5)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Moderate (1)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Absent (0)
Aquatic Mollusks	Absent (0)
Fish	Absent (0)
Crayfish	Absent (0)
Amphibians	Absent (0)
Algae	Weak (0.5)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	30.25
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

20182 - Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125525
Survey Date	12/07/2020
User	Heather Berry
Town/County/State	Township of Wall/Monmouth/NJ
Investigator(s)	HB SMB
Stream Delineation ID	WC5
Latitude, Longitude	
Latitude	40.15947999
Longitude	-74.12491555
Accuracy	5.23 m
Current Precipitation	None
Precipitation in Past 48 Hours	Heavy Rain, Rain

General Characteristics

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	24
Stream Gradient	Moderate (6-11%)
Substrate	Gravel, Sand (Gritty feel)
Range of Bankfull width for stream reach	30

Geomorphology

Continuity of channel bed and bank	Strong (3)
Sinuosity of channel along thalweg	Weak (1)
In Channel Structures	Moderate (2)
Particle Size of Stream Substrate	Weak (1)
Active/Relic Floodplain	Moderate (2)
Depositional Bars or Benches	Moderate (2)
Recent Alluvial Deposits	Moderate (2)

Are Headcuts present	Moderate (2)
Grade Control	Absent (0)
Natural Valley	Weak (0.5)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Moderate (2)
Iron Oxidizing Bacteria	Absent (0)
Leaf Litter	Strong (0)
Sediment on Plants or Debris	Weak (0.5)
Organic Debris Lines or Piles	Weak (0.5)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Weak (1)
Aquatic Mollusks	Weak (1)
Fish	Weak (0.5)
Crayfish	Absent (0)
Amphibians	Absent (0)
Algae	Weak (0.5)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	35.25
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

EDR Stream Determination Data Form

Project Name: Larabee Wetland Delineation Project Number: 20043

Survey Date: 6/25-6/26/2020

Evaluators: Matt Spadoni, Jacqueline McMillen

Stream ID: Watercourse 6 Data Point ID: WC 6

Town: Click or tap here to enter text. County: Monmouth State: New Jersey

Latitude: 40.1637810855 Longitude: -74.1391353564

Stream ID: Click or tap here to enter text.

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: Wetlands, upland, and channelized through a pipe under roadway

Ecological Communities: Click or tap here to enter text.

Hydrologic Characteristics

Perceptible Flow? Yes ☒ No ☐

Flow Regime: R1-Tidal ☐ R2-Lower Perennial ☐
R3-Upper Perennial ☐ R4-Intermittent ☐
R5-Unknown Perennial ☒ R6-Ephemeral ☐

Flow Direction: south to north

Surface Water Present: Yes ☒ No ☐

Surface Water Depth at Thalweg: 0.5”

Wetted (Stream) Width: 1’

Geomorphologic Characteristics

Gradient: Gentle (0-5 %) ☒ Moderate (6-11 %) ☐ Steep (>12 %) ☐

Substrate: Silt/Clay (<0.062 mm) ☒ Sand (0.062–2 mm) ☒ Gravel (2-64 mm) ☒
Cobble (64-256 mm) ☐ Boulder (256-4096 mm) ☐ Bedrock (>4096 mm) ☐

Bankful Width: 3’

Bank Height: 0.5’

Stream Conditions

Undercut Banks: Yes☐ No☒ Description: Click or tap here to enter text.

Overhanging Vegetation: Yes☒ No☐ Description: Click or tap here to enter text.

Deep Pools Present: Yes☐ No☒ Description: Click or tap here to enter text.

Coarse Woody Debris: Yes☒ No☐ Description:

Channel Alteration: Channelization ☐ Channel Armoring ☐ Impoundment ☐ Other: Click or tap here to enter text.

Is the stream a Drainage Ditch: Yes ☐ No ☒

Additional Notes

Stream that flows under roadway and feeds wetlands.

EDR Stream Determination Data Form

Project Name: Larabee Wetland Delineation Project Number: 20043

Survey Date: 6/25-6/26/2020

Evaluators: Matt Spadoni, Jacqueline McMillen

Stream ID: Watercourse 7 Data Point ID: WC7

Town: Click or tap here to enter text. County: Monmouth State: New Jersey

Latitude: 40.1635501859 Longitude: -74.1435217442

Stream ID: Click or tap here to enter text.

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: walking path, concrete, upland

Ecological Communities: Click or tap here to enter text.

Hydrologic Characteristics

Perceptible Flow? Yes ☒ No ☐

Flow Regime: R1-Tidal ☐ R2-Lower Perennial ☒
R3-Upper Perennial ☐ R4-Intermittent ☐
R5-Unknown Perennial ☐ R6-Ephemeral ☐

Flow Direction: north to south

Surface Water Present: Yes ☒ No ☐

Surface Water Depth at Thalweg: 1"+

Wetted (Stream) Width: 10'

Geomorphologic Characteristics

Gradient: Gentle (0-5 %) ☒ Moderate (6-11 %) ☐ Steep (>12 %) ☐

Substrate: Silt/Clay (<0.062 mm) ☒ Sand (0.062–2 mm) ☐ Gravel (2-64 mm) ☐
Cobble (64-256 mm) ☐ Boulder (256-4096 mm) ☐ Bedrock (>4096 mm) ☐

Bankful Width: 13'

Bank Height: 5'+

Stream Conditions

Undercut Banks: Yes☐ No☒ Description: Click or tap here to enter text.

Overhanging Vegetation: Yes☒ No☐ Description: Click or tap here to enter text.

Deep Pools Present: Yes☒ No☐ Description: Click or tap here to enter text.

Coarse Woody Debris: Yes☒ No☐ Description:

Channel Alteration: Channelization ☒ Channel Armoring ☒ Impoundment ☐ Other: Click or tap here to enter text.

Is the stream a Drainage Ditch: Yes ☐ No ☒

Additional Notes

Channelized stream under I-195.

EDR Stream Determination Data Form

Project Name: Larabee Wetland Delineation Project Number: 20043

Survey Date: 6/25-6/26/2020

Evaluators: Matt Spadoni, Jacqueline McMillen

Stream ID: Watercourse 8 Data Point ID: WC8

Town: Click or tap here to enter text. County: Monmouth State: New Jersey

Latitude: 40.1629472322 Longitude: -74.1467060503

Stream ID: Click or tap here to enter text.

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: upland

Ecological Communities: Click or tap here to enter text.

Hydrologic Characteristics

Perceptible Flow? Yes ☒ No ☐

Flow Regime: R1-Tidal ☐ R2-Lower Perennial ☐
R3-Upper Perennial ☐ R4-Intermittent ☐
R5-Unknown Perennial ☐ R6-Ephemeral ☒

Flow Direction: north to south

Surface Water Present: Yes ☒ No ☐

Surface Water Depth at Thalweg: 2”

Wetted (Stream) Width: 3’

Geomorphologic Characteristics

Gradient: Gentle (0-5 %) ☒ Moderate (6-11 %) ☐ Steep (>12 %) ☐

Substrate: Silt/Clay (<0.062 mm) ☒ Sand (0.062–2 mm) ☒ Gravel (2-64 mm) ☐
Cobble (64-256 mm) ☐ Boulder (256-4096 mm) ☐ Bedrock (>4096 mm) ☐

Bankful Width: 6’

Bank Height: 0.5’

Stream Conditions

Undercut Banks: Yes☐ No☒ Description: Click or tap here to enter text.

Overhanging Vegetation: Yes☒ No☐ Description: Click or tap here to enter text.

Deep Pools Present: Yes☐ No☒ Description: Click or tap here to enter text.

Coarse Woody Debris: Yes☐ No☒ Description:

Channel Alteration: Channelization ☒ Channel Armoring ☐ Impoundment ☐ Other: Click or tap here to enter text.

Is the stream a Drainage Ditch: Yes ☐ No ☒

Additional Notes

Spring seep at base of slope from highway that turns into a ephemeral stream.

EDR Stream Determination Data Form

Project Name: Larabee Wetland Delineation Project Number: 20043

Survey Date: 6/25-6/26/2020

Evaluators: Matt Spadoni, Jacqueline McMillen

Stream ID: Watercourse 9 Data Point ID: WC9

Town: Click or tap here to enter text. County: Monmouth State: New Jersey

Latitude: 40.1630513892 Longitude: -74.1474496493

Stream ID: Mingamahone Brook

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: upland, concrete

Ecological Communities: Click or tap here to enter text.

Hydrologic Characteristics

Perceptible Flow? Yes ☒ No ☐

Flow Regime: R1-Tidal ☐ R2-Lower Perennial ☒
R3-Upper Perennial ☐ R4-Intermittent ☐
R5-Unknown Perennial ☐ R6-Ephemeral ☐

Flow Direction: north to south

Surface Water Present: Yes ☒ No ☐

Surface Water Depth at Thalweg: 1"+

Wetted (Stream) Width: 25'

Geomorphologic Characteristics

Gradient: Gentle (0-5 %) ☒ Moderate (6-11 %) ☐ Steep (>12 %) ☐

Substrate: Silt/Clay (<0.062 mm) ☒ Sand (0.062–2 mm) ☒ Gravel (2-64 mm) ☐
Cobble (64-256 mm) ☒ Boulder (256-4096 mm) ☐ Bedrock (>4096 mm) ☐

Bankful Width: 30

Bank Height: 5'+

Stream Conditions

Undercut Banks: Yes☒ No☐ Description: Click or tap here to enter text.

Overhanging Vegetation: Yes☒ No☐ Description: Click or tap here to enter text.

Deep Pools Present: Yes☒ No☐ Description: Click or tap here to enter text.

Coarse Woody Debris: Yes☒ No☐ Description:

Channel Alteration: Channelization ☒ Channel Armoring ☒ Impoundment ☐ Other: Click or tap here to enter text.

Is the stream a Drainage Ditch: Yes ☐ No ☒

Additional Notes

Flows under highway, heavily channelized and then becomes extremely sinuous, entire stream has very deep and steep banks.

EDR Stream Determination Data Form

Project Name: Larabee Wetland Delineation Project Number: 20043

Survey Date: 6/25-6/26/2020

Evaluators: Matt Spadoni, Jacqueline McMillen

Stream ID: Watercourse 10 Data Point ID: WC10

Town: Click or tap here to enter text. County: Monmouth State: New Jersey

Latitude: 40.1629444857 Longitude: -74.1479998296

Stream ID: UNT to Mingamahone Brook

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: upland, flows into wetland

Ecological Communities: Click or tap here to enter text.

Hydrologic Characteristics

Perceptible Flow? Yes ☒ No ☐

Flow Regime: R1-Tidal ☐ R2-Lower Perennial ☐
R3-Upper Perennial ☐ R4-Intermittent ☐
R5-Unknown Perennial ☐ R6-Ephemeral ☒

Flow Direction: west to east

Surface Water Present: Yes ☒ No ☐

Surface Water Depth at Thalweg: 1”

Wetted (Stream) Width: 1’

Geomorphologic Characteristics

Gradient: Gentle (0-5 %) ☒ Moderate (6-11 %) ☐ Steep (>12 %) ☐

Substrate: Silt/Clay (<0.062 mm) ☒ Sand (0.062–2 mm) ☒ Gravel (2-64 mm) ☒
Cobble (64-256 mm) ☐ Boulder (256-4096 mm) ☐ Bedrock (>4096 mm) ☐

Bankful Width: 1’

Bank Height: 0.25’

Stream Conditions

Undercut Banks: Yes☐ No☒ Description: Click or tap here to enter text.

Overhanging Vegetation: Yes☒ No☐ Description: Click or tap here to enter text.

Deep Pools Present: Yes☐ No☒ Description: Click or tap here to enter text.

Coarse Woody Debris: Yes☐ No☒ Description:

Channel Alteration: Channelization ☐ Channel Armoring ☐ Impoundment ☐ Other: Click or tap here to enter text.

Is the stream a Drainage Ditch: Yes ☐ No ☒

Additional Notes

Trib to Mingamahone Brook, flows into wetland 2 before feeding in to Mingmahone. Low flow along bottom of slope from highway, slight channel development.

20182 - Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125524
Survey Date	12/08/2020
User	Heather Berry
Town/County/State	Howell TWP/Monmouth/NJ
Investigator(s)	HB SMB
Stream Delineation ID	WC11
Latitude, Longitude	
Latitude	40.16144259
Longitude	-74.1539877
Accuracy	6.55 m
Current Precipitation	Snow
Precipitation in Past 48 Hours	Rain

General Characteristics

NYSDEC Mapped Stream	
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	48
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	30+

Geomorphology

Continuity of channel bed and bank	Moderate (2)
Sinuosity of channel along thalweg	Moderate (2)
In Channel Structures	Moderate (2)
Particle Size of Stream Substrate	Moderate (2)
Active/Relic Floodplain	Strong (3)
Depositional Bars or Benches	Moderate (2)
Recent Alluvial Deposits	Moderate (2)
Are Headcuts present	Absent (0)
Grade Control	Moderate (1)
Natural Valley	Absent (0)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Absent (0)
Leaf Litter	Moderate (0.5)
Sediment on Plants or Debris	Weak (0.5)
Organic Debris Lines or Piles	Absent (0)
Soil-based evidence of high water table	No (0)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Moderate (2)
Aquatic Mollusks	Moderate (2)
Fish	Moderate (1)
Crayfish	Moderate (1)
Amphibians	Moderate (1)
Algae	Moderate (1)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	35.25
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

20182 - Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125521
Survey Date	12/08/2020
User	Heather Berry
Town/County/State	Township of Howell NJ
Investigator(s)	HB SMB
Stream Delineation ID	WC12
Latitude, Longitude	
Latitude	40.15753467
Longitude	-74.15816608
Accuracy	5.88 m
Current Precipitation	None
Precipitation in Past 48 Hours	Rain

General Characteristics

NYSDEC Mapped Stream	
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	12
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	8

Geomorphology

Continuity of channel bed and bank	Strong (3)
Sinuosity of channel along thalweg	Weak (1)
In Channel Structures	Weak (1)
Particle Size of Stream Substrate	Weak (1)
Active/Relic Floodplain	Moderate (2)
Depositional Bars or Benches	Weak (1)
Recent Alluvial Deposits	Weak (1)
Are Headcuts present	Weak (1)
Grade Control	Moderate (1)
Natural Valley	Strong (1.5)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Moderate (2)
Leaf Litter	Moderate (0.5)
Sediment on Plants or Debris	Moderate (1)
Organic Debris Lines or Piles	Moderate (1)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Weak (1)
Aquatic Mollusks	Weak (1)
Fish	Moderate (1)
Crayfish	Weak (0.5)
Amphibians	Moderate (1)
Algae	Moderate (1)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	38.25
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

20182 - Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125518
Survey Date	12/08/2020
User	Heather Berry
Town/County/State	Township of Howell NJ
Investigator(s)	HB SMB
Stream Delineation ID	WC13
Latitude, Longitude	
Latitude	40.15203943
Longitude	-74.16312766
Accuracy	5.3 m
Current Precipitation	None
Precipitation in Past 48 Hours	Rain

General Characteristics

NYSDEC Mapped Stream	
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	6
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	15

Geomorphology

Continuity of channel bed and bank	Weak (1)
Sinuosity of channel along thalweg	Moderate (2)
In Channel Structures	Weak (1)
Particle Size of Stream Substrate	Weak (1)
Active/Relic Floodplain	Strong (3)
Depositional Bars or Benches	Moderate (2)
Recent Alluvial Deposits	Absent (0)
Are Headcuts present	Absent (0)
Grade Control	Weak (0.5)
Natural Valley	Weak (0.5)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Moderate (2)
Leaf Litter	Moderate (0.5)
Sediment on Plants or Debris	Weak (0.5)
Organic Debris Lines or Piles	Weak (0.5)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Moderate (2)
Aquatic Mollusks	Moderate (2)
Fish	Moderate (1)
Crayfish	Weak (0.5)
Amphibians	Moderate (1)
Algae	Weak (0.5)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	39.25
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

20182 - Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125515
Survey Date	12/08/2020
User	Heather Berry
Town/County/State	Township of Howell
Investigator(s)	HB SMB
Stream Delineation ID	WC14
Latitude, Longitude	
Latitude	40.14669101
Longitude	-74.16765074
Accuracy	4.95 m
Current Precipitation	None
Precipitation in Past 48 Hours	Rain

General Characteristics

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	24
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	15

Geomorphology

Continuity of channel bed and bank	Moderate (2)
Sinuosity of channel along thalweg	Moderate (2)
In Channel Structures	Absent (0)
Particle Size of Stream Substrate	Moderate (2)
Active/Relic Floodplain	Strong (3)
Depositional Bars or Benches	Moderate (2)
Recent Alluvial Deposits	Absent (0)
Are Headcuts present	Absent (0)
Grade Control	Weak (0.5)
Natural Valley	Moderate (1)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Weak (1)
Leaf Litter	Moderate (0.5)
Sediment on Plants or Debris	Moderate (1)
Organic Debris Lines or Piles	Moderate (1)
Soil-based evidence of high water table	No (0)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Moderate (2)
Aquatic Mollusks	Moderate (2)
Fish	Moderate (1)
Crayfish	Weak (0.5)
Amphibians	Moderate (1)
Algae	Weak (0.5)
Wetland Plants in Streambed	OBL (1.5)

Stream Type Determination

Total Score	37.5
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

20182 - Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125512
Survey Date	12/08/2020
User	Heather Berry
Town/County/State	Township of Howell
Investigator(s)	HB SMB
Stream Delineation ID	WC15
Latitude, Longitude	
Latitude	40.13833022
Longitude	-74.17529262
Accuracy	5.65 m
Current Precipitation	None
Precipitation in Past 48 Hours	Rain

General Characteristics

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	12
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel)
Range of Bankfull width for stream reach	15

Geomorphology

Continuity of channel bed and bank	Strong (3)
Sinuosity of channel along thalweg	Weak (1)
In Channel Structures	Weak (1)
Particle Size of Stream Substrate	Weak (1)
Active/Relic Floodplain	Strong (3)
Depositional Bars or Benches	Weak (1)
Recent Alluvial Deposits	Absent (0)
Are Headcuts present	Absent (0)
Grade Control	Absent (0)
Natural Valley	Weak (0.5)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Weak (1)
Leaf Litter	Moderate (0.5)
Sediment on Plants or Debris	Moderate (1)
Organic Debris Lines or Piles	Moderate (1)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Weak (2)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Moderate (2)
Aquatic Mollusks	Moderate (2)
Fish	Moderate (1)
Crayfish	Absent (0)
Amphibians	Moderate (1)
Algae	Weak (0.5)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	35.25
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

20043 Atlantic Shores Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125586
Survey Date	12/10/2020
User	Heather Berry
Town/County/State	Sea Girt/Monmouth/New Jersey
Investigator(s)	HB SM
Stream Delineation ID	WC16
Latitude, Longitude	
Latitude	40.13512097
Longitude	-74.178143
Accuracy	6.41 m
Current Precipitation	None
Precipitation in Past 48 Hours	Snow

General Characteristics

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	4
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	5

Geomorphology

Continuity of channel bed and bank	Strong (3)
Sinuosity of channel along thalweg	Moderate (2)
In Channel Structures	Absent (0)
Particle Size of Stream Substrate	Moderate (2)
Active/Relic Floodplain	Strong (3)
Depositional Bars or Benches	Moderate (2)
Recent Alluvial Deposits	Absent (0)
Are Headcuts present	Absent (0)
Grade Control	Absent (0)
Natural Valley	Absent (0)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Moderate (2)
Iron Oxidizing Bacteria	Absent (0)
Leaf Litter	Weak (1)
Sediment on Plants or Debris	Weak (0.5)
Organic Debris Lines or Piles	Weak (0.5)
Soil-based evidence of high water table	No (0)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Weak (2)
Aquatic Macroinvertebrates	Moderate (2)
Aquatic Mollusks	Moderate (2)
Fish	Moderate (1)
Crayfish	Absent (0)
Amphibians	Moderate (1)
Algae	Absent (0)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	30.25
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

20043 Atlantic Shores Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125587
Survey Date	12/10/2020
User	Heather Berry
Town/County/State	Sea Girt/Monmouth/New Jersey
Investigator(s)	HB SM
Stream Delineation ID	WC17
Latitude, Longitude	
Latitude	40.12792995
Longitude	-74.18451483
Accuracy	7.44 m
Current Precipitation	None
Precipitation in Past 48 Hours	Snow

General Characteristics

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	10
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	15

Geomorphology

Continuity of channel bed and bank	Weak (1)
Sinuosity of channel along thalweg	Weak (1)
In Channel Structures	Weak (1)
Particle Size of Stream Substrate	Moderate (2)
Active/Relic Floodplain	Moderate (2)
Depositional Bars or Benches	Weak (1)
Recent Alluvial Deposits	Absent (0)
Are Headcuts present	Absent (0)
Grade Control	Absent (0)
Natural Valley	Absent (0)
Second or Greater Order Channel	No (0)

Hydrology

Presence of Baseflow	Weak (1)
Iron Oxidizing Bacteria	Absent (0)
Leaf Litter	Absent (1.5)
Sediment on Plants or Debris	Moderate (1)
Organic Debris Lines or Piles	Moderate (1)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Strong (3)
Aquatic Mollusks	Weak (1)
Fish	Moderate (1)
Crayfish	Moderate (1)
Amphibians	Moderate (1)
Algae	Moderate (1)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	30.25
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes	wetland beyond stream feature.

20043 Atlantic Shores Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	128741
Survey Date	12/10/2020
User	Heather Berry
Town/County/State	Sea Girt/Monmouth/New Jersey
Investigator(s)	HB SM
Stream Delineation ID	WC18
Latitude, Longitude	
Latitude	40.125333
Longitude	-74.187329
Accuracy	m
Current Precipitation	None
Precipitation in Past 48 Hours	Rain

General Characteristics

NYSDEC Mapped Stream	
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	3
Stream Gradient	Gentle (0-5%)
Substrate	Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	5

Geomorphology

Continuity of channel bed and bank	Strong (3)
Sinuosity of channel along thalweg	Moderate (2)
In Channel Structures	Weak (1)
Particle Size of Stream Substrate	Weak (1)
Active/Relic Floodplain	Strong (3)
Depositional Bars or Benches	Weak (1)
Recent Alluvial Deposits	Weak (1)
Are Headcuts present	Absent (0)
Grade Control	Absent (0)
Natural Valley	Weak (0.5)
Second or Greater Order Channel	No (0)

Hydrology

Presence of Baseflow	Weak (1)
Iron Oxidizing Bacteria	Absent (0)
Leaf Litter	Moderate (0.5)
Sediment on Plants or Debris	Weak (0.5)
Organic Debris Lines or Piles	Weak (0.5)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Moderate (1)
Rooted Upland Plants in Streambed	Strong (0)
Aquatic Macroinvertebrates	Absent (0)
Aquatic Mollusks	Absent (0)
Fish	Absent (0)
Crayfish	Absent (0)
Amphibians	Absent (0)
Algae	Absent (0)
Wetland Plants in Streambed	Other (0)

Stream Type Determination

Total Score	18
Stream Determination	Intermittent (≥19)

Photos and Notes

Photo up and downstream

Notes

20043 Atlantic Shores Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125590
Survey Date	12/10/2020
User	Heather Berry
Town/County/State	Sea Girt/Monmouth/New Jersey
Investigator(s)	HB SM
Stream Delineation ID	WC19
Latitude, Longitude	
Latitude	40.12389394
Longitude	-74.18817077
Accuracy	4.02 m
Current Precipitation	None
Precipitation in Past 48 Hours	Snow

General Characteristics

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	24
Stream Gradient	Gentle (0-5%)
Substrate	Gravel, Sand (Gritty feel), Silt/Clay (No grit)
Range of Bankfull width for stream reach	40

Geomorphology

Continuity of channel bed and bank	Strong (3)
Sinuosity of channel along thalweg	Strong (3)
In Channel Structures	Moderate (2)
Particle Size of Stream Substrate	Moderate (2)
Active/Relic Floodplain	Strong (3)
Depositional Bars or Benches	Moderate (2)
Recent Alluvial Deposits	Absent (0)
Are Headcuts present	Absent (0)
Grade Control	Weak (0.5)
Natural Valley	Weak (0.5)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Weak (1)
Leaf Litter	Weak (1)
Sediment on Plants or Debris	Absent (0)
Organic Debris Lines or Piles	Strong (1.5)
Soil-based evidence of high water table	Yes (3)

Biology

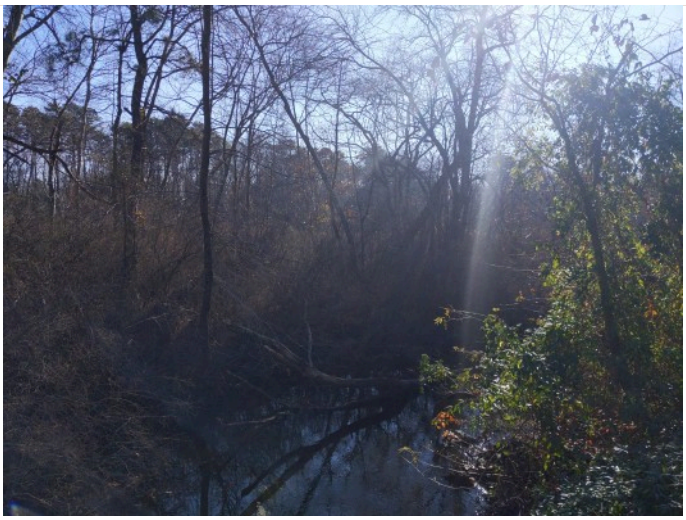
Fibrous Roots in Streambed	Moderate (1)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Moderate (2)
Aquatic Mollusks	Weak (1)
Fish	Moderate (1)
Crayfish	Absent (0)
Amphibians	Moderate (1)
Algae	Strong (1.5)
Wetland Plants in Streambed	OBL (1.5)

Stream Type Determination

Total Score	40.5
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream



Notes

20043 Atlantic Shores Stream Scoring Data Form 1

Project	20043 - Atlantic Shores
ID	125591
Survey Date	12/10/2020
User	Heather Berry
Town/County/State	Sea Girt/Monmouth/New Jersey
Investigator(s)	HB SM
Stream Delineation ID	WC20
Latitude, Longitude	
Latitude	40.11870505
Longitude	-74.19284781
Accuracy	6.46 m
Current Precipitation	None
Precipitation in Past 48 Hours	Snow

General Characteristics

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	12
Stream Gradient	Gentle (0-5%)
Substrate	Gravel, Sand (Gritty feel)
Range of Bankfull width for stream reach	10

Geomorphology

Continuity of channel bed and bank	Strong (3)
Sinuosity of channel along thalweg	Strong (3)
In Channel Structures	Moderate (2)
Particle Size of Stream Substrate	Moderate (2)
Active/Relic Floodplain	Moderate (2)
Depositional Bars or Benches	Moderate (2)
Recent Alluvial Deposits	Moderate (2)
Are Headcuts present	Absent (0)
Grade Control	Weak (0.5)
Natural Valley	Weak (0.5)
Second or Greater Order Channel	Yes (3)

Hydrology

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Moderate (2)
Leaf Litter	Moderate (0.5)
Sediment on Plants or Debris	Moderate (1)
Organic Debris Lines or Piles	Strong (1.5)
Soil-based evidence of high water table	Yes (3)

Biology

Fibrous Roots in Streambed	Weak (2)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Moderate (2)
Aquatic Mollusks	Moderate (2)
Fish	Moderate (1)
Crayfish	Absent (0)
Amphibians	Moderate (1)
Algae	Moderate (1)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	42.75
Stream Determination	Perennial (≥30)

Photos and Notes

Photo up and downstream

Notes

APPENDIX C

Photo Documentation

Photo 1

Location:
40.118978, -74.032386

Description:
Larrabee Landfall and Wetland 1 (PEM) in far background on Army National Guard Facility

Photo 2

Location:
40.131264, -74.071817

Description:
Facing West at Wetland 2 (PEM) and Watercourse 1

ATLANTIC SHORES offshore wind

Photo 3

Location:
40.146181, -74.107161

Description:
Facing East at Wetland 3 (POW)

Photo 4

Location:
40.146111, -74.107606

Description:
Facing West at Wetland 4 (PFO)

Photo 5

Location:
40.153153, -74.110383

Description:
Facing North at Wetland 5 (POW) north of County Route 524

Photo 6

Location:
40.153114, -74.11065

Description:
Facing East at Wetland 5 (PEM/PFO) south of County Route 524

Photo 7

Location:
40.156536, -74.117133

Description:
Facing South at Wetland 6 (PFO) north of County Route 524

Photo 8

Location:
40.156231, -74.117814

Description:
Facing North at Wetland 7 (PEM) south of County Route 524

Photo 9

Location:
40.1568, -74.118753

Description:
Facing Northwest at Wetland 8 (PFO)

Photo 10

Location:
40.157653, -74.119422

Description:
Facing East at Wetland 9 (PEM) and Watercourse 4 north of County Route 524

Photo 11

Location:
40.157292, -74.119636

Description:
Facing Southwest at Wetland 10 (PEM) and Watercourse 4 south of County Route 524

Photo 12

Location:
40.159981, -74.124519

Description:
Facing Southeast at Wetland 11 (POW/PEM)

Photo 13

Location:
40.159442, -74.124878

Description:
Facing Northeast at Watercourse 5 south of County Route 524

Photo 14

Location:
40.162525, -74.132347

Description:
Facing Northeast at Wetland 12 (PEM)

Photo 15

Location:
40.163642, -74.139406

Description:
Facing East at Wetland 13 (PFO) and Watercourse 6

Photo 16

Location:
40.163181, -74.144264

Description:
Facing Southeast at Wetland 14 (PFO)

Photo 17

Location:
40.162972, -74.147758

Description:
Facing West at Wetland 15 (PFO)

Photo 18

Location:
40.160706, -74.154961

Description:
Facing East at Wetland 16 (PFO) in floodplain of Manasquan River

Photo 19

Location:
40.157525, -74.158311

Description:
Facing Southwest at Wetland 17 (PSS)

Photo 20

Location:
40.152139, -74.163139

Description:
Facing Southwest at Wetland 18 (PEM/PSS)

Photo 21

Location:
40.146233, -74.168458

Description:
Facing East at Wetland 19 (PFO)

Photo 22

Location:
40.143908, -74.170189

Description:
Facing Southeast at Wetland 20 (PFO)

Photo 23

Location:
40.138383, -74.175217

Description:
Facing Southwest at Wetland 21 (PFO) and Watercourse 10

Photo 24

Location:
40.135086, -74.178353

Description:
Facing Northeast at Wetland 22 (PFO) west of County Route 547

Photo 25

Location:
40.128703, -74.184172

Description:
Facing West at Wetland 23 (PFO)

Photo 26

Location:
40.124181, -74.187875

Description:
Facing North at Wetland 24 (PFO)

Photo 27

Location:
40.118617, -74.192956

Description:
Facing East at Wetland 25 (PFO)

Photo 28

Location:
40.131217, -74.071572

Description:
Facing Southwest at Watercourse 1

Photo 29

Location:
40.146494, -74.107772

Description:
Facing Northwest at Watercourse 2

Photo 30

Location:
40.163967, -74.139114

Description:
Facing East at Watercourse 6

Photo 31

Location:
40.163667, -74.143683

Description:
Facing Southeast at Watercourse 7 under the I-195 Overpass

Photo 32

Location:
40.162944, -74.146697

Description:
Facing South at Watercourse 8

Photo 33

Location:
40.162819, -74.14775

Description:
Facing Northeast at Watercourse 9

Photo 34

Location:
40.162983, -74.148597

Description:
Facing East at Watercourse 10

Photo 35

Location:
40.161469, -74.154097

Description:
Facing West at Watercourse 11 (Manasquan River)

Photo 36

Location:
40.157578, -74.157936

Description:
Facing East at Watercourse 12

Photo 37

Location:
40.152019, -74.162894

Description:
Facing East at Watercourse 13

Photo 38

Location:
40.146717, -74.167686

Description:
Facing East at Watercourse 14

Photo 39

Location:
40.138383, -74.175217

Description:
Facing East at Watercourse 15

Photo 40

Location:
40.135078, -74.178161

Description:
Facing East at Watercourse 16

Photo 41

Location:
40.128342, -74.184242

Description:
Facing Southeast at Watercourse 17

Photo 42

Location:
40.123961, -74.188178

Description:
Facing Southeast at Watercourse 19

Photo 43

Location:
40.118728, -74.193061

Description:
Facing Northwest at Watercourse 20

Photo 44

Location:
40.141006, -74.172858

Description:
Representative view of forested uplands

Photo 45

Location:
40.155067, -74.114861

Description:
Representative view of roadside and open field uplands

APPENDIX D

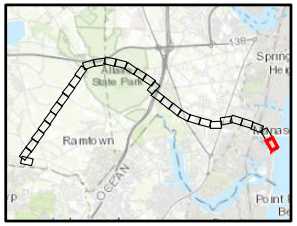
Field Delineated Wetlands and Streams Plans

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 1 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on March 8, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag

ATLANTIC SHORES offshore wind

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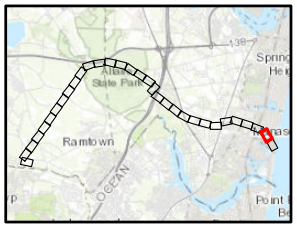
Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 2 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area

ATLANTIC SHORES offshore wind

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 3 of 32

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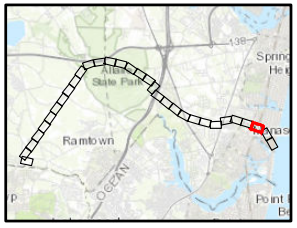

Onshore Route
Study Area

ATLANTIC SHORES offshore wind

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 4 of 32

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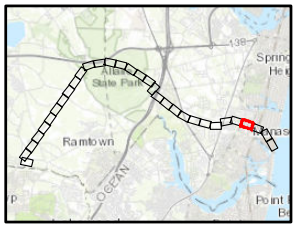

Onshore Route
Study Area

ATLANTIC SHORES offshore wind

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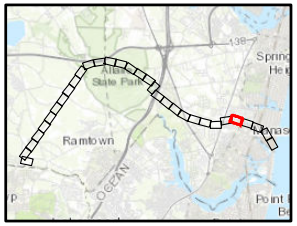
Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 5 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area

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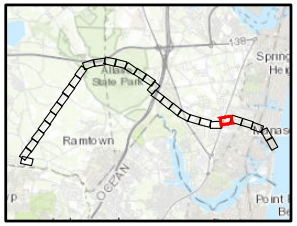
Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 6 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area

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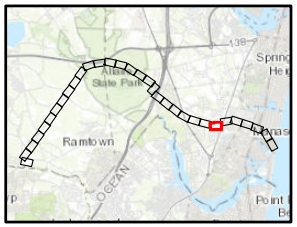
Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 7 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

ATLANTIC SHORES offshore wind

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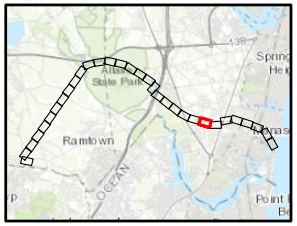
Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 8 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area

ATLANTIC SHORES offshore wind

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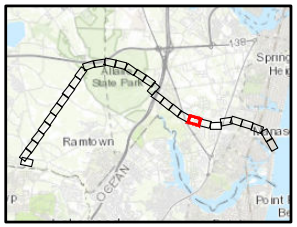
Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 9 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area

ATLANTIC SHORES offshore wind

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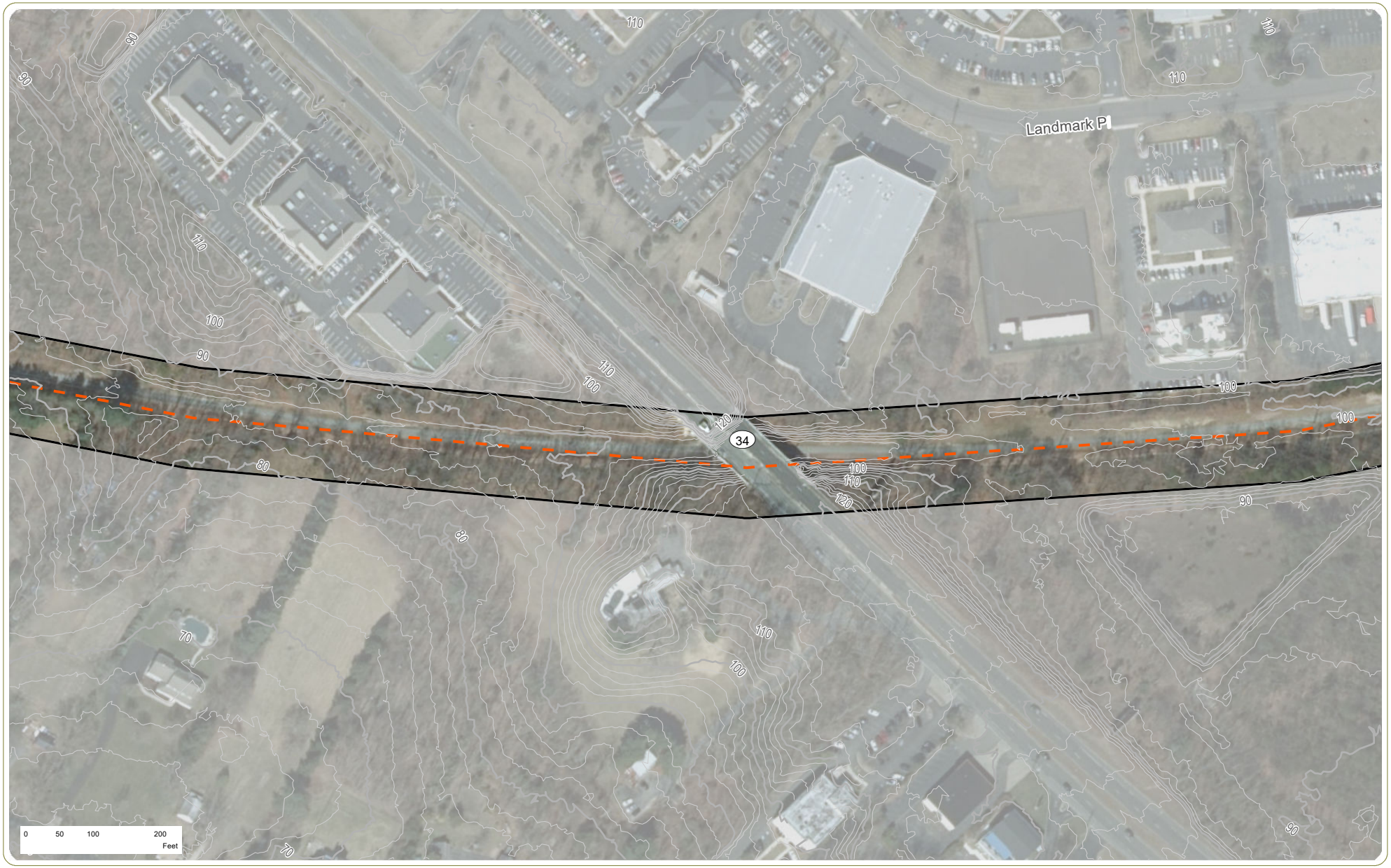
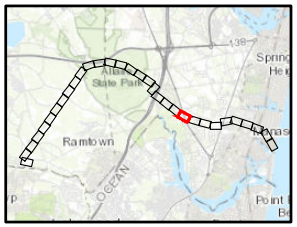


Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 10 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area

ATLANTIC SHORES offshore wind

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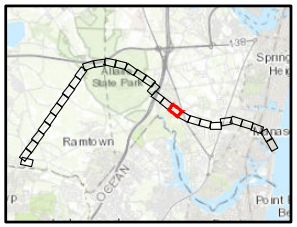
Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 11 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area

ATLANTIC SHORES offshore wind

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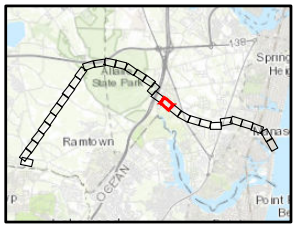
Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 12 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



Onshore Route
Study Area

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
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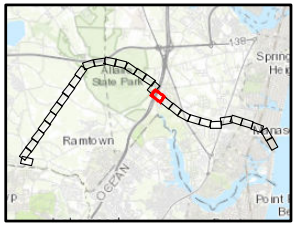

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
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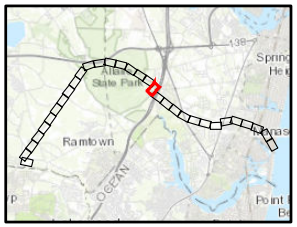

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
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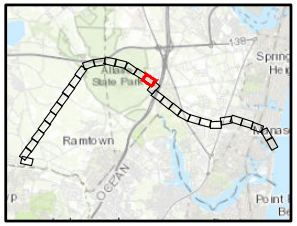

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 16 of 32

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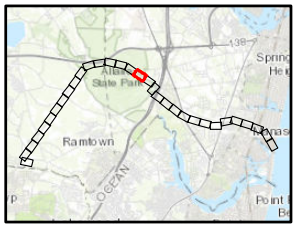

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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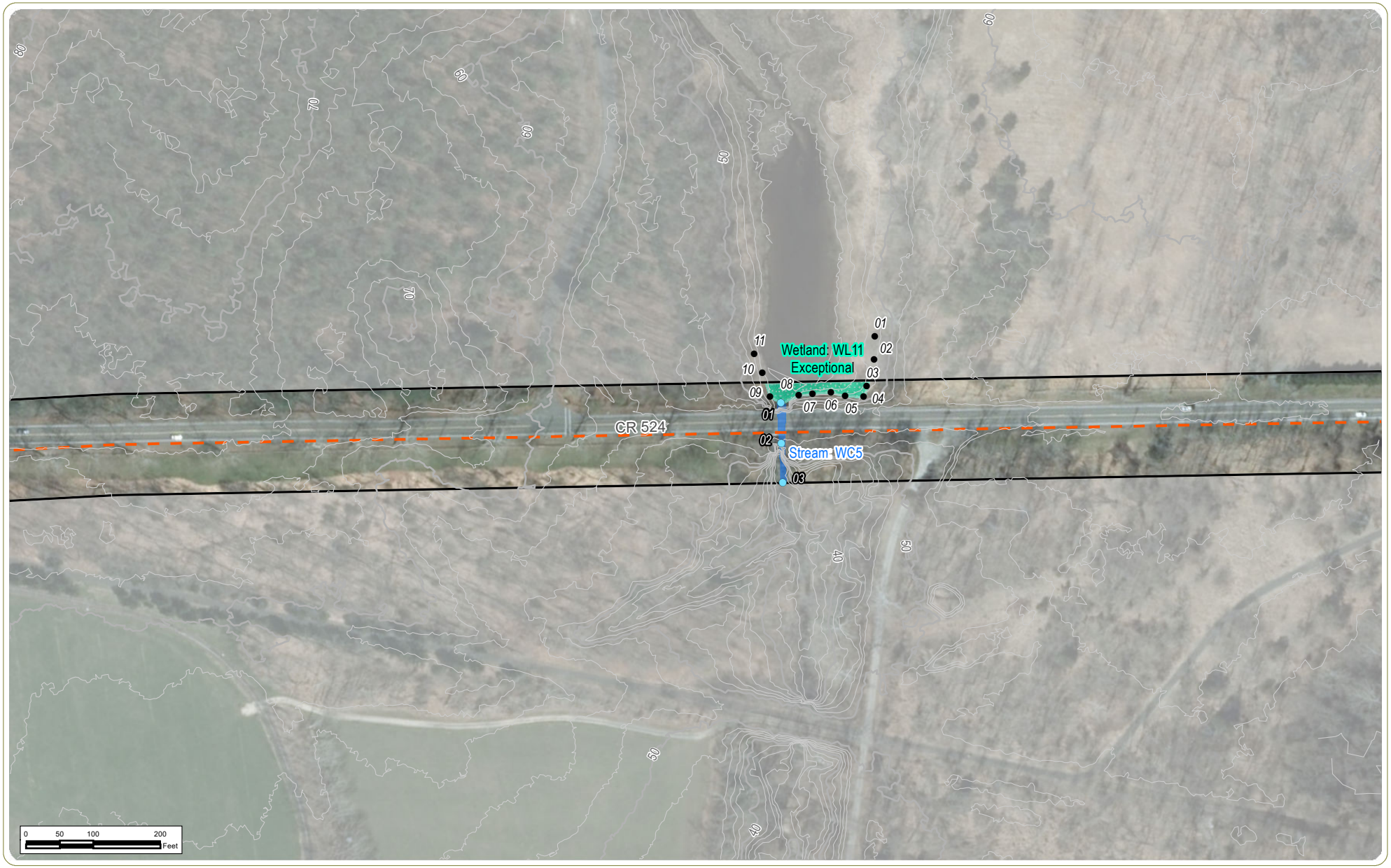

Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 17 of 32

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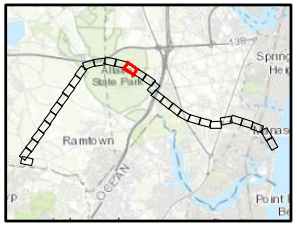

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
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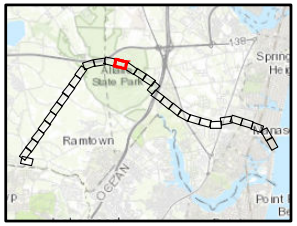

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 19 of 32

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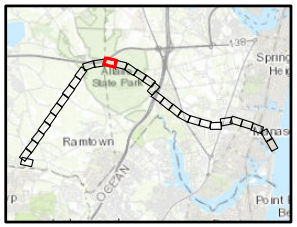

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 20 of 32

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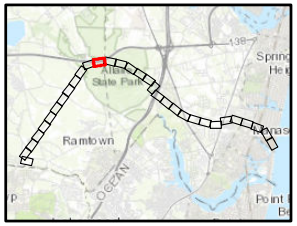

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
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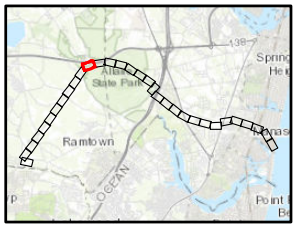

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
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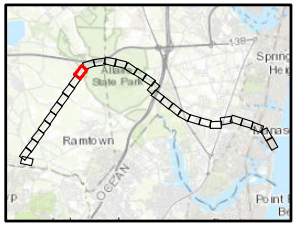

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 23 of 32

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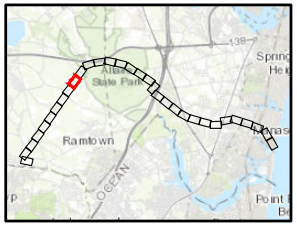

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
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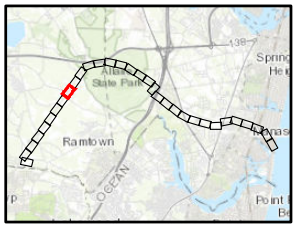

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag

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Insert Project Title

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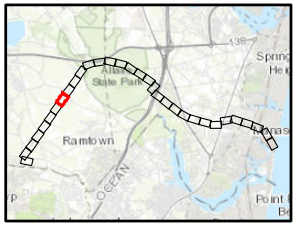
Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 25 of 32

Notes: 1. Basemap: NJ Office of GIS 2015 Natural Color Imagery **2.** This map was generated in ArcMap on January 21, 2021. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.



- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 26 of 32

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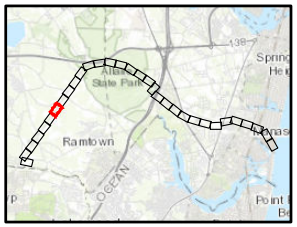

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 27 of 32

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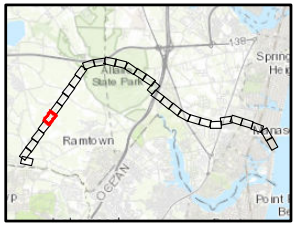

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 28 of 32

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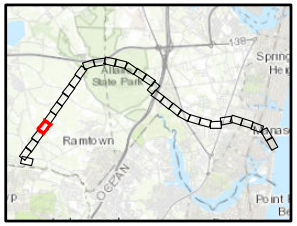

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 29 of 32

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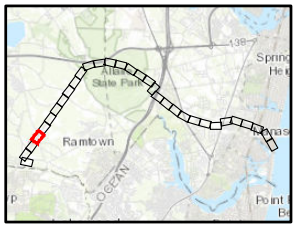

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 30 of 32

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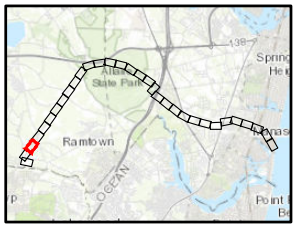

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 31 of 32

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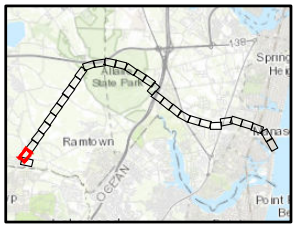

- Onshore Route
- Study Area
- Delineated Wetland
- Wetland Flag
- Delineated Stream
- Stream Flag

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Wetland and Stream Delineation Report
Atlantic Shores Offshore Wind – Larrabee Onshore Cable Route

Borough of Sea Girt, Township of Wall, and Township of Howell
Monmouth County, New Jersey

Field Delineated Wetland and Stream Plan
Sheet 32 of 32

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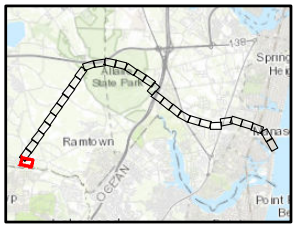

Onshore Route
Study Area

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