



Appendix II-D2

Wetland and Stream Delineation Report – Larrabee Study Area

May 2024

Wetland and Stream Delineation Report

Atlantic Shores Offshore Wind – Larrabee Study Area

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

Prepared for:



Atlantic Shores Offshore Wind, LLC

Dock 72

Brooklyn, NY 11205

Prepared by:



Environmental Design & Research, D.P.C.

217 Montgomery Street, Suite 1100

Syracuse, New York 13202

www.edrdpc.com

November 2021

Revised: December 2021, August 2022 and March 2023

TABLE OF CONTENTS

1.0	Introduction.....	1
1.1	Regulatory Framework.....	2
1.2	Purpose.....	3
2.0	General Site conditions.....	5
2.1	Physiography and Soils.....	5
2.2	Hydrology	7
2.3	Federal- and State-Mapped Wetlands and Streams.....	8
2.4	Mapped Floodplains.....	8
2.5	Vegetation	8
3.0	Field Investigations.....	11
3.1	Methodology	11
4.0	Results	14
4.1.1	Wetlands.....	19
4.1.2	Surface Waters	25
5.0	Conclusions	29
6.0	References.....	30

LIST OF TABLES

Table 1.	Study Area Soils	6
Table 2.	Vegetation/Land Cover Within the Study Area.....	9
Table 3.	Delineated Wetlands and Streams	15

LIST OF APPENDICES

Appendix A.	Figures
Figure 1.	USGS Project Location Map
Figure 2.	SSURGO Soils Map
Figure 3.	Watershed Management Areas and Hydrologic Units
Figure 4.	NJDEP/NWI-Mapped Wetlands and Streams
Figure 5.	FEMA 1% Chance Annual Floodplain
Figure 6.	Land Use/Land Cover
Appendix B.	Routine Wetland Determination Data Sheets and Stream Inventory Forms
Appendix C.	Photo Documentation
Appendix D.	Field Delineated Wetlands and Streams Plans

ACRONYM LIST

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

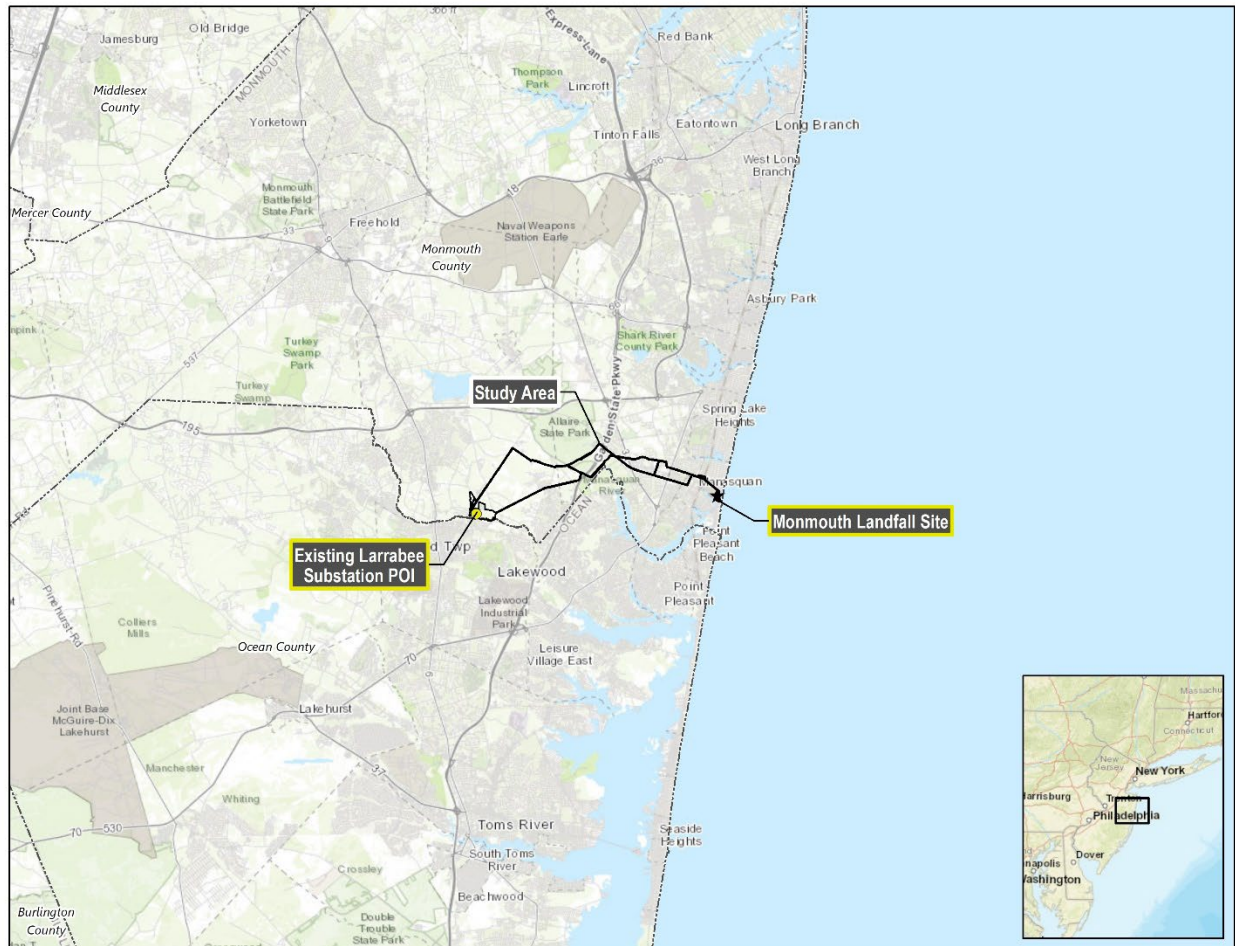
1.0 INTRODUCTION

Atlantic Shores Offshore Wind, LLC (Atlantic Shores) is a 50/50 joint venture between EDF-RE Offshore Development, LLC (a wholly owned subsidiary of EDF Renewables, Inc. [EDF Renewables]) and Shell New Energies US LLC (Shell). Atlantic Shores is developing a Construction and Operations Plan for submittal to the Bureau of Ocean Energy Management for two offshore wind energy generation projects within the southern portion of Lease Area OCS-A 0499 (the Lease Area) off the coast of New Jersey with onshore interconnections in two areas of New Jersey.

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., was contracted by Atlantic Shores to conduct wetland and stream delineations associated with the onshore infrastructure necessary to support the Projects' interconnection to the existing Larrabee Substation located in Howell Township, New Jersey. The delineation Study Area (herein referred to as the Larrabee Study Area) includes the proposed onshore interconnection route rights-of-ways (ROWS) from the Monmouth Landfall in the Borough of Sea Girt, New Jersey; and the Larrabee point of interconnection (POI) (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.

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 Code of Federal Regulations [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.

In addition, Coastal Wetlands are regulated according to the Wetlands Act of 1970, which authorized the NJDEP to regulated activities on coastal wetlands that have been delineated and mapped by the Department. Generally, these wetlands are also regulated by the USACE under Section 10 of the Rivers and Harbors 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 square feet (ft²), 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 waters and are a present or documented habitat for threatened and endangered species.

Depending on project design and assessed impacts to the wetlands and waters identified, the NJDEP permits and/or Section 10/404 permits from the USACE may be required.¹

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,

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).

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.

2.0 GENERAL SITE CONDITIONS

Publicly available information used in determining the presence and approximate boundaries of wetlands and waters of the United States 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 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 (Web 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 et al., 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 27 soil series within the Study Area (Figure 2). Klej lomy sand (KkgB) is the dominant soils series mapped within the Larrabee Study Area with significant areas of Downer sandy loam (DoeBo) , Lakewood sand (LasB) and

Downer urban land complex (DouB) 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 (%)	Drainage¹	Hydric Percentage	Hydric Rating²
AtsAO	Atsion sand, Northern Tidewater Area	0-2	PD	95	Hydric
BerAt	Berryland sand, frequently flooded	0-2	VPD	100	Hydric
DocBO	Downer loamy sand, Northern Tidewater Area	0-5	WD	5	Partially Hydric
DocCO	Downer loamy sand, Northern Tidewater Area	5-10	WD	0	Not Hydric
DoeAO	Downer sandy loam, Northern Tidewater Area	0-2	WD	0	Not Hydric
DoeBO	Downer sandy loam, Northern Tidewater Area	2-5	WD	0	Not Hydric
DouB	Downer urban land complex	0-5	WD	0	Not Hydric
EveB	Evesboro sand	0-5	ED	10	Partially Hydric
EveC	Evesboro sand	5-10	ED	0	Not Hydric
EveD	Evesboro sand	10-15	ED	0	Not Hydric
EveE	Evesboro sand	15-25	ED	0	Not Hydric
FapA	Fallsington loams, Northern Coastal Plain	0-2	PD	85	Hydric
HboB	Hammonton sandy loam	2-5	MWD	5	Partially Hydric
HumAt	Humaquepts, frequently flooded	0-3	PD	100	Hydric
KkgB	Klej loamy sand	0-5	SPD	10	Partially Hydric
LakB	Lakehurst sand	0-5	MWD	10	Partially Hydric
LasB	Lakewood sand	0-5	ED	5	Partially Hydric
PHG	Pits, sand and gravel	N/A	N/A	0	Not Hydric
SacBO	Sassafras sandy loam, Northern Tidewater Area	2-5	WD	0	Not Hydric

Mapping Unit Symbol	Series	Slope (%)	Drainage ¹	Hydric Percentage	Hydric Rating ²
SacC	Sassafras sandy loam, Northern Coastal Plain	5-10	WD	4	Partially Hydric
SacD	Sassafras sandy loam	10-15	WD	0	Not Hydric
SacE	Sassafras sandy loam	15-25	WD	0	Not Hydric
SadC	Sassafras gravelly sandy loam	5-10	WD	0	Not Hydric
SafA	Sassafras loam	0-2	WD	4	Partially Hydric
UdaB	Udorthents	0-8	WD	0	Not Hydric
UdauB	Udorthents-Urban land complex	0-8	WD	0	Not Hydric
WATERs	Water, saline	N/A	N/A	Water	Water

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 Hydric = 50-100, Partially Hydric = 1-49, Not Hydric = 0, Water = Water

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-Frontal Atlantic Ocean (0204030101)
 - Metedeconk River (0204030104)
- HUC 12:
 - Lower Manasquan River-Atlantic Ocean (020403010800)
 - Middle Manasquan River (020103010105)
 - North Branch Metedeconk River (020403010202)
 - Shark River-Frontal Atlantic Ocean (020403010104).

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 2022) averages 48.83 inches at Trenton, New Jersey, and 47.48 inches in the Atlantic City Region (NOAA, 2022). The on-site

wetland delineation took place during and after the growing season between June 24 and 26, December 7, 8, and 10, 2020; September 14 and 15, 2021; June 12 through the 14, 2022; and February 15, 16 and 21, 2023. Precipitation for the month of May 2020 was below average (1.62 inches [Atlantic City]/1.62 inches [Trenton]) compared to the typical monthly average in the Atlantic City (3.39 inches) and Trenton, New Jersey (3.97 inches). Precipitation for the month of November 2020 was above average (5.60 inches [Atlantic City]/ 4.14 inches [Trenton]) compared to the monthly average of 3.69 inches (Atlantic City) and 3.18 inches (Trenton). Precipitation for September 2021 was above average (6.28 inches [Atlantic City]/5.06 inches [Trenton]) compared to the monthly average of 3.15 inches (Atlantic City) and 4.25 inches (Trenton). Precipitation for May 2022 was above average (4.57 [Atlantic City]/ 7.17 [Trenton] inches) compared to the monthly average of 3.39 inches (Atlantic City) and 3.97 inches (Trenton). Precipitation for January 2023 was slightly above average (3.74 inches [Atlantic City]/3.60 inches [Trenton]) compared to the monthly average of 3.38 inches (Atlantic City) and 3.29 inches (Trenton).

2.3 Federal- and State-Mapped Wetlands and Streams

New Jersey State-mapped wetlands indicate that there are 79 mapped wetlands totaling approximately 79 acres within the Larrabee Study Area (Figure 4). The mapped wetlands include deciduous wooded wetlands (46.8 acres), modified agricultural wetlands (7.1 acres), mixed wooded wetlands (16.6 acres deciduous dominant, 4.3 acre coniferous dominant), deciduous scrub/shrub wetland (0.78 acre), wetland rights-of-way (1.5 acre), coniferous wooded wetlands (0.9 acre), vegetated dune communities (0.5 acre), herbaceous wetlands (0.1 acre), modified disturbed wetlands (0.05 acre), and cemetery on wetland (0.01 acre).

NWI mapping indicates the presence of 68 wetland communities and 20 riverine resources totaling approximately 60.3 acres within the Larrabee Study Area (Figure 4). Freshwater forested/shrub wetland communities are the dominant community types mapped on site, totaling approximately 57.4 acres. Other NWI-mapped communities within the Study Area include freshwater emergent wetlands (0.4 acre), freshwater ponds (0.4 acre) and riverine resources (2.0 acres).

New Jersey mapping identifies nine waterways within the Study Area. The waterways include Dicks Brook, Haystack Brook, Judas Creek, Manasquan River and associated tributaries, Muddy Ford Brook and associated tributaries, Squankum Brook and associated tributaries, Sandyhill Brook, and Tarkiln 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% Annual Chance Flood zone, 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 2015 Land Use/Land Cover of New Jersey (NJDEP, 2015), and further verified during the on-site field investigations. The Larrabee Study Area encompasses approximately 628 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). The location and extent of various land use and land cover locations is provided in Figure 6.

Table 2. Vegetation/Land Cover Within the Study Area

Land Cover Class	Acres	Percent Cover (%)
Deciduous Forest (>50% Crown Closure)	83.2	13.2
Residential, Rural, Single Unit	73.6	11.7
Deciduous Wooded Wetlands	46.8	7.5
Other Urban or Built-Up Land	40.3	6.4
Residential, Single Unit, Low Density	32.9	5.2
Residential, Single Unit, Medium Density	29.9	4.8
Coniferous Brush/Shrubland	24.7	3.9
Mixed Forest (>50% deciduous with >50% crown closure)	24.3	3.9
Industrial	23.8	3.8
Cropland and Pastureland	22.5	3.6
Recreational Land	21.6	3.4
Commercial/Services	20.7	3.3
Upland Rights-of-Way Undeveloped	20.7	3.3
Mixed Deciduous/Coniferous Brush/Shrubland	19.3	3.1
Coniferous Forest (>50% crown closure)	17.7	2.8
Transportation/Communication/Utilities	16.9	2.7
Mixed Wooded Wetlands (Deciduous Dom.)	16.6	2.6
Other Agriculture	11.5	1.8
Deciduous Forest (10-50% Crown Closure)	10.8	1.7
Mixed Forest (>50% Coniferous with >50% Crown Closure)	8.0	1.3
Altered Lands	5.5	0.9
Agricultural Wetlands (Modified)	5.1	0.8
Orchards/Vineyards/Nurseries/Horticultural Areas	4.7	0.7
Military Installations	4.3	0.7
Mixed Wooded Wetlands (Coniferous Dom.)	4.3	0.7
Residential, High Density or Multiple Dwelling	3.9	0.6
Streams and Canals	3.6	0.6
Railroads	3.3	0.5
Plantation	3.2	0.5
Mixed Forest (>50% Deciduous with 10-50% Crown Closure)	3.1	0.5
Mixed Forest (>50% Coniferous with 10-50% Crown Closure)	3.0	0.5
Undifferentiated Barren Lands	3.0	0.5
Major Roadway	2.7	0.4

Land Cover Class	Acres	Percent Cover (%)
Coniferous Forest (10-50% Crown Closure)	1.8	0.3
Disturbed Wetlands (Modified)	1.6	0.3
Wetland Rights-of-Way	1.5	0.2
Deciduous Brush/Shrubland	1.0	0.2
Coniferous Wooded Wetlands	0.9	0.1
Deciduous Scrub/Shrub Wetlands	0.8	0.1
Artificial Lakes	0.7	0.1
Stormwater Basin	0.7	0.1
Athletic Fields (Schools)	0.6	0.1
Cemetery	0.5	0.1
Former Agricultural Wetland	0.5	0.1
Vegetated Dune Communities	0.5	0.1
Mixed Scrub/Shrub Wetlands (Deciduous Dom.)	0.4	0.1
Transitional Areas	0.4	0.1
Old Field (<25% Brush Covered)	0.2	0.02
Confined Feeding Operations	0.1	0.02
Natural Lakes	0.1	0.2
Herbaceous Wetlands	0.1	0.01
Bridge Over Water	0.03	>0.01
Cemetery on Wetland	>0.01	>0.01
Coniferous Scrub/Shrub Wetlands	>0.01	>0.01
Total	627.9	100

Source: Land Use/Land Cover of New Jersey 2015 (NJDEP, 2015).

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; December 7, 8, and 10, 2020; September 14 and 15, 2021; June 12 through the 14, 2022; and February 15, 16 and 21, 2023. 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 than 0.6 inch/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 et al. (1979) classification system.

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 27 wetlands and 19 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*	40.12029	-74.034	1.15	--	--	--	1.15	--	--	Exceptional	Yes	Yes
WL2	40.146066	-74.106972	0.3	--	--	0.16	0.46	--	--	Intermediate	Yes	Yes
WL3	40.146101	-74.107643	--	--	0.04	--	0.04	--	--	Intermediate	Yes	Yes
WL4	40.144086	-74.116153	--	--	3.51	--	3.51	--	--	Exceptional	Yes	Yes
WL5	40.136999	-74.137716	--	--	0.16	--	0.16	--	--	Intermediate	Yes	Yes
WL6A	40.137924	-74.144525	--	--	0.29	--	0.29	--	--	Ordinary	Yes	Yes
WL6B	40.143679	-74.162616	--	--	0.91	--	0.91	--	--	Exceptional	Yes	Yes
WL7	40.146319	-74.167957	--	--	0.51	0.11	0.62	--	--	Intermediate	Yes	Yes
WL8	40.143712	-74.170264	--	--	0.22	--	0.22	--	--	Intermediate	Yes	Yes
WL9	40.138808	-74.174871	--	--	1.40	--	1.40	--	--	Exceptional	Yes	Yes
WL10	40.133906	-74.179492	--	--	1.25	--	1.25	--	--	Exceptional	Yes	Yes
WL11	40.128772	-74.184049	--	--	0.48	--	0.48	--	--	Exceptional	Yes	Yes
WL12	40.124342	-74.187698	0.40	--	--	--	0.40	--	--	Ordinary	Yes	Yes
WL13	40.118727	-74.192792	--	--	0.26	--	0.26	--	--	Exceptional	Yes	Yes
W017	40.139095	-74.108156	--	--	0.33	--	0.33	--	--	Intermediate	Yes	Yes
W017A	40.138902	-74.107758	--	--	0.42	--	0.42	--	--	Intermediate	Yes	Yes
W018	40.141019	-74.079996	--	--	0.71	--	0.71	--	--	Ordinary	Yes	Yes
W019	40.136662	-74.110322	--	--	2.33	--	2.33	--	--	Exceptional	Yes	Yes
26-W008	40.121004	-74.1857893	--	--	0.04	--	0.04	--	--	Exceptional	Yes	Yes
26-W009	40.118593	-74.195839	--	--	0.18	--	0.18	--	--	Exceptional	Yes	Yes
26-W010	40.11546	-74.176054	0.004	--	--	--	0.004	--	--	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					
26-W011	40.115474	-74.175072	--	--	0.02	--	0.02	--	--	Exceptional	Yes	Yes
26-W012	40.117387	-74.170078	--	--	0.41	--	0.41	--	--	Exceptional	Yes	Yes
26-W014	40.118956	-74.165905	--	0.01	--	--	0.01	--	--	Exceptional	Yes	Yes
26-W015	40.128265	-74.13556	--	--	0.05	--	0.05	--	--	Exceptional	Yes	Yes
26-W016	40.130071	-74.051801	--	--	--	0.14	0.14	--	--	Ordinary	Yes	Yes
26-W019	40.13722	-74.109186	--	0.22	--	--	0.22	--	--	Exceptional	Yes	Yes
Wetland Totals			1.86	0.23	13.52	0.41	16.02					
WC1	40.146344	-74.107541	--	--	--	--	--	R3	170	--	Yes	Yes
WC2	40.143395	-74.117668	--	--	--	--	--	R3	306	--	Yes	Yes
WC3	40.144251	-74.163437	--	--	--	--	--	R4	138	--	Yes	Yes
WC4	40.14676	-74.167875	--	--	--	--	--	R2	60	--	Yes	Yes
WC5	40.138386	-74.175247	--	--	--	--	--	R2	109	--	Yes	Yes
WC6	40.135076	-74.178153	--	--	--	--	--	R2	123	--	Yes	Yes
WC7	40.128147	-74.184362	--	--	--	--	--	R2	318	--	Yes	Yes
WC8	40.124887	-74.187199	--	--	--	--	--	R4	144	--	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					
WC9	40.123935	-74.18829	--	--	--	--	--	R2	142	--	Yes	Yes
WC10	40.118672	-74.192965	--	--	--	--	--	R2	118	--	Yes	Yes
S009B	40.136724	-74.110136	--	--	--	--	--	R3	451	--	Yes	Yes
ST04	40.142784	-74.119388	--	--	--	--	--	R3	920	--	Yes	Yes
ST005	40.118579	-74.195617	--	--	--	--	--	R3	120	--	Yes	Yes
ST006	40.11562	-74.175356	--	--	--	--	--	R3	421	--	Yes	Yes
ST007	40.118281	-74.168004	--	--	--	--	--	R3	201	--	Yes	Yes
ST008	40.128231	-74.135348	--	--	--	--	--	R4	94	--	Yes	Yes
ST09	40.127458	-74.055411	--	--	--	--	--	R6	119	--	Yes	Yes
ST013	40.118167	-74.167969	--	--	--	--	--	R6	61	--	Yes	Yes
ST014	40.119064	-74.165681	--	--	--	--	--	R3	48	--	Yes	Yes
Total Linear Feet									4,063			

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), and 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 (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 4.1.1 and Section 4.1.2 provides descriptions of the delineated streams within the Study Area.

4.1.1 Wetlands

EDR identified 27 wetlands totaling approximately 16 acres within the Study Area. The area of each community type is summarized in Table 3, and a detailed description is provided in this subsection 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 (WL1) (PEM)

Wetland 1 (WL1) 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 is assumed to be classified as exceptional due to its proximity and connection to the dune system on the beach, with multiple documented federal- and state-threatened and endangered species—the northern harrier (*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 (WL2) (POW/PEM)

Wetland 2 (WL2) is a POW wetland with a small section of a PEM 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 is assumed to be classified as intermediate because it does not satisfy the definition of an ordinary or exceptional resource wetland. Although black-crowned night-heron foraging mapped habitat is documented in the vicinity, this wetland feature's location is not conducive or characteristic of foraging habitat for this species.

Wetland 3 (WL3) (PFO)

Wetland 3 (WL3) 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 is assumed to be classified as intermediate because it does not satisfy the definition of an ordinary or exceptional resource wetland. Although the 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 4 (WL4) (PFO)

Wetland 4 (WL4) is a PFO wetland, dominated by sweetgum (*Liquidambar styraciflua*, FAC) and river birch (*Betula nigra*, FACW) in the canopy, and jewelweed (*Impatiens Capensis*, 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 is assumed to be classified as exceptional due to its proximity to the Manasquan River and documented foraging habitat for the black-crowned night-heron and bald eagle, and mapped habitat for the bog turtle and wood turtle.

Wetland 5 (WL5) (PFO)

Wetland 5 (WL5) is a PFO wetland, dominated by swamp white oak (*Quercus bicolor*, FAC) and red maple in the canopy, and highbush blueberry (*Vaccinium corymbosum*, FACW) in the herbaceous layer indicating a hydrophytic vegetation community. Soils were considered hydric and consisted of a thick layer of depleted sand with mottles (10YR 4/2, 80%, 7.5YR 5/6, 20%) and met the criteria for a depleted matrix. Wetland hydrology indicators observed included oxidized rhizospheres on living root channels. This wetland is assumed to be classified as intermediate because it does not satisfy the definition of an ordinary or exceptional resource wetland.

Wetland 6 (WL6) (PEM)

Wetland 6 (WL6) is a PEM floodplain wetland that is dominated by Japanese stiltgrass (*Microstegium viminium*, FAC) and jewelweed. Sandy soils displayed a low chroma matrix (10YR 4/2) with 20% mottles (7.5YR 5/6) indicating that the observed soils are hydric. Wetland hydrology indicators observed were surface water, saturated soils, and geomorphic position. This wetland is assumed to be classified as exceptional due to the documented Pine Barrens treefrog vernal pool breeding habitat and the wetland's association with Squankum Brook Tributary.

Wetland 7 (WL7) (PFO)

Wetland 7 (WL7) 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 is assumed to be classified as intermediate due to its large extent and lack of documented threatened or endangered species habitat.

Wetland 8 (WL8) (PFO)

Wetland 8 (WL8) 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 (W019), this wetland is assumed to be classified as intermediate resource because it does not satisfy the definition of an ordinary or exceptional resource wetland.

Wetland 9 (WL9) (PFO)

Wetland 9 (WL9) 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 is assumed to be classified as exceptional due to the documented observations of the Pine Barrens tree frog and black-crowned night-heron.

Wetland 10 (WL10) (PFO)

Wetland 10 (WL10) is a PFO wetland associated with an unnamed tributary of Muddy Fork Run that is dominated by sweetgum and black gum 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 is assumed to be classified as exceptional due to the documented observations of Pine Barrens tree frog.

Wetland 11 (WL11) (PFO)

Wetland 11 (WL11) 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 10 (WL10), this wetland is assumed to be classified as exceptional due to the documented observations of the Pine Barrens tree frog.

Wetland 12 (WL12) (PEM)

Wetland 12 (WL12) 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 ROW 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 is assumed to be classified as an ordinary.

Wetland 13 (WL13) (PFO)

Wetland 13 (WL13) 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 10 (WL10), this wetland is assumed to be classified as exceptional value due to the documented observations of the Pine Barrens tree frog.

Wetland 17/17A (W017/W017A) (PFO)

Wetland 17 (W017) is a PFO wetland bisected by Allenwood Lakewood Road. The wetland is dominated by green ash and sweet gum in the tree stratum and sweet pepperbush and highbush blueberry in the shrub stratum and met criteria for hydrophytic vegetation. Soils had a low chroma matrix (10YR 2/1 and 10YR 5/3) that met criteria for a histosol, meeting hydric soils criteria. Wetland hydrology indicators observed were drainage patterns and geomorphic position. This wetland is assumed to be classified as intermediate resource value since it did not meet the criteria to be classified as an ordinary or exception resource value.

Wetland 18 (W018) (PFO)

Wetland 18 (W018) is a PFO wetland associated with Hannabrand Brook Tributary outside of the Study Area and runs along the north side of Tiltens Corner Road. The wetland is dominated by green ash and sweet gum in the tree stratum, and sweet pepperbush and highbush blueberry in the shrub stratum. The herbaceous stratum was dominated by skunk cabbage (*Symplocarpus foetidus*) and soft rush (*Juncus effusus*) meeting criteria for hydrophytic vegetation. Soils had a low chroma matrix (10YR 2/2, 10YR 3/1, 10YR 3/2,

10YR 3/4 and 10YR 4/2) with mottles present (10YR 5/6 and 7.5YR 4/6) qualifying for a Redox Dark Surface, and meeting criteria for hydric soils. Wetland hydrology indicators observed were standing water, soil saturation, high-water table, water-stained leaves, drainage patterns and geomorphic position. This wetland is assumed to be classified as an ordinary due to direct impacts of human activity and development surrounding the immediate area.

Wetland 19 (W019) (PFO)

Wetland 19 (W019) is a PFO wetland associated with the Manasquan River. The wetland is dominated by sweet gum in the tree stratum and grey dogwood in the shrub stratum. The herbaceous stratum is dominated by soft rush, flat-top goldentop (*Euthamia graminifolia*) and wrinkle-leaf goldenrod (*Solidago rugosa*) meeting criteria for hydrophytic vegetation. Soils had a low chroma matrix (10YR 2/1 and 10YR 4/2) with mottles (7.5YR 4/6) present qualifying for a depleted matrix, and meeting criteria for hydric soils. Wetland hydrology indicators observed were drainage patterns and geomorphic position. This wetland is assumed to be classified as exceptional due to the non-disturbed location, connectivity with the Manasquan River and documented threatened and endangered species.

Wetland 26-W008 (PFO)

Wetland 26-W008 is a PEM wetland situated west of Lanes Pond Road north of Dicks Brook. Dominant vegetation consisted of red maple (*Acer rubrum*, FAC). Soils observed on site met the criteria for thick dark surface with a soil profile 0 to 18 inches of 10YR 2/1 fine sandy loam. Hydrology indicators observed during the site investigation included a sparsely vegetated concave surface and water-stained leaves. This wetland is assumed to be classified as exceptional due to documented threatened species and/or their habitat.

Wetland 26-W009 (PFO)

Wetland 26-W009 is a PFO wetland situated west of Lanes Pond Road along Dicks Brook. Dominant vegetation consisted of swamp white oak (*Quercus bicolor*, FACW), red maple (*Acer rubrum*, FAC), and coastal sweet pepperbush (*Clethra alnifolia*, FAC). Soils observed on site met the criteria for a histosol with a soil profile of 0 to 24 inches of 10YR 2/1 muck. Hydrology indicators observed during the site investigation included a high-water table, saturation, and water-stained leaves. This wetland is assumed to be classified as exceptional due to the non-disturbed location documented threatened species and/or their habitat.

Wetland 26-W010 (PEM)

Wetland 26-W010 is a PEM wetland situated north of Lakewood-Allenwood Road adjacent to Haystack Brook. Dominant vegetation consisted of coastal sweet pepperbush (*Clethra alnifolia*, FAC) and soft rush (*Juncus effusus*, OBL). Soils observed on site met the criteria for a depleted matrix with a soil profile of 0 to 6 inches 10YR 2/1 loam and 6 to 18 inches 10YR 4/1 sandy loam. Hydrology indicators observed during the site investigation included a high-water table, saturation, and water-stained leaves. This wetland is assumed to be classified as exceptional due to documented threatened species and/or their habitat.

Wetland 26-W011 (PFO)

Wetland 26-W011 is a PFO wetland situated south of Lakewood-Allenwood Road adjacent to Haystack Brook. Dominant vegetation consisted of swamp white oak (*Quercus bicolor*, FACW), red maple (*Acer rubrum*, FAC), and coastal sweet pepperbush (*Clethra alnifolia*, FAC). Soils observed on site met the criteria for a depleted matrix with a soil profile of 0 to 2 inches 10YR 2/1 sandy loam, 2 to 6 inches 10YR 4/1 sandy loam, 6 to 12 inches 10YR 3/1 sandy loam and 12 to 18 inches 10YR 6/3 sandy loam. Hydrology indicators observed during the site investigation included geomorphic position and microtopographic relief. This wetland is assumed to be classified as exceptional due to documented threatened species and/or their habitat.

Wetland 26-W012 (PFO)

Wetland 26-W012 is a PFO wetland is situated on both sides of Lakewood-Allenwood Road adjacent to Haystack Brook and Muddy Ford Brook. Dominant vegetation consisted of red maple (*Acer rubrum*, FAC), coastal sweet pepperbush (*Clethra alnifolia*, FAC), soft rush (*Juncus effusus*, OBL), and skunk cabbage (*Symplocarpus foetidus*, OBL). Soils observed on site met the criteria for a depleted matrix with a soil profile of 0 to 1 inch 10YR 2/1 loam, 1 to 10 inches 10YR 5/1 loam, and 10 to 18 inches 10YR 2/1 loam. Hydrology indicators observed during the site investigation included a high-water table, saturation, and water-stained leaves. This wetland is assumed to be classified as exceptional due to documented threatened species and/or their habitat.

Wetland 26-W014 (PSS)

Wetland 26-W014 is a PSS wetland situated south of Lakewood-Allenwood Road adjacent to Sandy Hill Brook. Dominant vegetation consisted of swamp white oak (*Quercus bicolor*, FACW), red maple (*Acer rubrum*, FAC), and coastal sweet pepperbush (*Clethra alnifolia*, FAC). Soils observed on site met the criteria for a histosol with a soil profile of 0 to 12 inches 10YR 2/1 muck. Surface water and a high-water table prevented soil from being obtained below 12 inches. Hydrology indicators observed during the site investigation included surface water, a high-water table, saturation, iron deposits, water-stained leaves, and hydrogen sulfide odor. This wetland is assumed to be classified as exceptional due to documented threatened species and/or their habitat.

Wetland 26-W015 (PFO)

Wetland 26-W015 is a PFO wetland situated on both sides of Lakewood-Allenwood Road adjacent to Sawmill Creek. Dominant vegetation consisted of red maple (*Acer rubrum*, FAC), coastal sweet pepperbush (*Clethra alnifolia*, FAC), and skunk cabbage (*Symplocarpus foetidus*, OBL). Soils observed on site met the criteria for a depleted matrix with a soil profile of 0 to 3 inches 10YR 2/1 loam and 3 to 20 inches 10YR 4/2 fine sand. Hydrology indicators observed during the site investigation included geomorphic position and meeting conditions of a FAC-neutral test. This wetland is assumed to be classified as exceptional due to documented threatened species and/or their habitat.

Wetland 26-W016 (POW)

Wetland 26-W016 is a POW wetland associated with Mac's Pond and Judas Creek along North Main Street. No vegetation was observed. Soils were not obtained due the depth of the pond and nearby buried gas mains and fiber optic cables. Hydrologic indicators observed during the site investigation included surface water. This wetland is assumed to be classified as ordinary as it is a man-made pond within a public park.

Wetland 26-W019 (PSS)

Wetland 26-W019 is a PSS wetland situated north of Lakewood-Allenwood Road along the Manasquan River. Dominant vegetation consisted of green ash (*Fraxinus pennsylvanica*, FACW) and soft rush (*Juncus effusus*, OBL). Soils observed on site met the criteria of a histosol with a soil profile of 0 to 18 inches of 10YR 2/1 muck. Hydrologic indicators observed during the site investigation included surface water, a high-water table, and saturation. This wetland is assumed to be classified as exceptional due to documented threatened species and/or their habitat.

4.1.2 Surface Waters

EDR field delineated 19 surface waters that include rivers, brooks, streams, and other surface drainage features within the Larrabee Study Area. Descriptions of each watercourse are presented in this subsection.

Watercourse 1 (WC1) – 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, coarse woody debris and channelization. Substrate consisted of silt/clay and sand.

Watercourse 2 (WC2) – Lower Perennial (R2)

The watercourse, the Manasquan River, flows underneath Hospital Road and has a hydrologic connection to floodplain wetlands (Wetland 4 [WL4]). It has a gentle slope, an approximate bank width of 70 feet and a stream width of 40 feet. At the time of field studies, the watercourse had an approximate water depth of greater than 24 inches, and was characterized by a gentle gradient, overhanging vegetation, and coarse woody debris. Substrate consisted of silt/clay and sand.

Watercourse 3 (WC3) – Intermittent (R4)

The watercourse, a tributary to Squankum Brook, flows underneath Easy Street and has a hydrologic connection to floodplain wetlands (Wetland 6B [WL6B]). It has a gentle slope, an approximate bank width of 25 feet and a stream width of 20 feet. At the time of field studies, the watercourse had an approximate water depth of 12 inches, and was characterized by a gentle gradient, undercut banks, overhanging vegetation, coarse woody debris, and channelization. Substrate consisted of silt/clay and sand.

Watercourse 4 (WC4) – Lower Perennial (R2)

The watercourse, known as Squankum Brook, and flows through forested Wetland 7 (WL7), 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 5 (WC5) – Lower Perennial (R2)

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 6 (WC6) – Lower Perennial (R2)

The watercourse, Woodcock Brook, flows through forested Wetland 10 (WL10), and flows through a culvert under County Road 547. This tributary eventually confluent 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 7 (WC7) – Lower Perennial (R2)

This watercourse, known as Tarkiln Brook, flows through forested Wetland 11 (WL11), 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 8 (WC8) – Intermittent (R4)

This watercourse is an unnamed tributary that provides the source of hydrology for a forested wetland, Wetland 12 (WL12), 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 9 (WC9) – Lower Perennial (R2)

The watercourse, known as Haystack Brook, flows through a forested wetland, Wetland 12 (WL12). 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 over 24 inches and was characterized by undercut banks, overhanging vegetation and deep pools. Substrate consisted of silt/clay, sand, and gravel.

Watercourse 9B (S009B) – Upper Perennial (R3)

Watercourse 9B (S009B), is another segment of the Manasquan River, and flows through forested Wetland 19 (W019). It has a gentle slope, an approximate bank width of 50 feet and an approximate depth of 60 inches. At the time of field studies, the watercourse was characterized by depositional bars/benches, overhanging vegetation, deep pools and a strong floodplain. Substrate consisted of gravel, sand and silt/clay.

Watercourse 10 (WC10) – Lower Perennial (R2)

The watercourse, known as Dicks Brook, flows through forested Wetland 13 (WL13). It has a gentle slope, an approximate bank width of 40 feet and a stream width of 28 feet. At the time of field studies, the watercourse had an approximate depth of over 24 inches and was characterized by undercut banks, overhanging vegetation and deep pools. Substrate consisted of silt/clay, sand, and gravel.

Stream 04 (26-ST04) – Perennial (R3)

Stream 04 (26-ST04), a tributary to the Manasquan River, is a perennial stream that flows through wetland WL4 on its course to the Manasquan River. 26-ST002 had a depth of approximately 6 inches at Thalweg with a gentle stream gradient of 0 to 5%. The bank width of the stream was approximately 1 to 4 feet, depending on location. The substrate consisted of gravel, sand, silt, and clay.

Stream 005 (26-ST005) – Perennial (R3)

Stream 005 (26-ST005), also known as Dicks Brook, is a perennial stream that flows through wetland 26-W009. 26-ST005 has a depth of approximately 6 inches at Thalweg with a gentle stream gradient of 0 to 5%. The bank width of the stream was approximately 6 to 12 feet, depending on location. The substrate consisted of gravel, sand, silt, and clay.

Stream 006 (26-ST006) – Perennial (R3)

Stream 006 (26-ST006), also known as Haystack Brook, is a perennial stream that flows adjacent to wetlands 26-W010, 26-W011, and 26-W012. 26-ST006 has a depth of approximately 10 inches at Thalweg with a gentle stream gradient of 0 to 5%. The bank width of the stream was approximately 15 to 25 feet, depending on location. The substrate consisted of gravel, sand, silt, and clay.

Stream 007 (26-ST007) – Perennial (R3)

Stream 007 (26-ST007), also known as Muddy Ford Brook, is a perennial stream that flows through wetland 26-W012. 26-ST007 has a depth of approximately 6 inches at Thalweg with a gentle stream gradient of 0 to

5%. The bank width of the stream was approximately 4 to 12 feet, depending on location. The substrate consisted of gravel, sand, silt, and clay.

Stream 008 (26-ST008) – Intermittent (R4)

Stream 008 (26-ST008), also known as Sawmill Creek, is an intermittent stream that flows adjacent to wetland 26-W015. 26-ST008 was dry at the time of the site investigation and had a gentle stream gradient of 0 to 5%. The bank width of the stream was approximately 2 to 6 feet, depending on location. The substrate consisted of cobble, gravel, and sand.

Stream 09 (26-ST09) – Ephemeral (R6)

Stream 09 (26-ST09) is an ephemeral stream located along the Capital to the Coast Trail. 26-ST09 was dry at the time of the site investigation and had a gentle stream gradient of 0 to 5%. The bank width of the stream was approximately 2 to 10 feet, depending on location. The substrate consisted of gravel and sand.

Stream 013 (26-ST013) – Ephemeral (R6)

Stream 013 (26-ST013) is an ephemeral stream located between wetland 26-W012 and stream ST007. It may be an unnamed tributary to Muddy Ford Brook. 26-ST013 was dry at the time of the site investigation and had a gentle stream gradient of 0 to 5%. The bank width of the stream was approximately 2 to 4 feet, depending on location. The substrate consisted of sand, silt, and clay.

Stream 014 (26-ST014) – Perennial (R3)

Stream 014 (26-ST014), also known as Sandyhill Brook, is a perennial stream that flows adjacent to wetland 26-W014. 26-ST014 has a depth of approximately 6 inches at Thalweg with a gentle stream gradient of 0 to 5%. The bank width of the stream was approximately 2 to 15 feet, depending on location. The substrate consisted of bedrock, cobble, gravel, and sand.

5.0 CONCLUSIONS

EDR conducted a wetland and watercourse delineation in June and December 2020, September 2021, June 2022, and February 2023 for the Atlantic Shores proposed onshore interconnection route ROWs from the Monmouth Landfall in the Borough of Sea Girt, New Jersey to the Larrabee POI, located in Howell Township, New Jersey. A total of approximately 16 acres across 27 individual non-tidal, freshwater wetlands and 19 watercourses (totaling 4,063 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. The NJDEP will also need to confirm the resource value classification presented in Table 3.

6.0 REFERENCES

- Code of Federal Regulations (CFR). 1986. Navigation and Navigable Waters: Definition of Navigable Waters of the United States. 33 CFR 329.11. Available at: <https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=2fcc86a0ae4919652ccaf4d67829679d&rgn=div5&view=text&node=33:3.0.1.1.35&idno=33> (Accessed August 2020).
- Cowardin, L.M., V. Carter, F.C. Goblet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service. Washington, D.C.
- Federal Interagency Committee for Wetland Delineation. 1989. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service, Washington, D.C. Cooperative technical publication. 76 pp. plus appendices.
- Integrated Taxonomic Information System (ITIS). 2020. Available at: <http://www.itis.gov>. (Accessed July, 2020).
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. Available at: <https://www.fws.gov/wetlands/documents/National-Wetland-Plant-List-2016-Wetland-Ratings.pdf>. (Accessed March 2023).
- Munsell Color. 2009. Munsell Soil Color Book. X-Rite, Incorporated. Grand Rapids, MI.
- NJDEP Bureau of GIS (NJDEP). 2015. Land Use/Land Cover of New Jersey 2015 (Download). Available: <https://gisdata-njdep.opendata.arcgis.com/documents/land-use-land-cover-of-new-jersey-2015-download/about>.
- National Oceanic and Atmospheric Administration (NOAA). 2022. Temperature and Precipitation Summary for Atlantic City NJ, 2000-2022. NOAA Regional Climate Center. Available at: <https://w2.weather.gov/climate/xmacis.php?wfo=phi> (Accessed August 2022).
- Natural Resources Conservation Service (NRCS). 2020. Soil Data Access (SDA) Hydric Soils List. Available at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html. (Accessed August 2020).
- National Conservation Training Center (NCTC). 2020. Geomorphic Provinces and Sections of the New York Bight Watershed. Available at: https://nctc.fws.gov/pubs5/web_link/text/geolsect.htm. (Accessed September, 2020).
- Soil Survey Staff. 2020. Web Soil Survey. Natural Resources Conservation Service, United States Department of Agriculture Available at: <http://websoilsurvey.nrcs.usda.gov/> (Accessed August 2020).

USACE and U.S. Environmental Protection Agency (USACE). 2020. The Navigable Waters Protection Rule: Definition of “Waters of the United States”. Pre-Publication Notice. Available at: <https://www.epa.gov/nwpr/final-rule-navigable-waters-protection-rule> (Accessed August 2020).

U.S. Department of Agriculture–Soil Conservation Service (USDA–SCS). 1987. Summary report 1987. National Resources Inventory. Statistical Bulletin 790. Iowa State University, Ames Iowa.

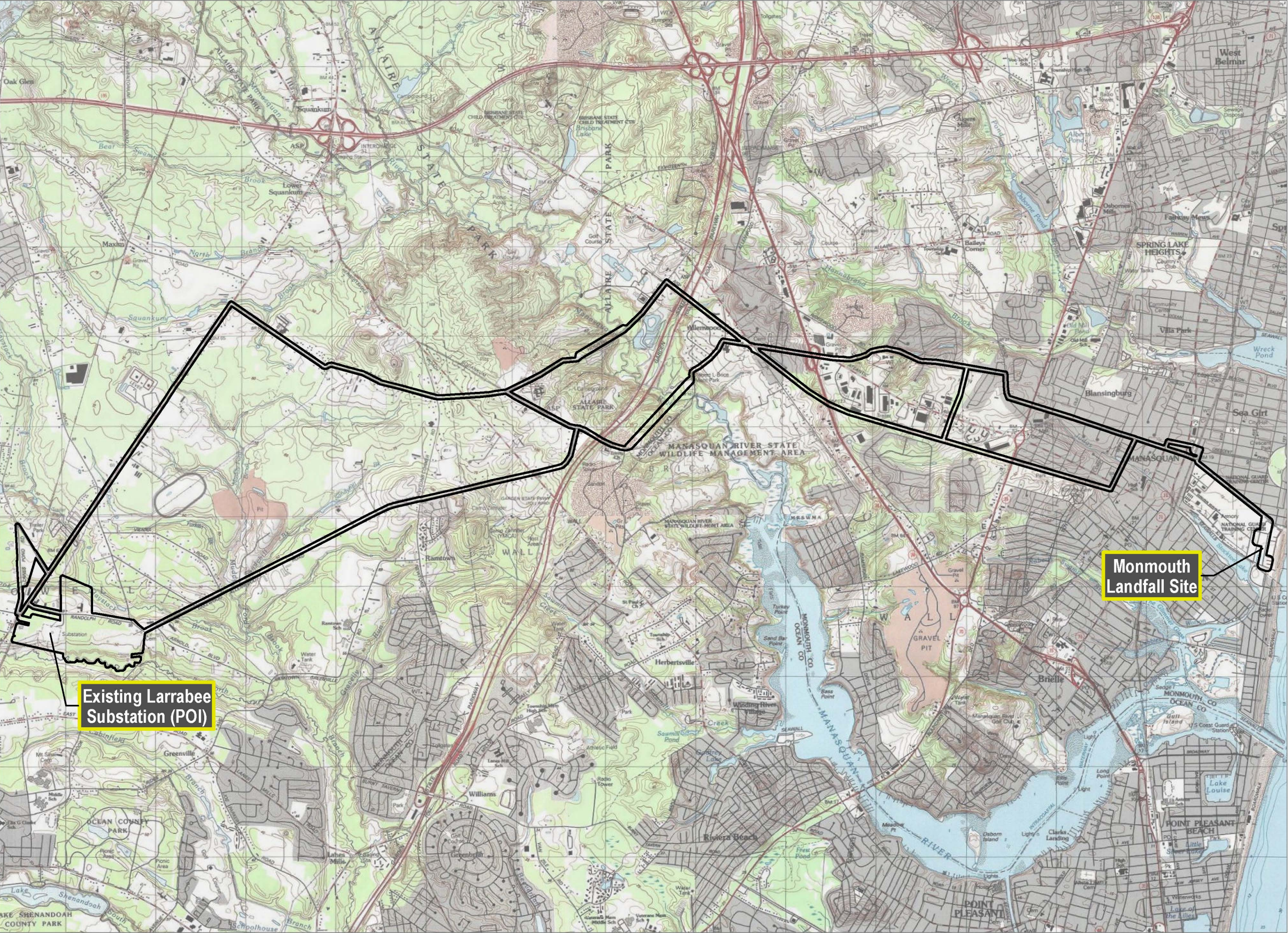
Yang, L., S. Jin, P. Danielson, C.G. Homer, L. Gass, S.M. Bender, A. Case, C. Costello, J.A. Dewitz, J.A. Fry, M. Funk, B.J. Granneman, G.C. Liknes, M.B. Rigge, and G. Xian. 2019. *A New Generation of the United States National Land Cover Database—Requirements, Research Priorities, Design, and Implementation Strategies*. Journal of Photogrammetry and Remote Sensing 146: 108-123. Available at: <https://doi.org/10.1016/j.isprsjprs.2018.09.006>. (Accessed March 2023).

Appendix A

Figures

Figure 1
Project Location Map

Figure 1. Project Location Map



**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

Borough of Sea Girt, Borough of
Manasquan, Township of Wall, and
Township of Howell
Monmouth County, New Jersey
Wetland Delineation Report

Study Area

Monmouth
Landfall Site



0 1,000 2,000 4,000
Feet

Prepared February 27, 2023
Basemap: ESRI ArcGIS Online "USA Topo Maps" map service.

ATLANTIC SHORES
offshore wind

EDR

Figure 2
SSURGO Soils Map

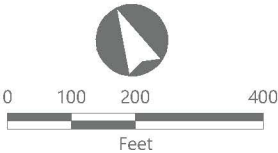
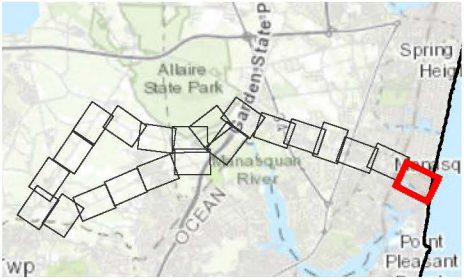


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

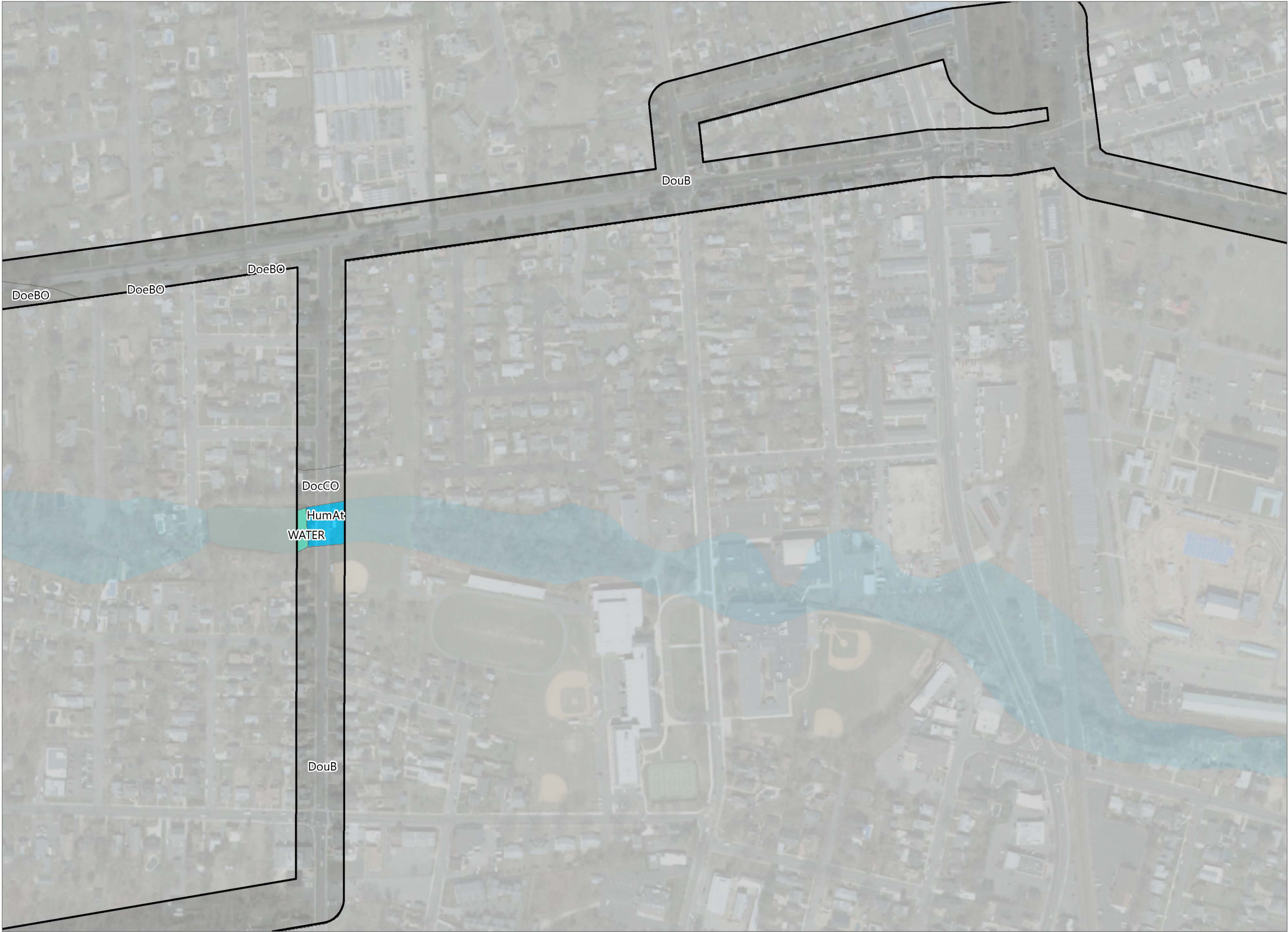
Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

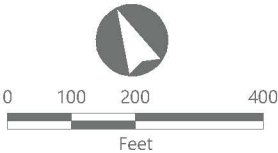
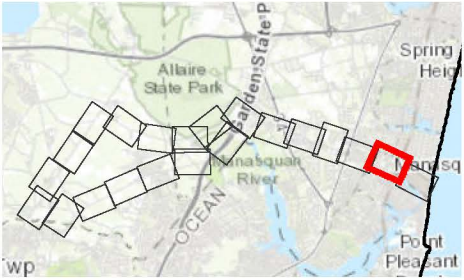


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

ATLANTIC SHORES
offshore wind

EDR

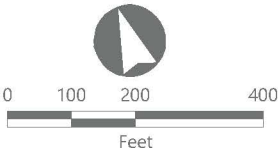
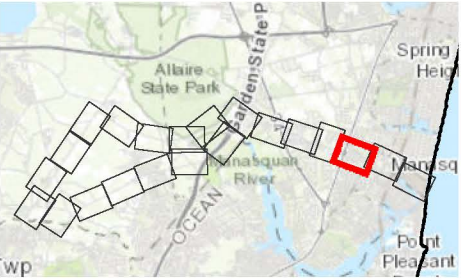


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

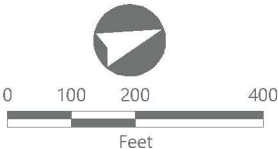
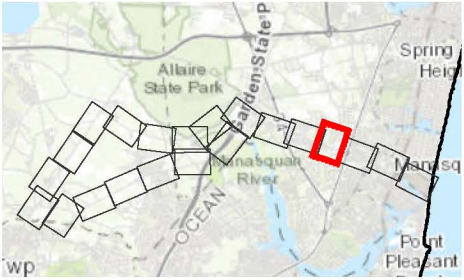


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery
*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

Figure 2. Soils Map

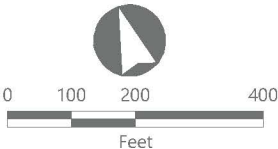
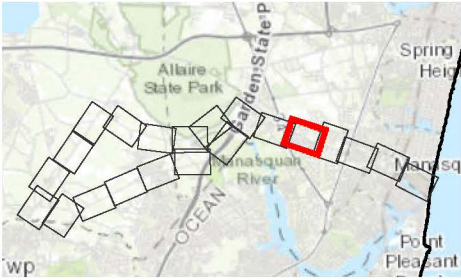


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

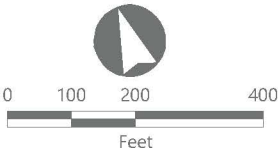
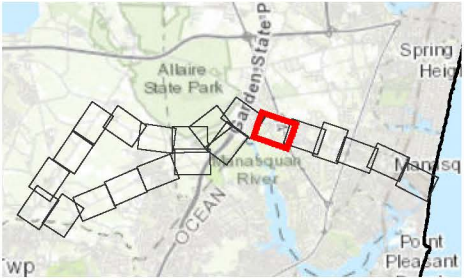


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

-  Project Area
- NRCS (SSURGO) Soils
 -  Hydric
 -  Partially Hydric*
 -  Water
 -  Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

Figure 2. Soils Map

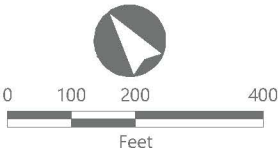
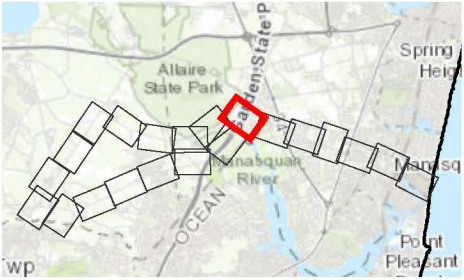


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

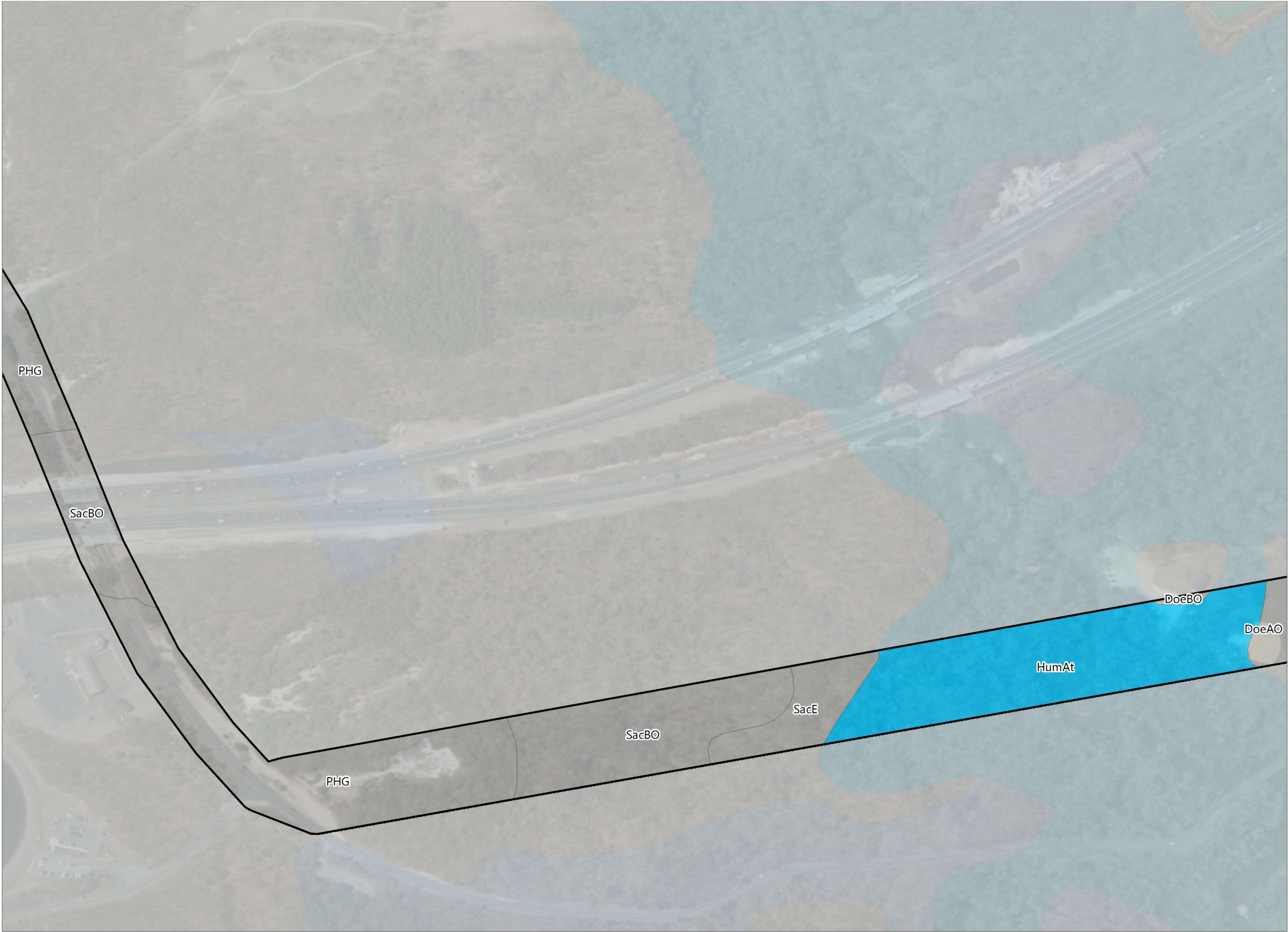
Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
- Hydric
- Partially Hydric*
- Water
- Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

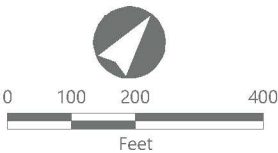
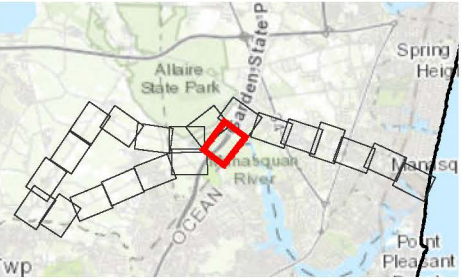


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

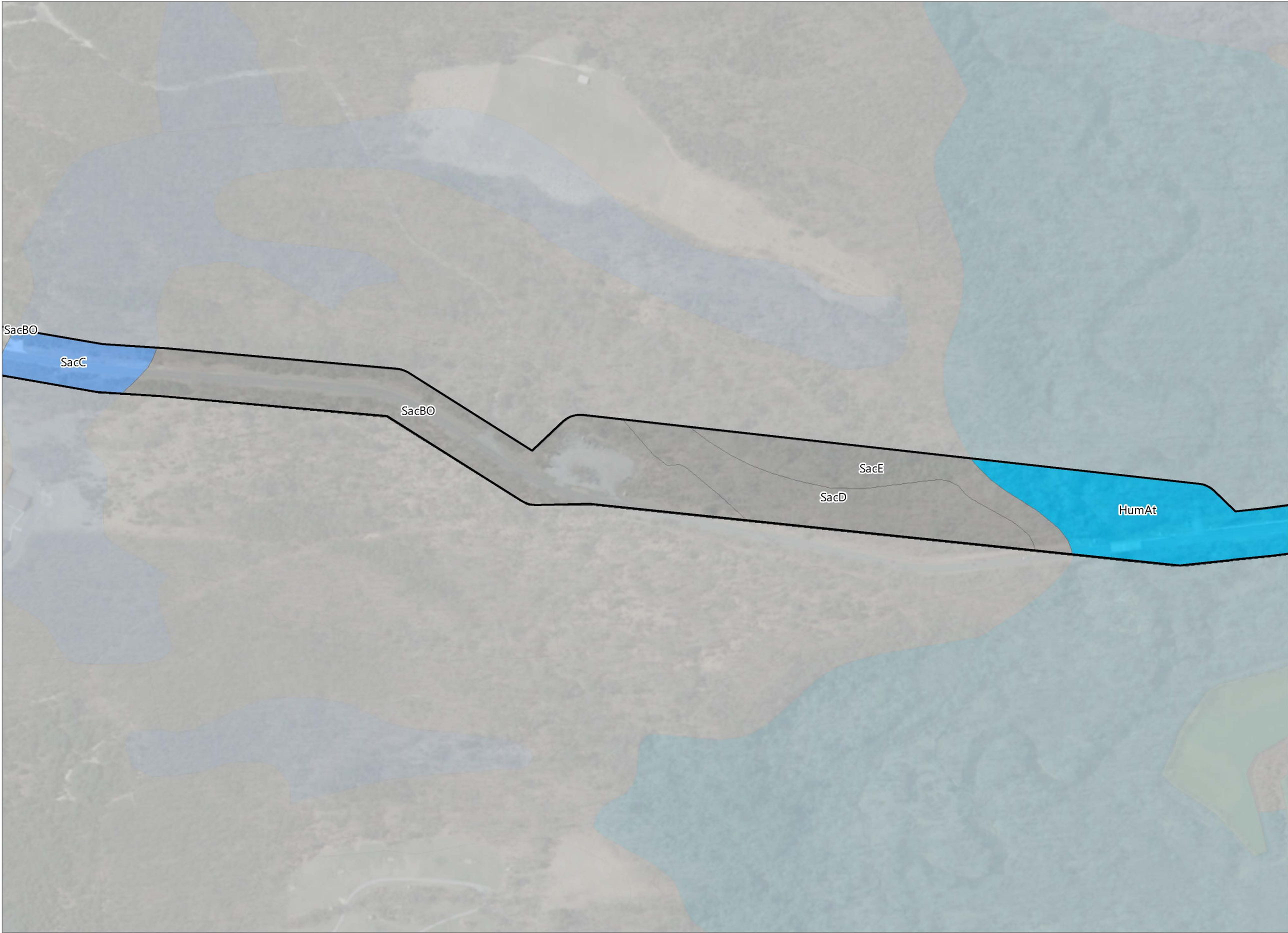
Borough of Sea Girt, Borough of
Manasquan, Township of Wall, and
Township of Howell
Monmouth County, New Jersey

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
- Hydric
- Partially Hydric*
- Water
- Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery
*Partially Hydric Status indicates that the major soil component is
classified as not hydric but includes minor soil components that are
classified as hydric.

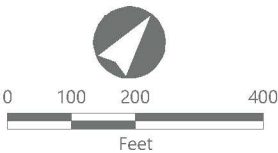
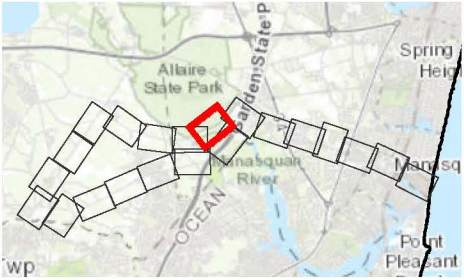


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
- Hydric
- Partially Hydric*
- Water
- Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

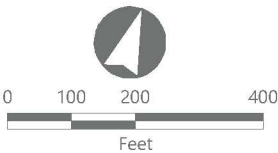
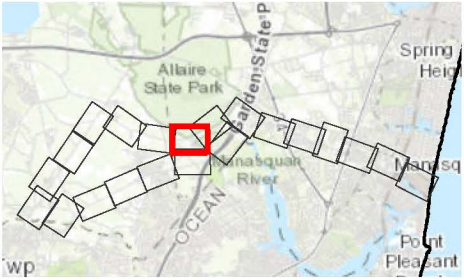


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

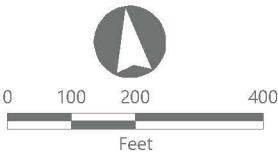
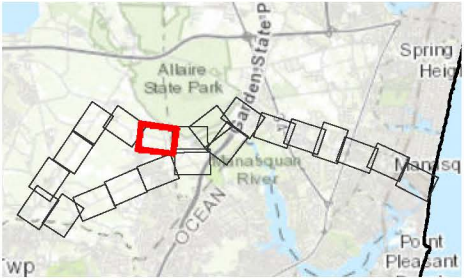


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

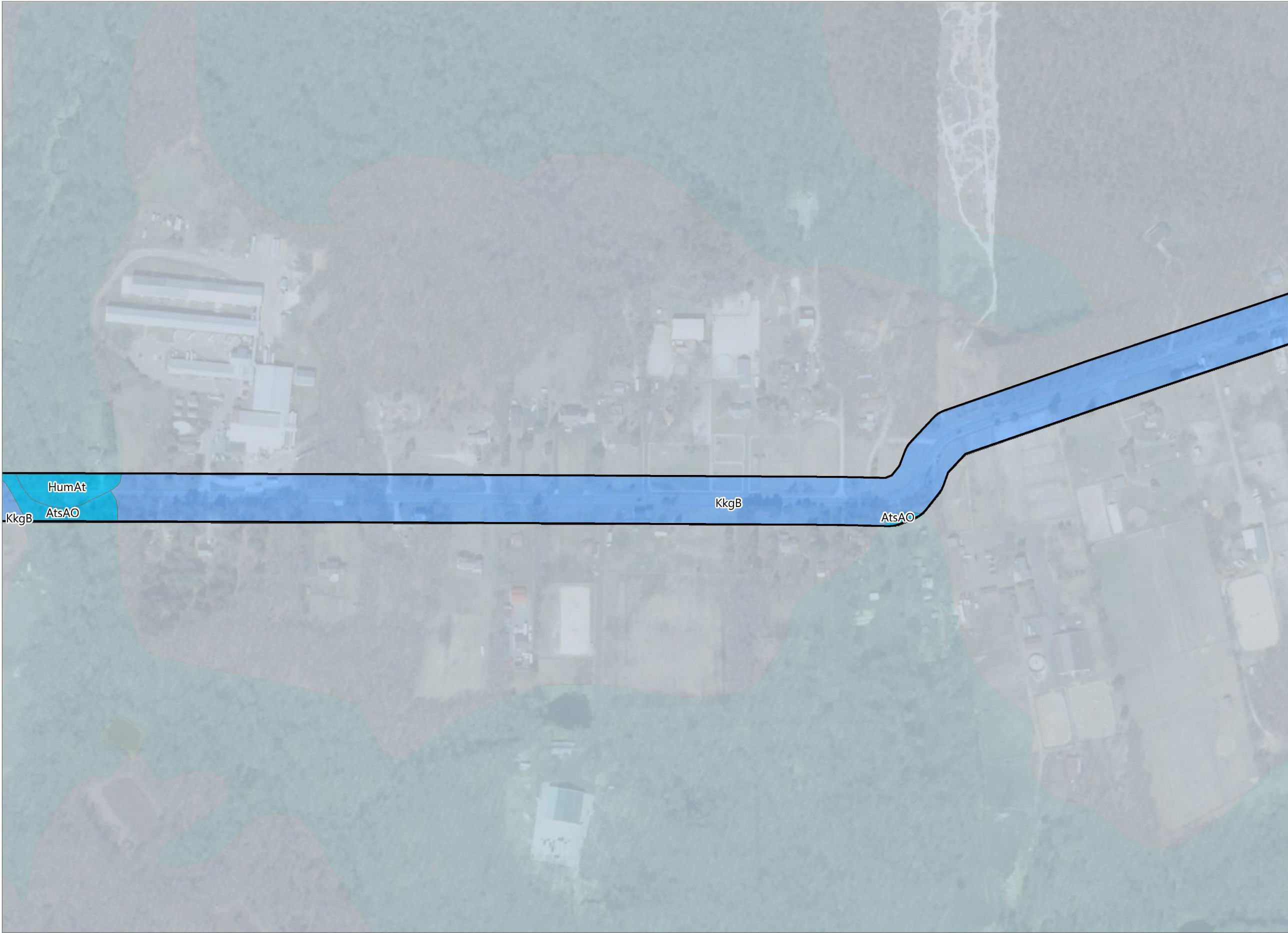
Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

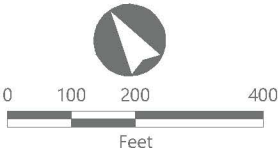
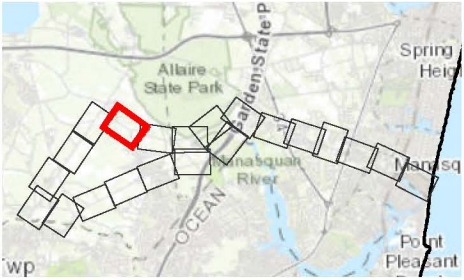


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

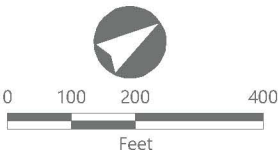
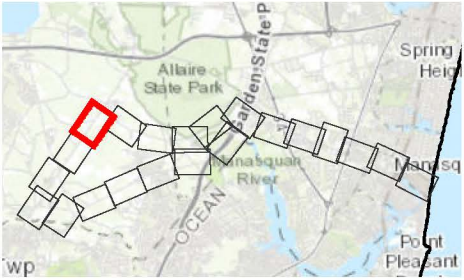
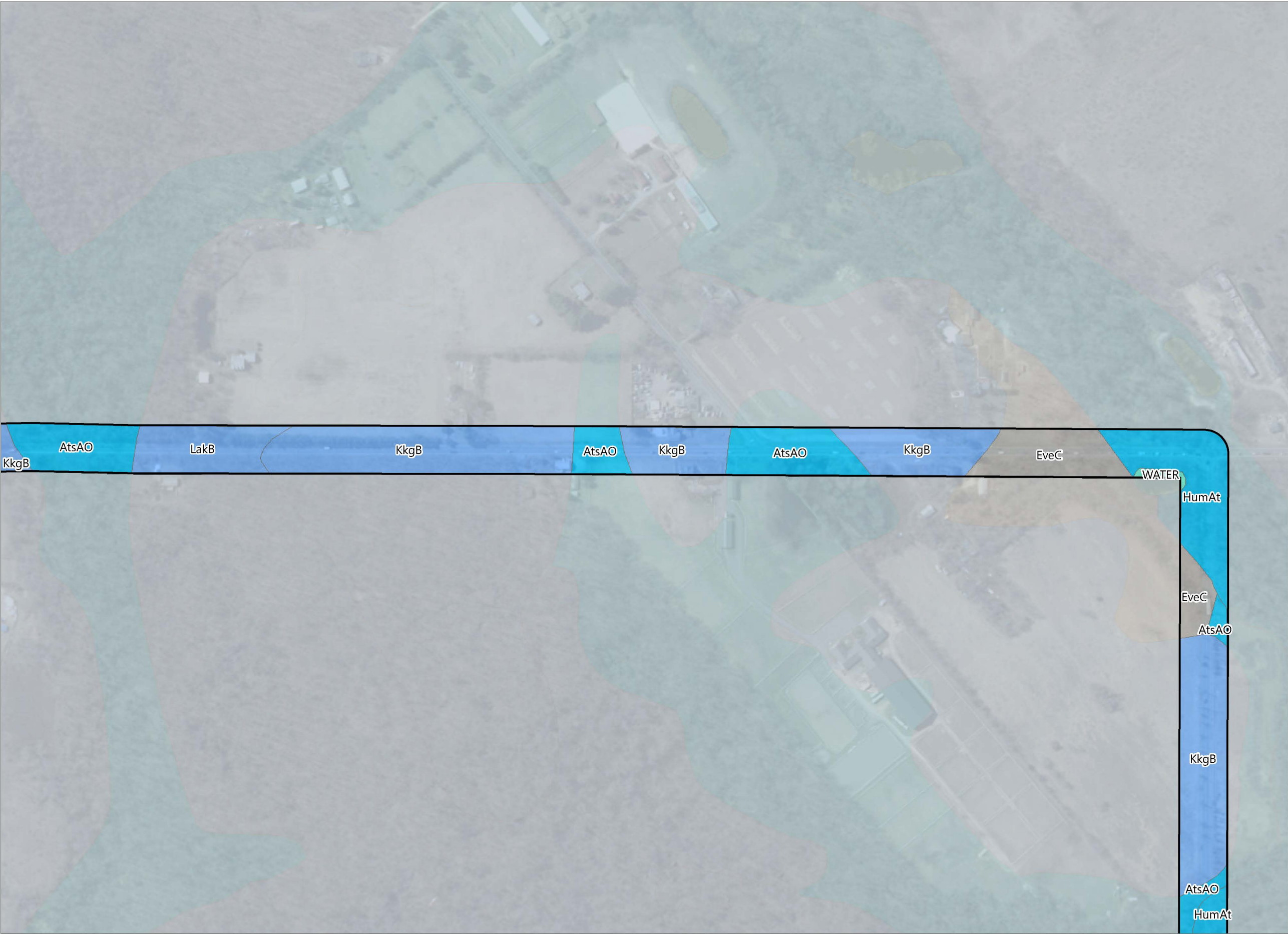
*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area

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

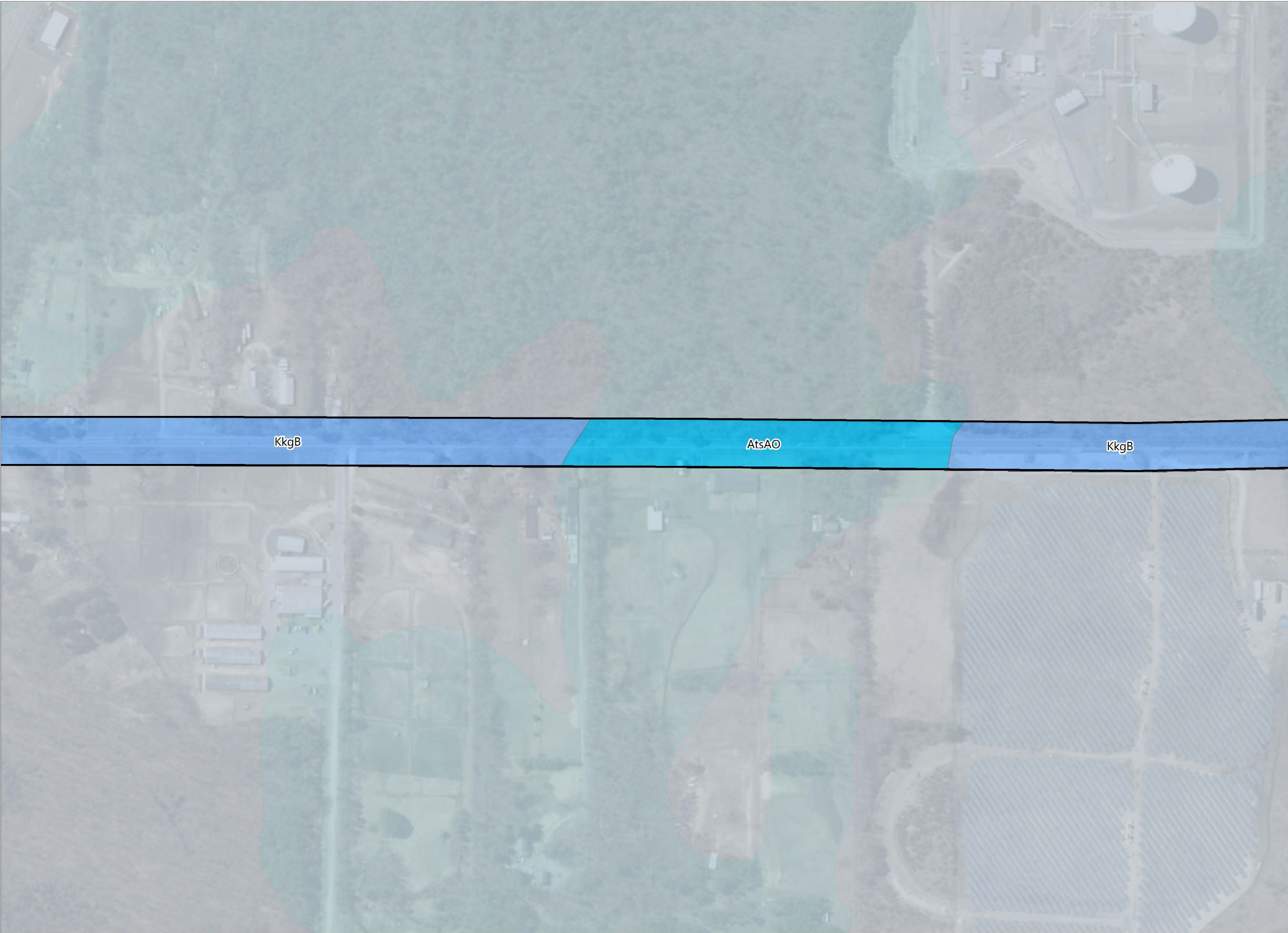
Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

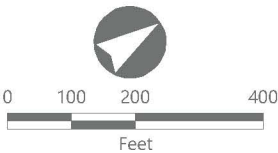
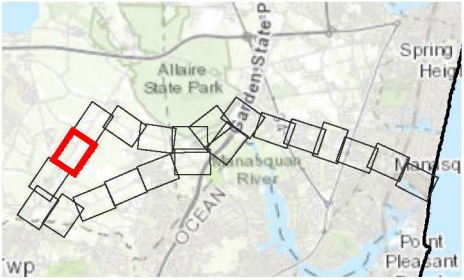


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

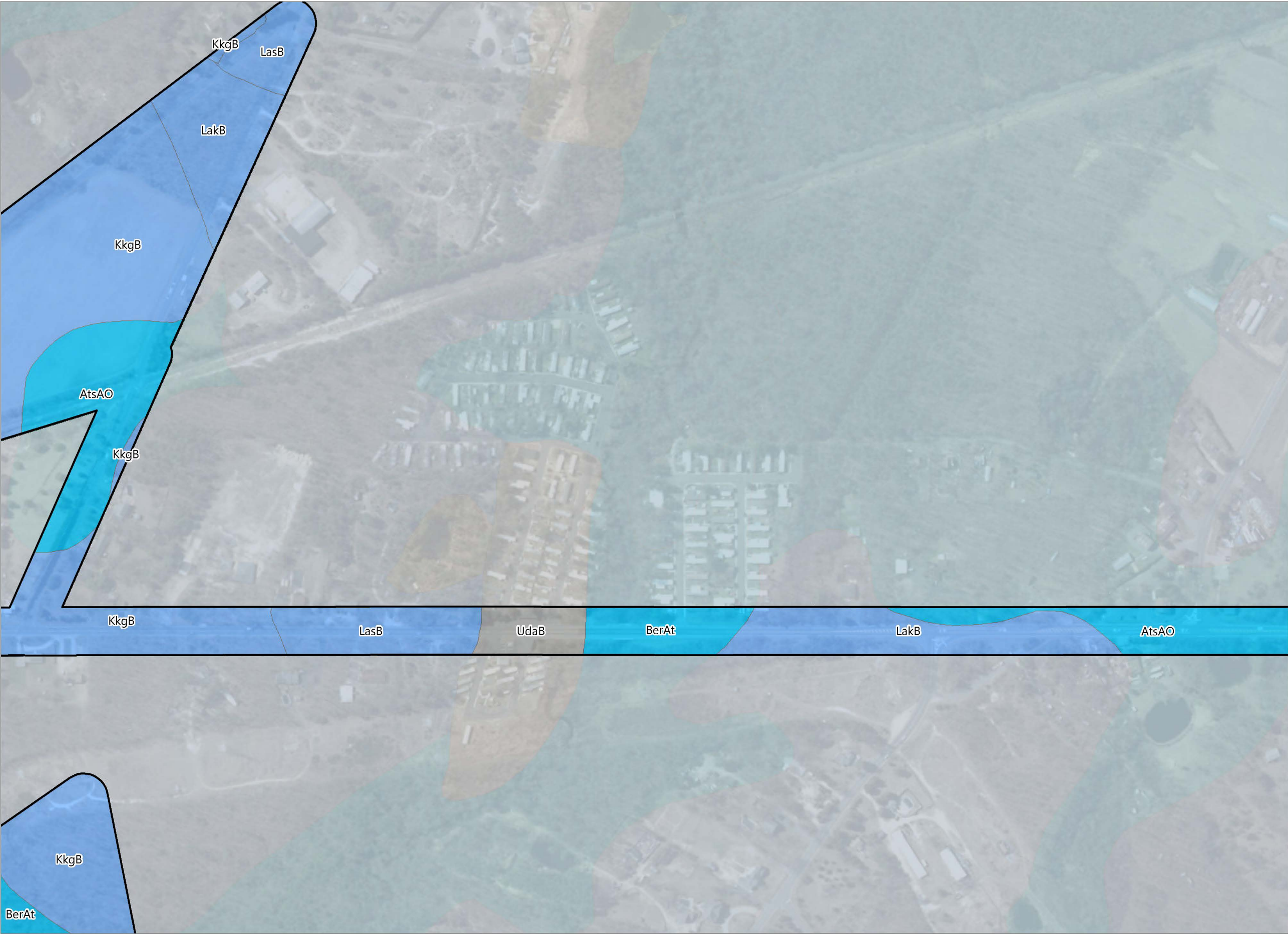
Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

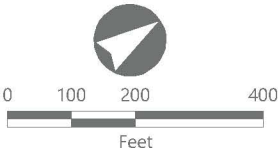
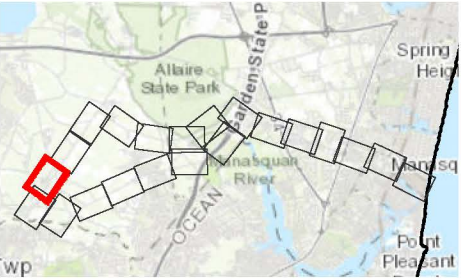


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

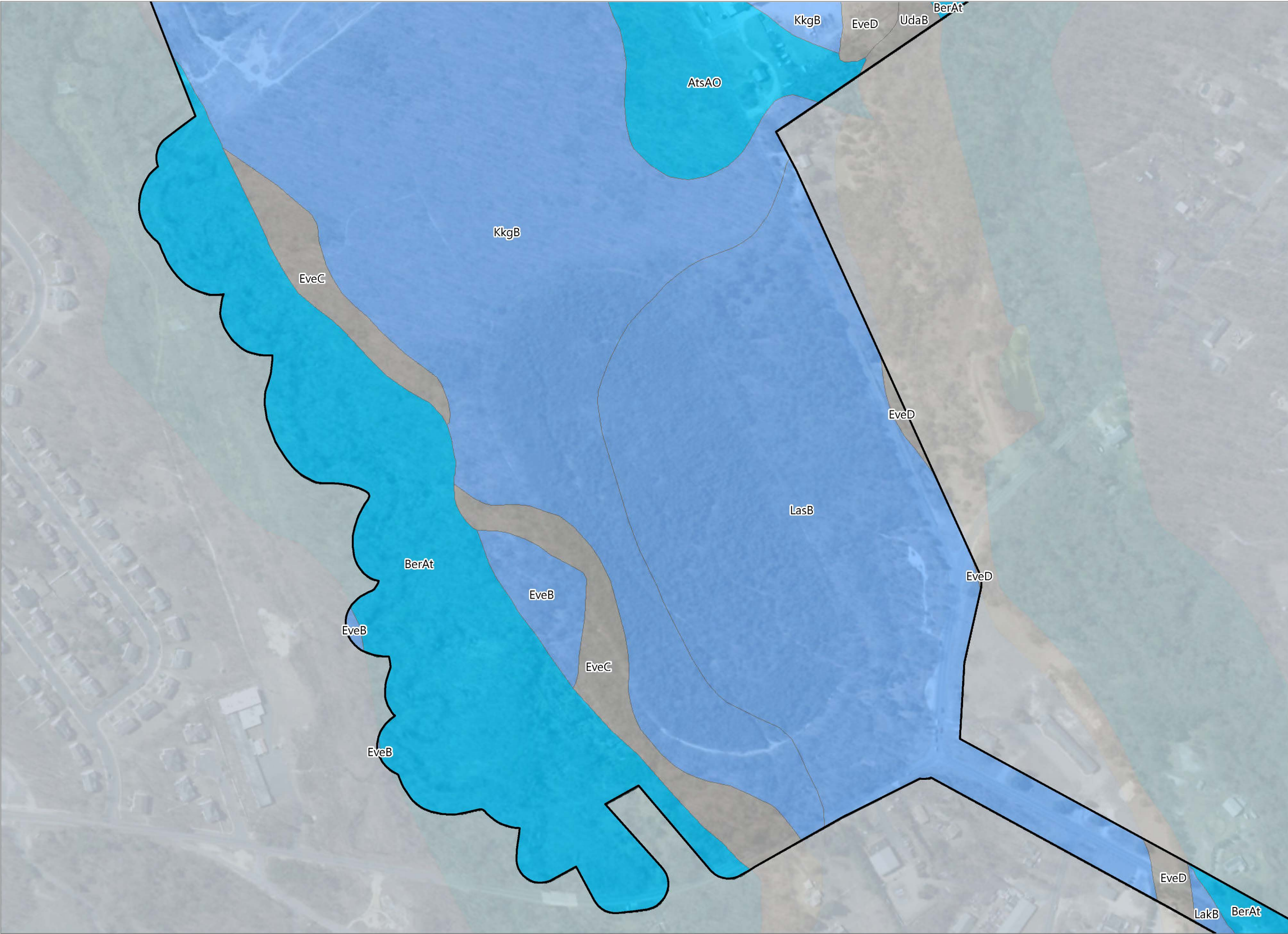
- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is
classified as not hydric but includes minor soil components that are
classified as hydric.

Figure 2. Soils Map

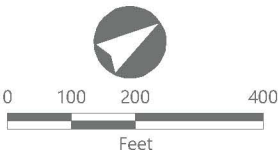
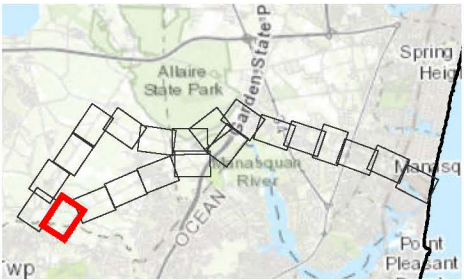


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

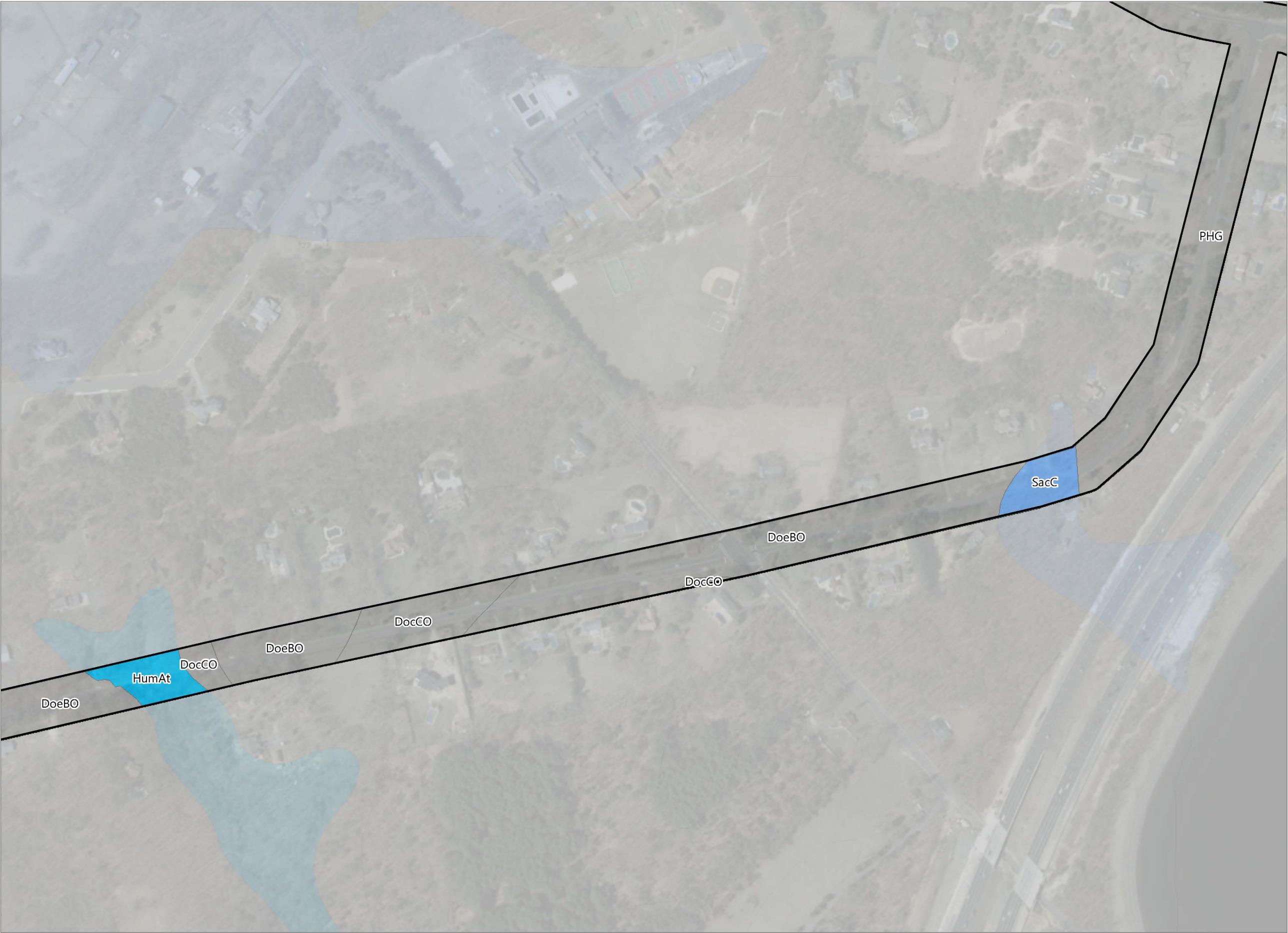
- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is
classified as not hydric but includes minor soil components that are
classified as hydric.

ATLANTIC SHORES
offshore wind

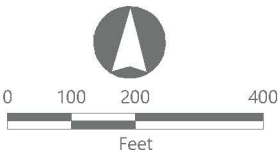
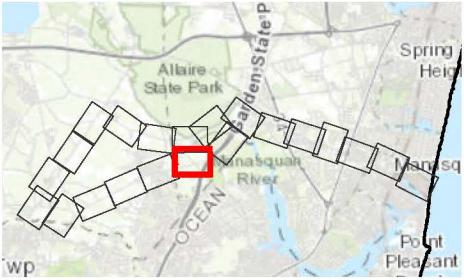


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is
classified as not hydric but includes minor soil components that are
classified as hydric.

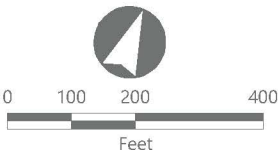
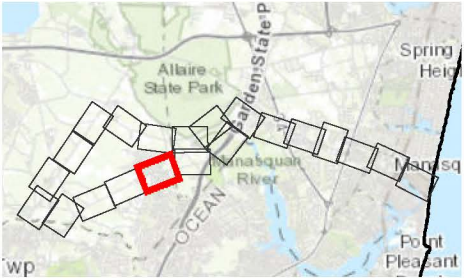


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

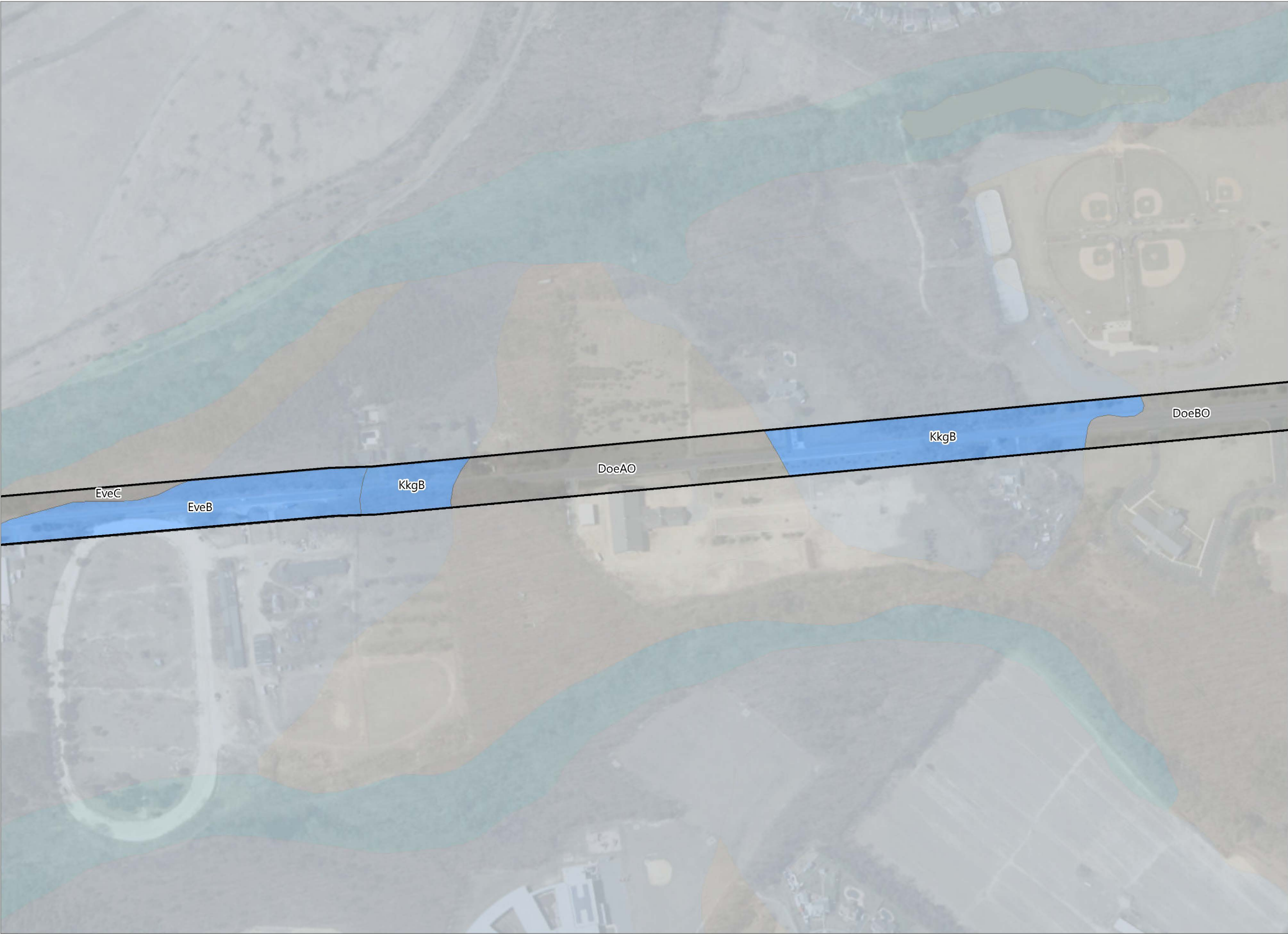
Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

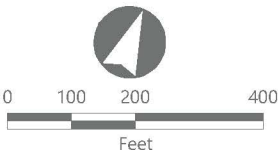
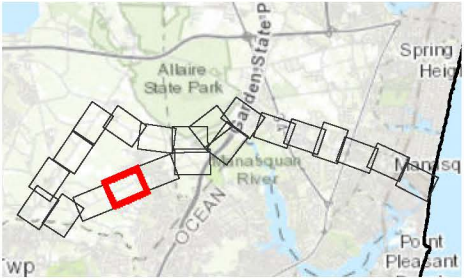


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
 - Hydric
 - Partially Hydric*
 - Water
 - Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

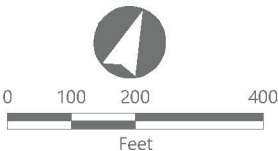
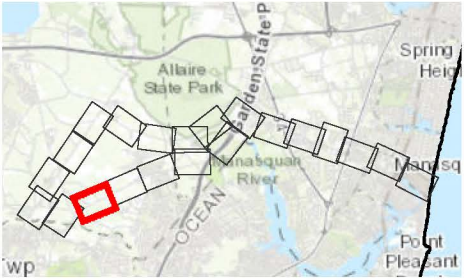
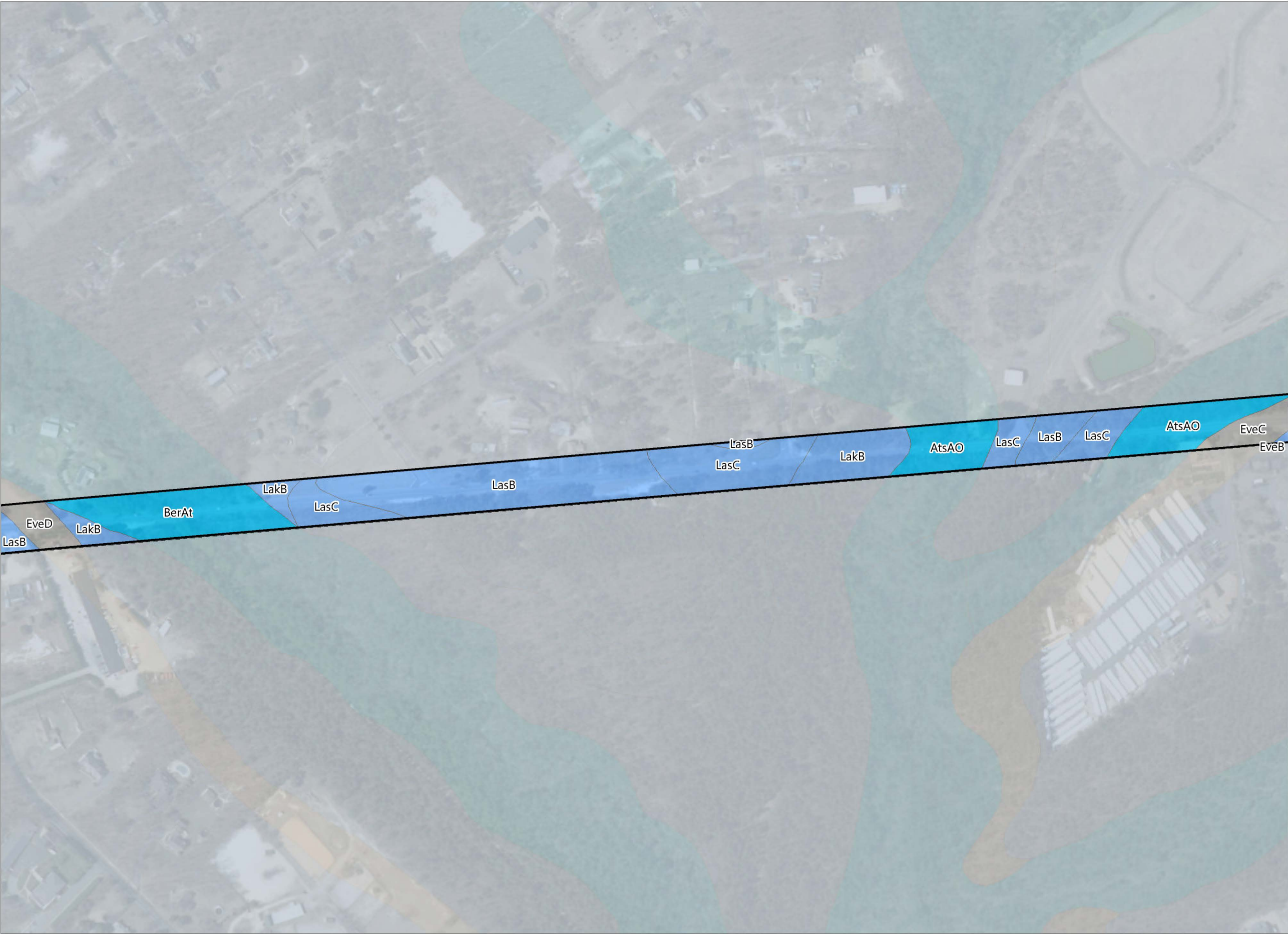
*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area

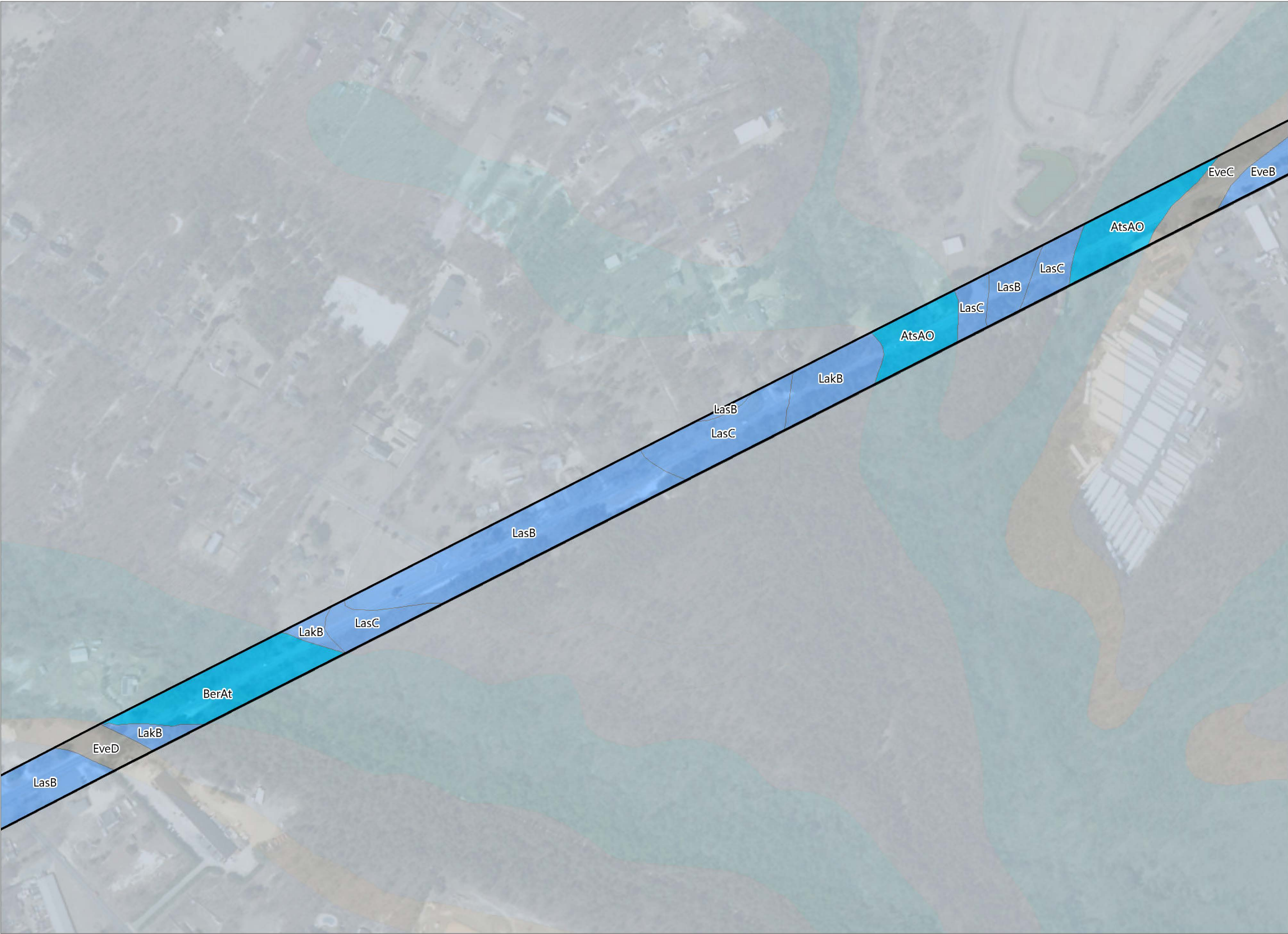
Borough of Sea Girt, Borough of
Manasquan, Township of Wall, and
Township of Howell
Monmouth County, New Jersey

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
- Hydric
- Partially Hydric*
- Water
- Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery
*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

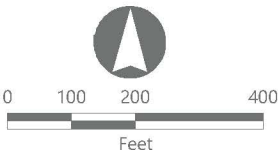


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

- Project Area
- NRCS (SSURGO) Soils
- Hydric
- Partially Hydric*
- Water
- Not Hydric



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

*Partially Hydric Status indicates that the major soil component is classified as not hydric but includes minor soil components that are classified as hydric.

Figure 3
Watershed Management Areas and Hydrologic Units

Figure 3. Watershed Management Areas and Hydrologic Units

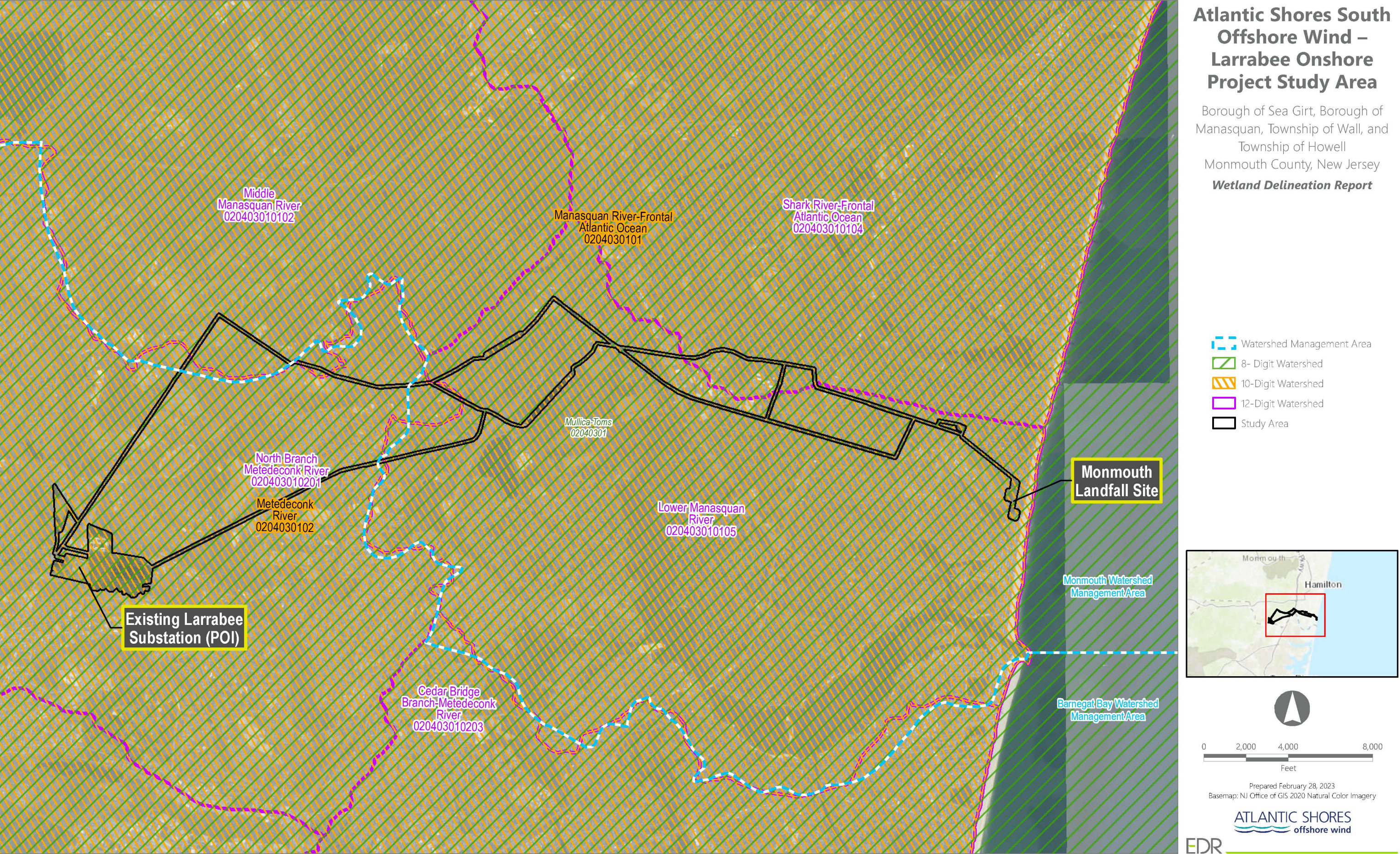
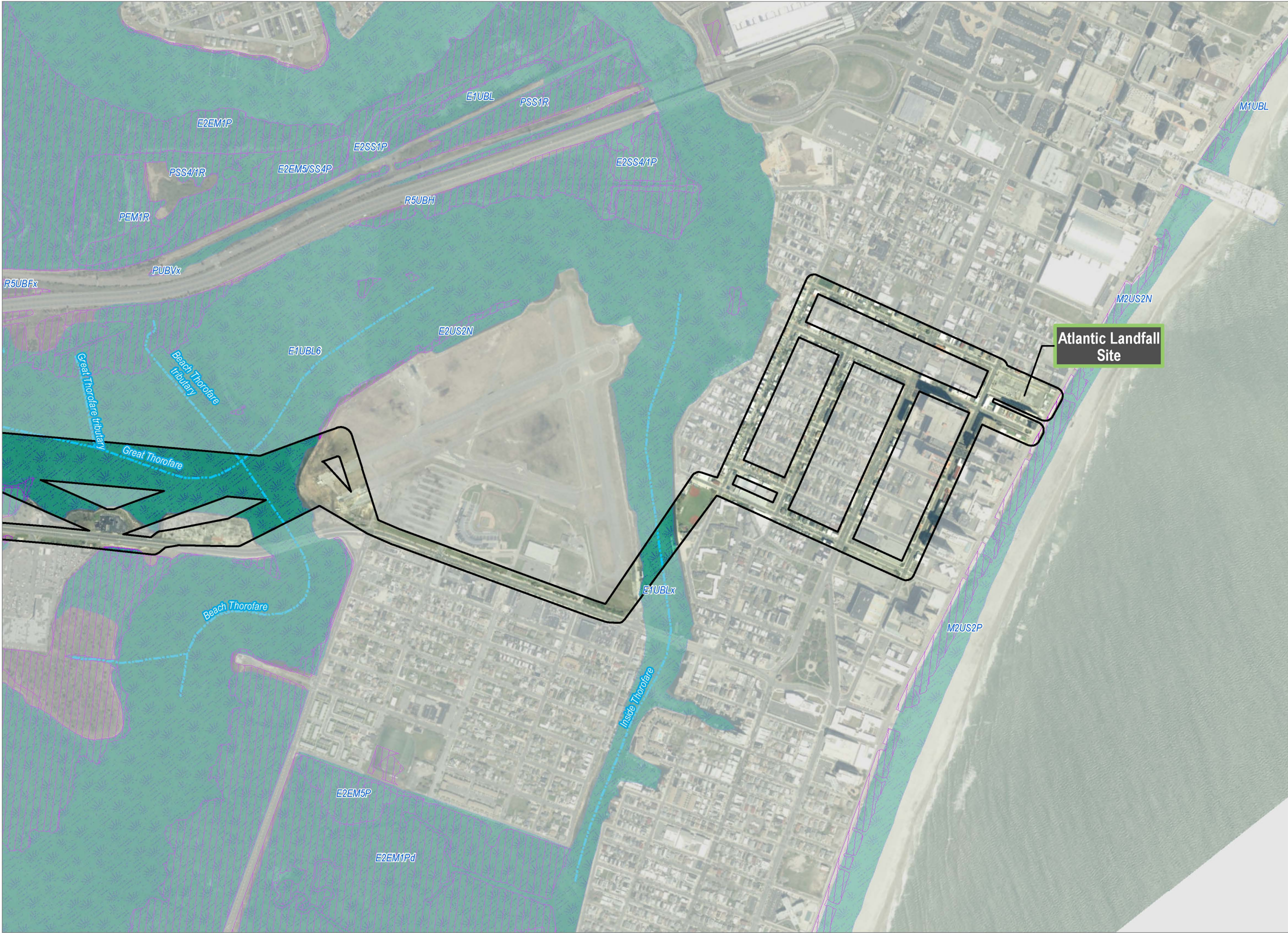


Figure 4
NJDEP/NWI-Mapped Wetlands and Streams

Figure 4. NJDEP/NWI Mapped Wetlands and Streams

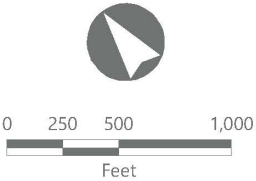
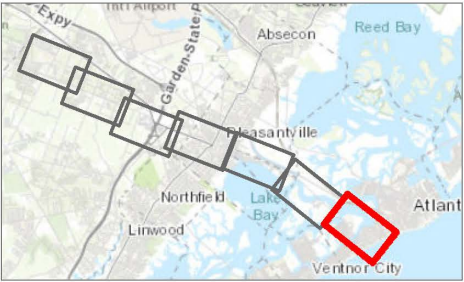


**Atlantic Shores South
Offshore Wind –
Cardiff and O&M
Facility Study Areas**

City of Atlantic City, City of
Pleasantville, and Egg Harbor
Township, Atlantic County,
New Jersey

Wetland Delineation Report

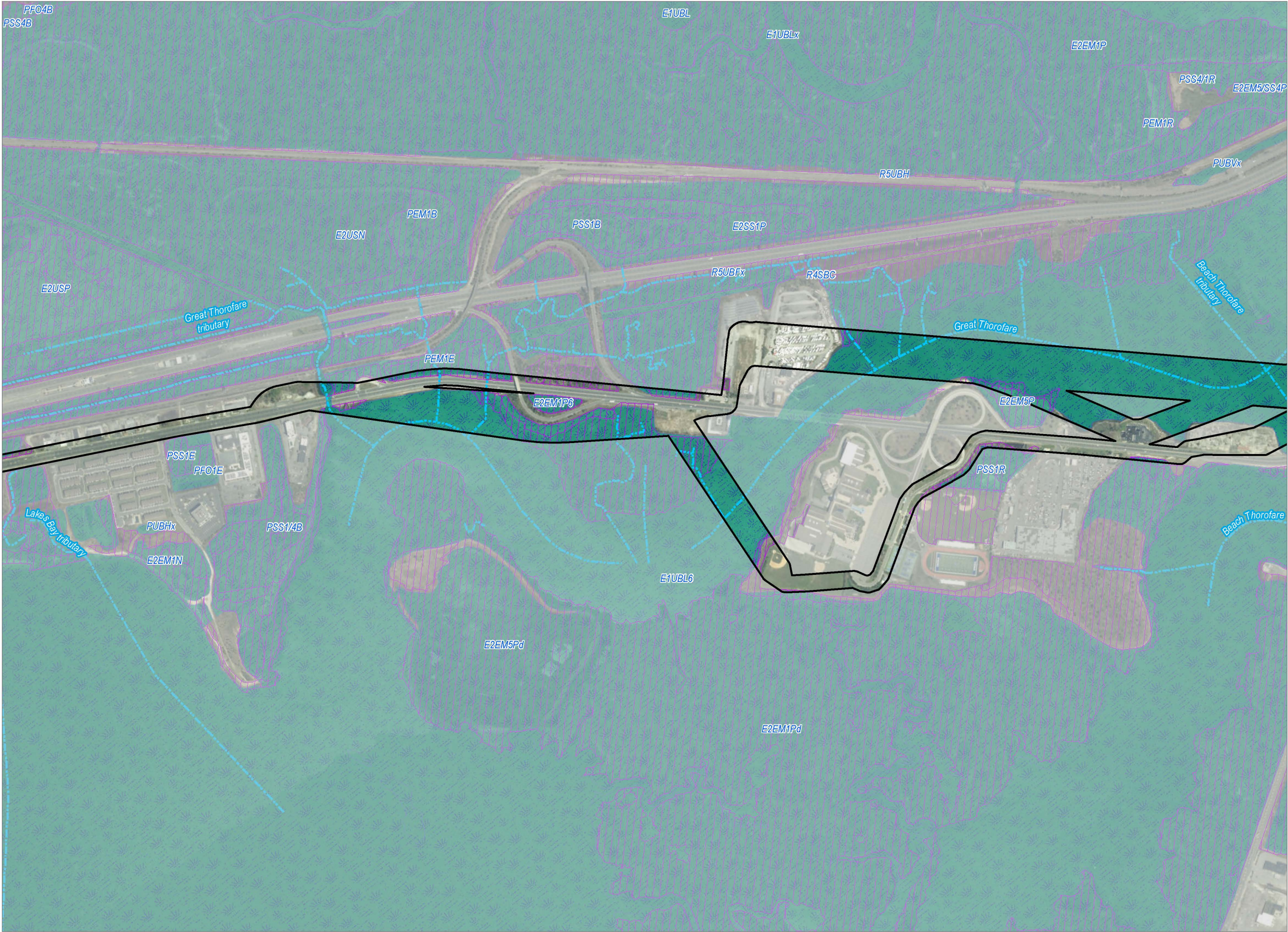
- Stream
- NJDEP Wetland
- NWI Wetland
- Study Area



Prepared November 22, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

Figure 4. NJDEP/NWI Mapped Wetlands and Streams

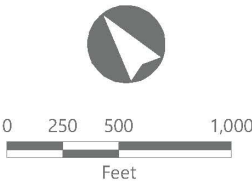


**Atlantic Shores South
Offshore Wind –
Cardiff and O&M
Facility Study Areas**

City of Atlantic City, City of
Pleasantville, and Egg Harbor
Township, Atlantic County,
New Jersey

Wetland Delineation Report

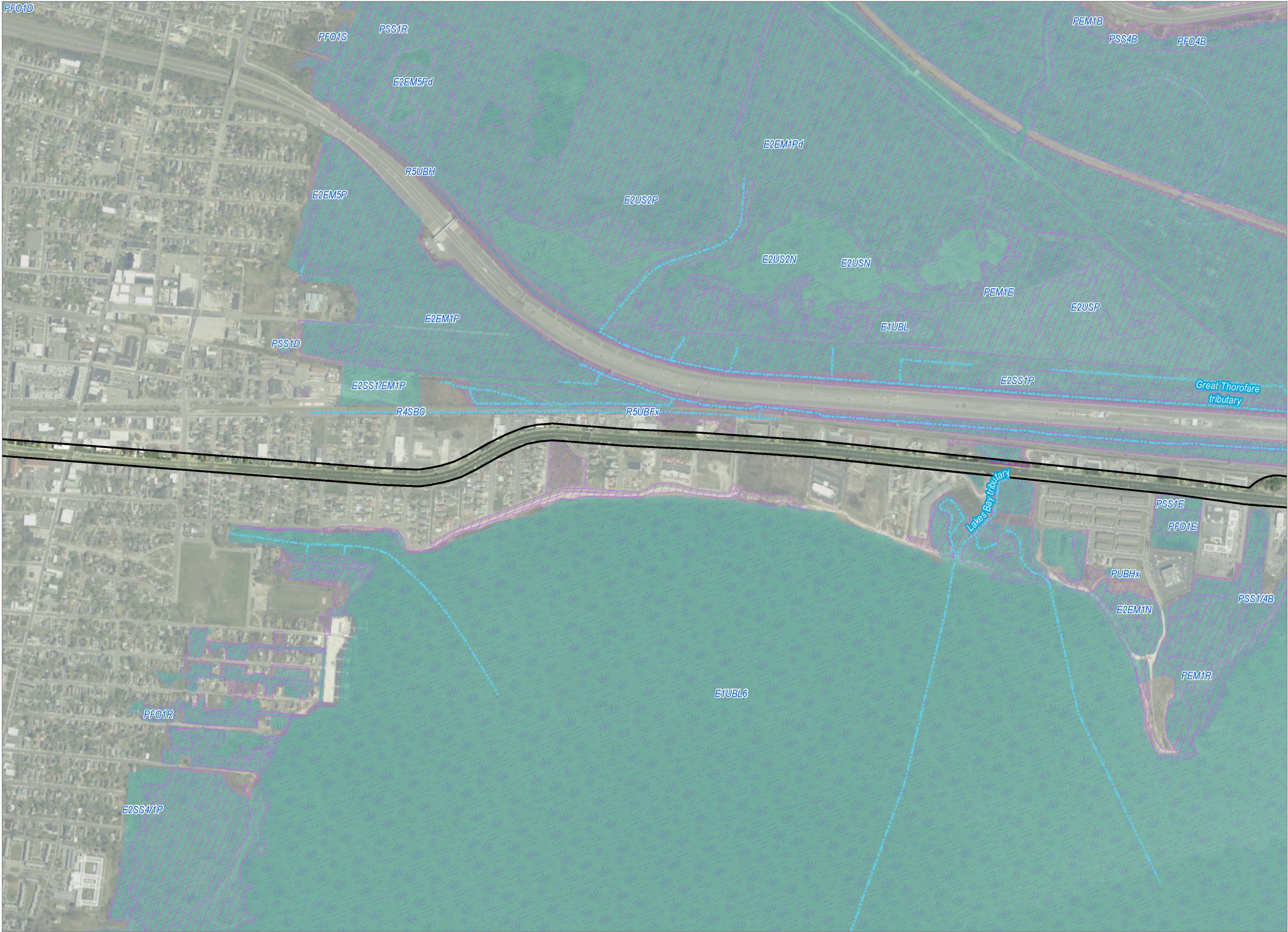
- Stream
- NJDEP Wetland
- NWI Wetland
- Study Area



Prepared November 22, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

Figure 4. NJDEP/NWI Mapped Wetlands and Streams

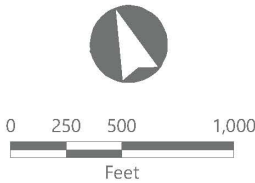
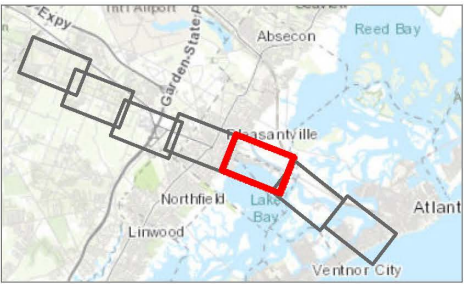


**Atlantic Shores South
Offshore Wind –
Cardiff and O&M
Facility Study Areas**

City of Atlantic City, City of
Pleasantville, and Egg Harbor
Township, Atlantic County,
New Jersey

Wetland Delineation Report

- Stream
- NJDEP Wetland
- NWI Wetland
- Study Area



Prepared November 22, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

Figure 4. NJDEP/NWI Mapped Wetlands and Streams

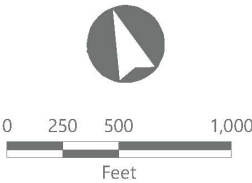
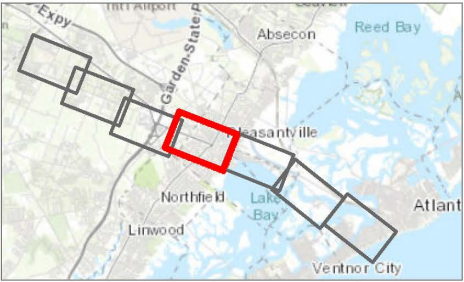


**Atlantic Shores South
Offshore Wind –
Cardiff and O&M
Facility Study Areas**

City of Atlantic City, City of
Pleasantville, and Egg Harbor
Township, Atlantic County,
New Jersey

Wetland Delineation Report

- Stream
- NJDEP Wetland
- NWI Wetland
- Study Area

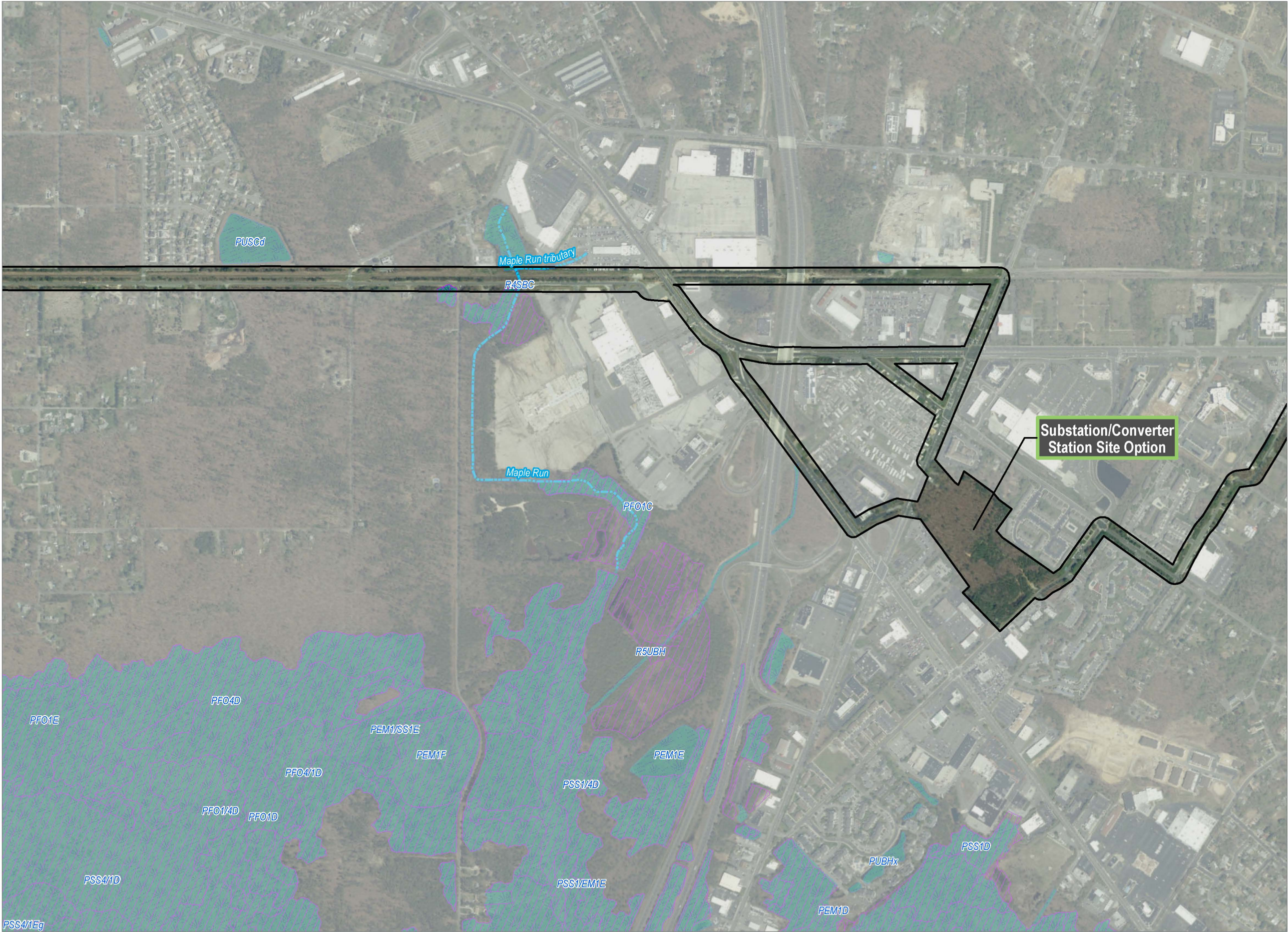


Prepared November 22, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

Figure 4. NJDEP/NWI Mapped Wetlands and Streams

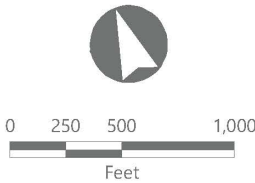


**Atlantic Shores South
Offshore Wind –
Cardiff and O&M
Facility Study Areas**

City of Atlantic City, City of
Pleasantville, and Egg Harbor
Township, Atlantic County,
New Jersey

Wetland Delineation Report

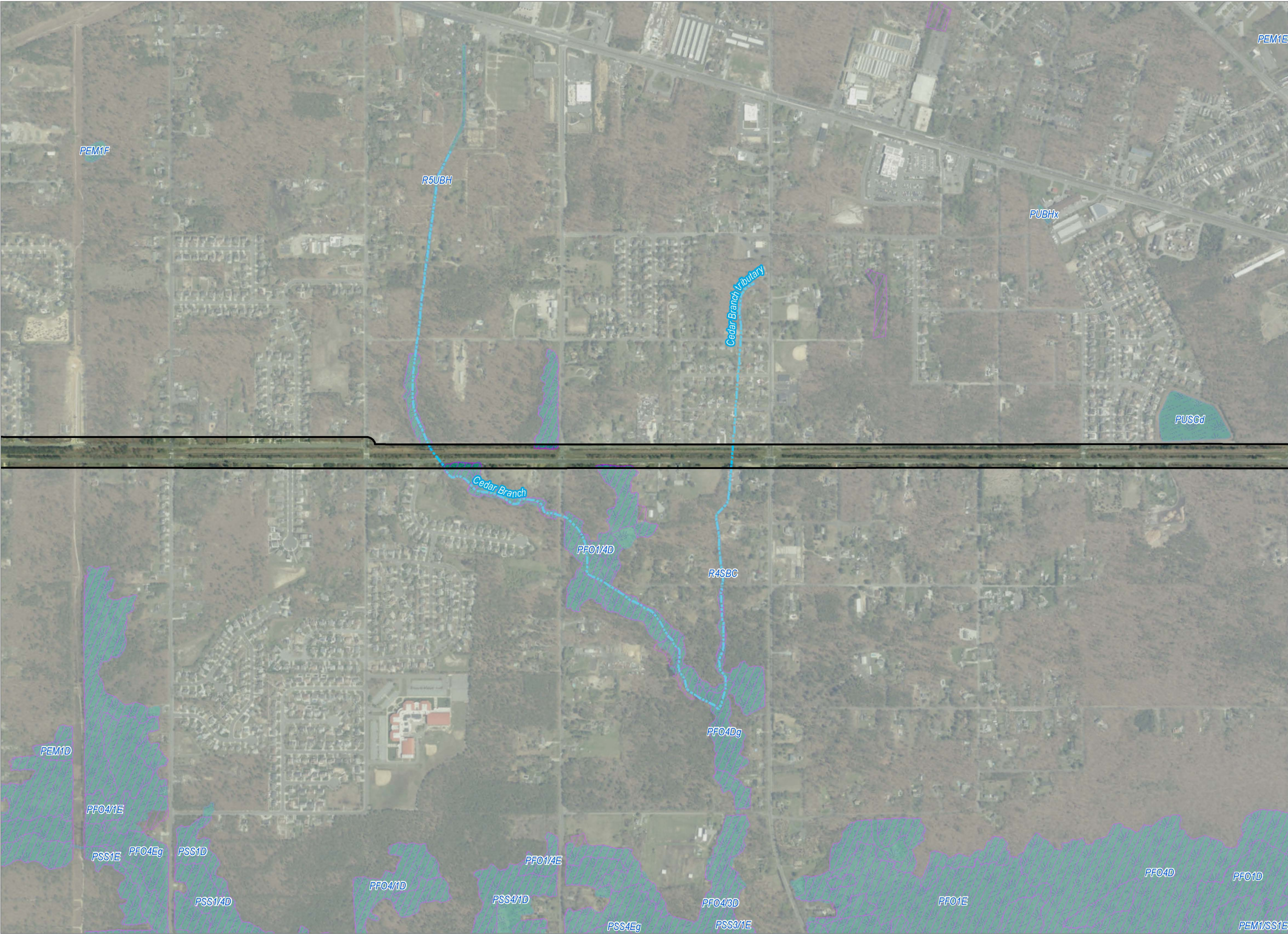
- Stream
- NJDEP Wetland
- NWI Wetland
- Study Area



Prepared November 22, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

Figure 4. NJDEP/NWI Mapped Wetlands and Streams



**Atlantic Shores South
Offshore Wind –
Cardiff and O&M
Facility Study Areas**

City of Atlantic City, City of
Pleasantville, and Egg Harbor
Township, Atlantic County,
New Jersey

Wetland Delineation Report

- Stream
- NJDEP Wetland
- NWI Wetland
- Study Area



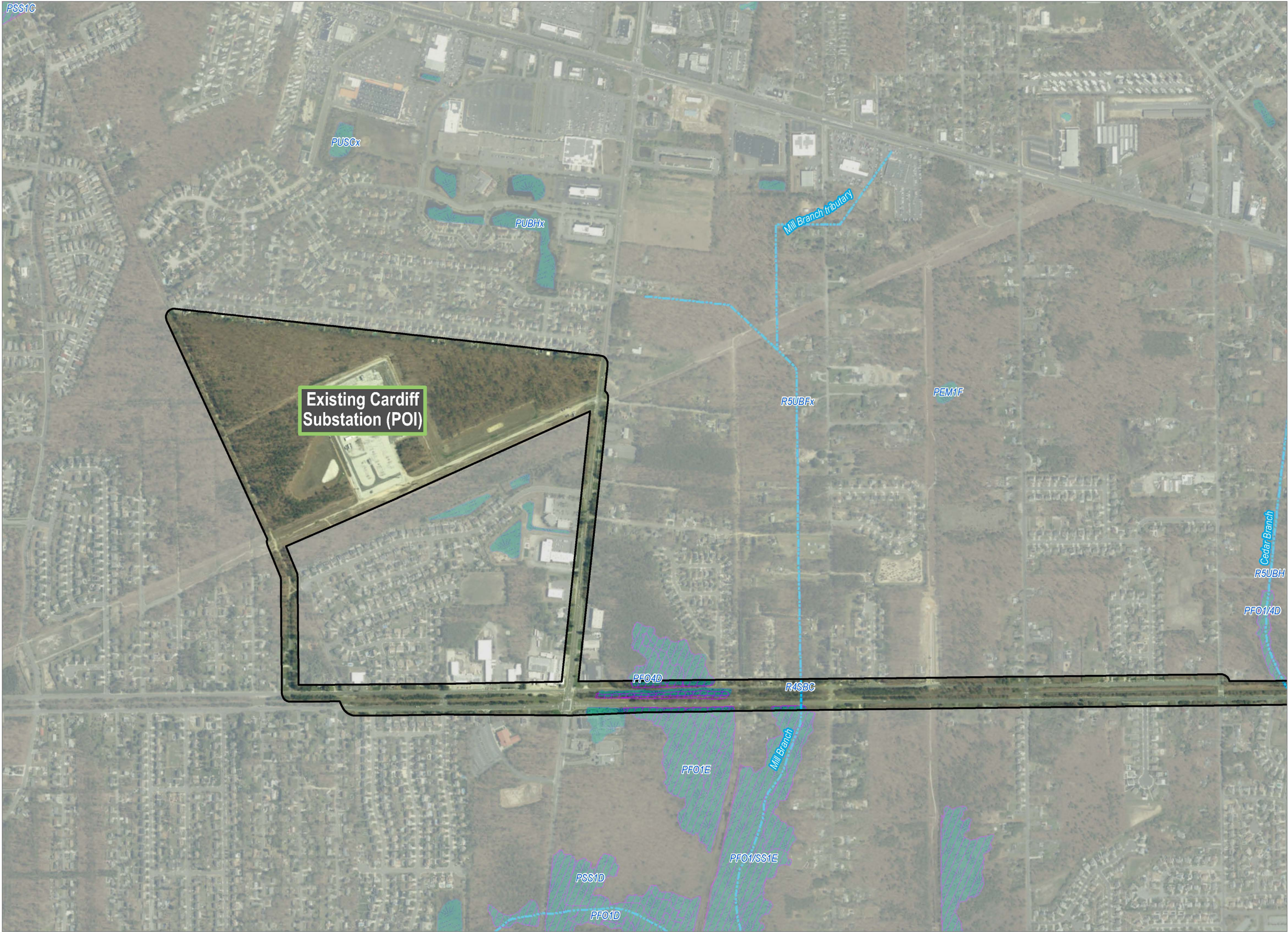
0 250 500 1,000
Feet

Prepared November 22, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

Figure 4. NJDEP/NWI Mapped Wetlands and Streams

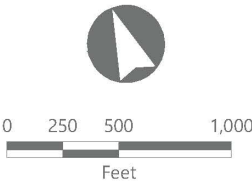
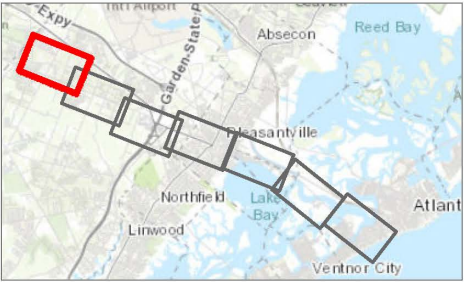


**Atlantic Shores South
Offshore Wind –
Cardiff and O&M
Facility Study Areas**

City of Atlantic City, City of
Pleasantville, and Egg Harbor
Township, Atlantic County,
New Jersey

Wetland Delineation Report

- Stream
- NJDEP Wetland
- NWI Wetland
- Study Area

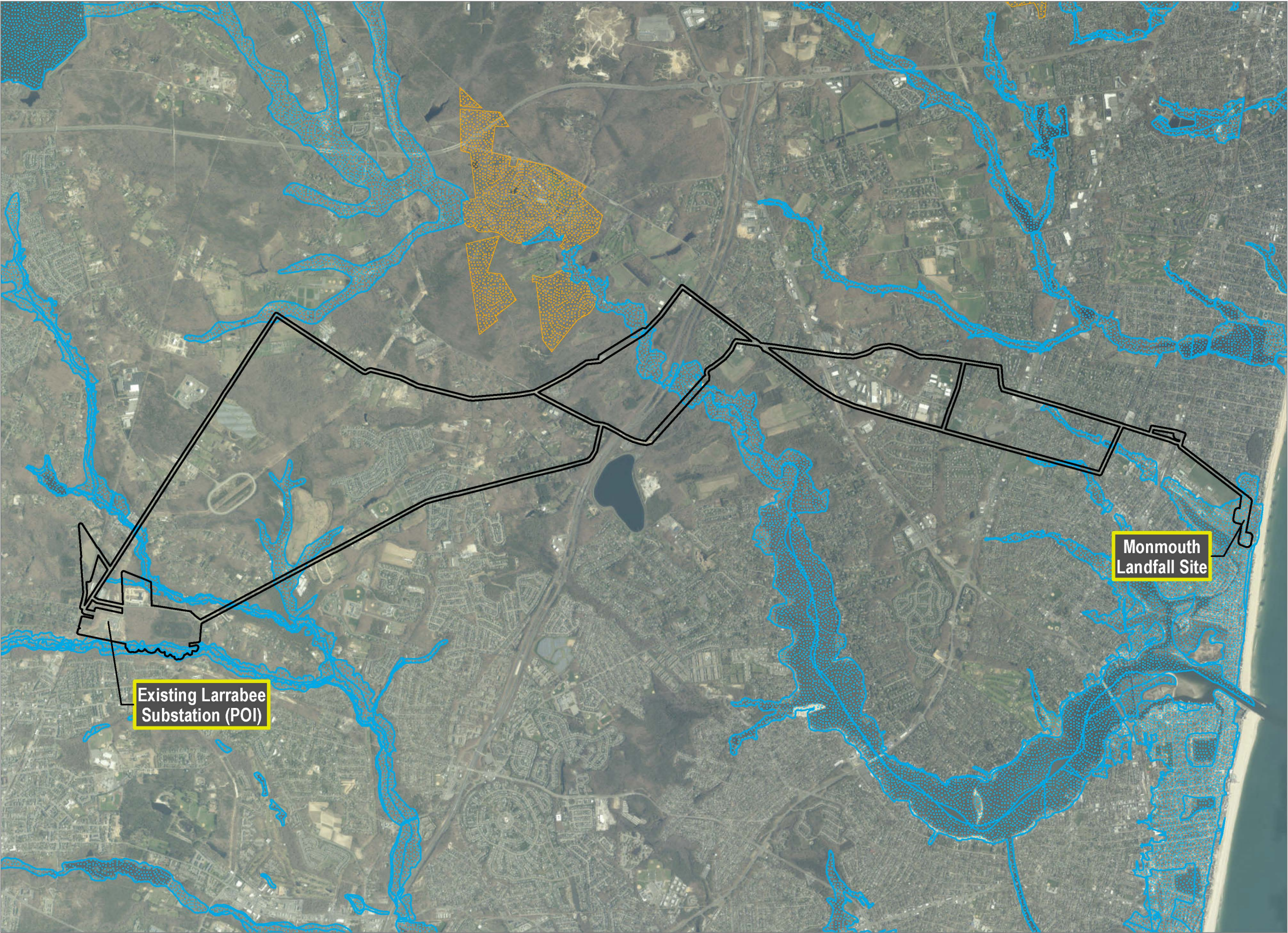


Prepared November 22, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

Figure 5
FEMA 1% Chance Annual Floodplain

Figure 5. FEMA 1% Chance Annual Floodplain

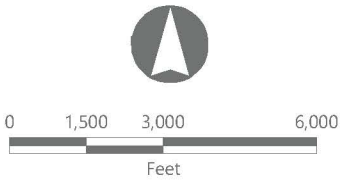


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

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



Prepared February 27, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

Figure 6
Land Use/Land Cover

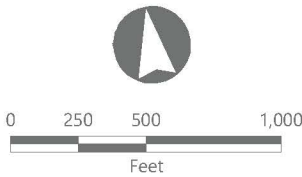
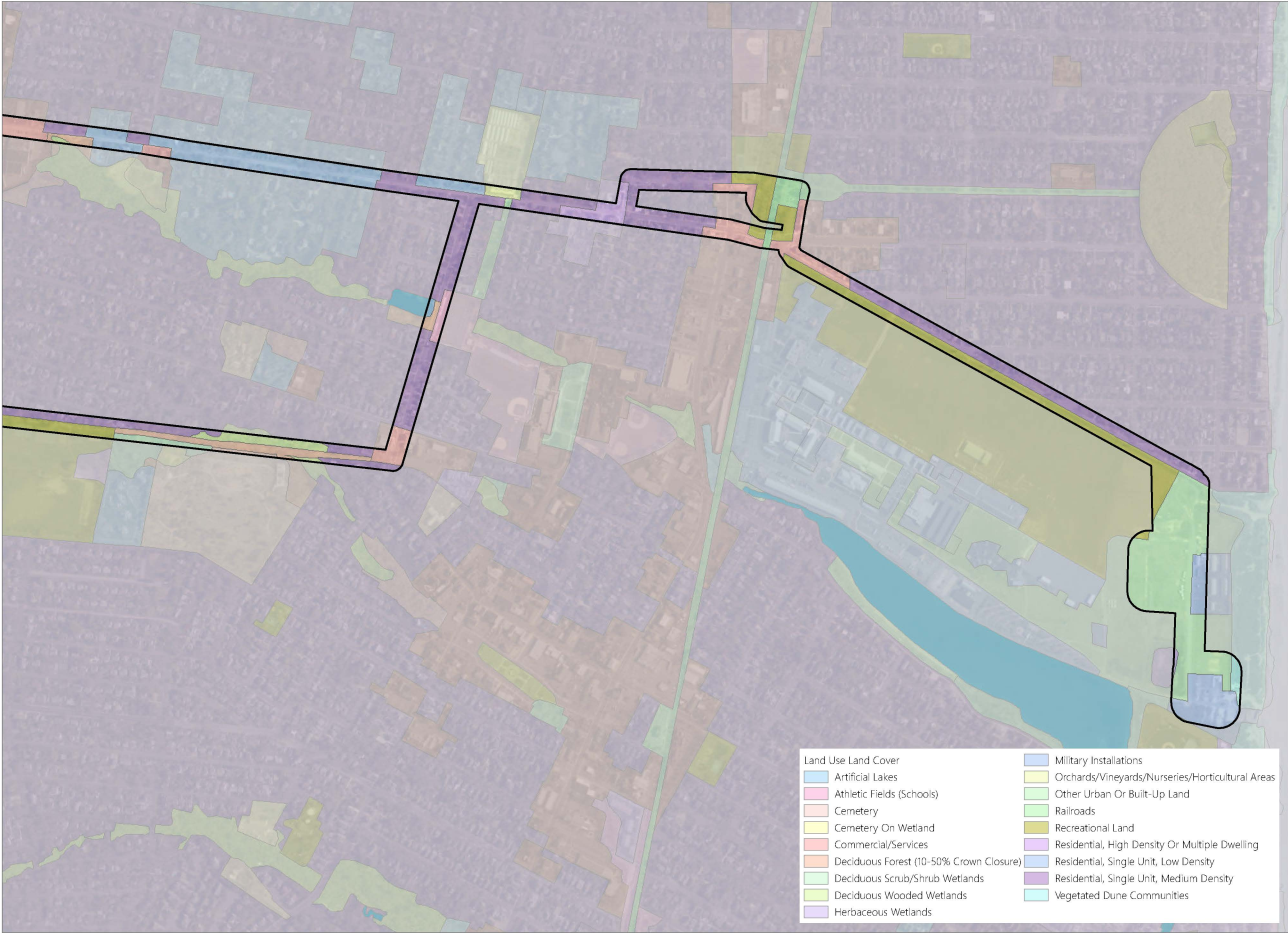
Figure 6. Land Use/Land Cover

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area

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

Wetland Delineation Report

Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

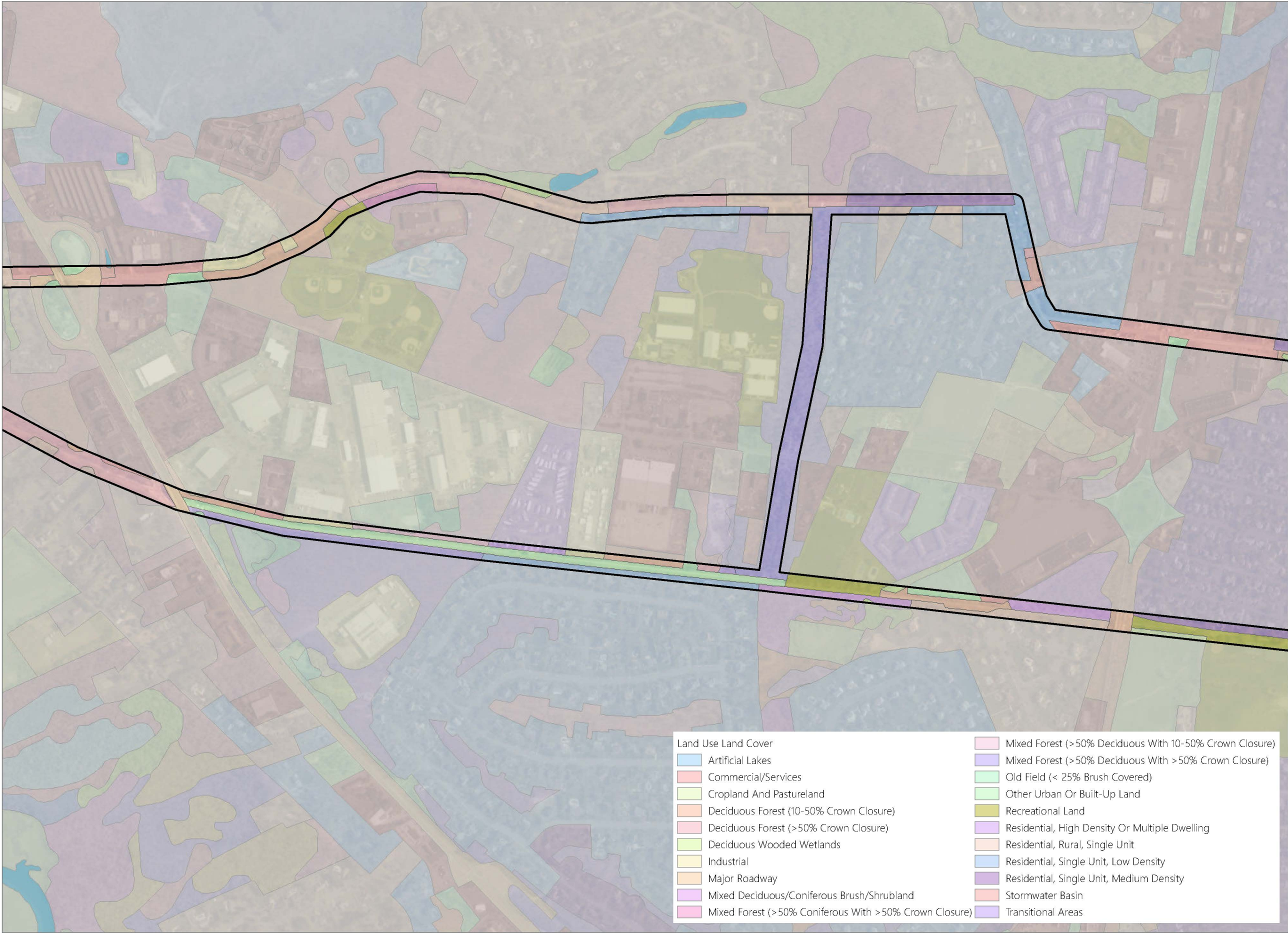
ATLANTIC SHORES
offshore wind

EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area

Borough of Sea Girt, Borough of
Manasquan, Township of Wall, and
Township of Howell
Monmouth County, New Jersey
Wetland Delineation Report

 Study Area



- Land Use Land Cover
- Artificial Lakes

Commercial/Services

Cropland And Pastureland

Deciduous Forest (10-50% Crown Closure)

Deciduous Forest (>50% Crown Closure)

Deciduous Wooded Wetlands

Industrial

Major Roadway

Mixed Deciduous/Coniferous Brush/Shrubland

Mixed Forest (>50% Coniferous With >50% Crown Closure)

Mixed Forest (>50% Deciduous With 10-50% Crown Closure)

Mixed Forest (>50% Deciduous With >50% Crown Closure)

Old Field (< 25% Brush Covered)

Other Urban Or Built-Up Land

Recreational Land

Residential, High Density Or Multiple Dwelling

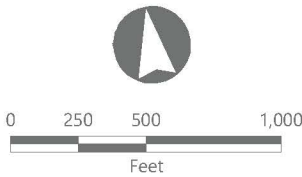
Residential, Rural, Single Unit

Residential, Single Unit, Low Density

Residential, Single Unit, Medium Density

Stormwater Basin

Transitional Areas



Prepared February 27, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

Figure 6. Land Use/Land Cover

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area

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

Wetland Delineation Report

Study Area

- Land Use Land Cover
- Bridge Over Water

Cemetery

Commercial/Services

Coniferous Forest (10-50% Crown Closure)

Coniferous Forest (>50% Crown Closure)

Cropland And Pastureland

Deciduous Brush/Shrubland

Deciduous Forest (10-50% Crown Closure)

Deciduous Forest (>50% Crown Closure)

Deciduous Wooded Wetlands

Major Roadway

Mixed Deciduous/Coniferous Brush/Shrubland

Mixed Forest (>50% Coniferous With >50% Crown Closure)

Mixed Forest (>50% Deciduous With 10-50% Crown Closure)

Mixed Forest (>50% Deciduous With >50% Crown Closure)

Mixed Wooded Wetlands (Deciduous Dom.)

Natural Lakes

Other Agriculture

Other Urban Or Built-Up Land

Plantation

Recreational Land

Residential, Rural, Single Unit

Residential, Single Unit, Low Density

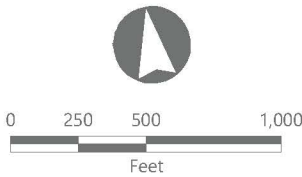
Residential, Single Unit, Medium Density

Streams And Canals

Transitional Areas

Transportation/Communication/Utilities

Undifferentiated Barren Lands



Prepared February 27, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

Figure 6. Land Use/Land Cover

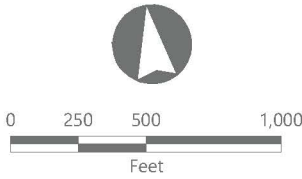


Atlantic Shores South Offshore Wind – Larrabee Onshore Project Study Area

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR



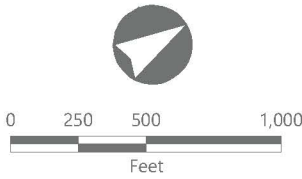
- Land Use Land Cover
- Agricultural Wetlands (Modified)
 - Artificial Lakes
 - Commercial/Services
 - Confined Feeding Operations
 - Coniferous Forest (10-50% Crown Closure)
 - Coniferous Wooded Wetlands
 - Cropland And Pastureland
 - Deciduous Brush/Shrubland
 - Deciduous Forest (>50% Crown Closure)
 - Deciduous Wooded Wetlands
 - Disturbed Wetlands (Modified)
 - Former Agricultural Wetland (Becoming Shrubby, Not Built-Up)
 - Industrial
 - Mixed Deciduous/Coniferous Brush/Shrubland
 - Mixed Wooded Wetlands (Deciduous Dom.)
 - Other Agriculture
 - Other Urban Or Built-Up Land
 - Residential, Rural, Single Unit
 - Residential, Single Unit, Low Density
 - Transportation/Communication/Utilities
 - Upland Rights-Of-Way Undeveloped

**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

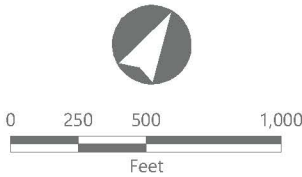
Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area

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

Wetland Delineation Report

Study Area

- Land Use Land Cover
- Agricultural Wetlands (Modified)
 - Altered Lands
 - Commercial/Services
 - Coniferous Forest (>50% Crown Closure)
 - Cropland And Pastureland
 - Deciduous Forest (>50% Crown Closure)
 - Deciduous Wooded Wetlands
 - Mixed Forest (> 50% Coniferous With >50% Crown Closure)
 - Mixed Forest (> 50% Deciduous With >50% Crown Closure)
 - Mixed Wooded Wetlands (Deciduous Dom.)
 - Orchards/Vineyards/Nurseries/Horticultural Areas
 - Other Agriculture
 - Other Urban Or Built-Up Land
 - Recreational Land
 - Residential, Rural, Single Unit
 - Residential, Single Unit, Low Density
 - Residential, Single Unit, Medium Density



Prepared February 27, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

Figure 6. Land Use/Land Cover

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Study Area

Borough of Sea Girt, Borough of
Manasquan, Township of Wall, and
Township of Howell
Monmouth County, New Jersey
Wetland Delineation Report

 Study Area






































0 250 500 1,000
Feet

Prepared February 27, 2023
Basemap: NJ Office of GIS 2020 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

Land Use Land Cover			
 Agricultural Wetlands (Modified)	 Cropland And Pastureland	 Mixed Forest (> 50% Deciduous With 10-50% Crown Closure)	 Recreational Land
 Altered Lands	 Deciduous Brush/Shrubland	 Mixed Forest (> 50% Deciduous With >50% Crown Closure)	 Residential, High Density Or Multiple Dwelling
 Artificial Lakes	 Deciduous Forest (10-50% Crown Closure)	 Mixed Scrub/Shrub Wetlands (Deciduous Dom.)	 Residential, Rural, Single Unit
 Commercial/Services	 Deciduous Forest (>50% Crown Closure)	 Mixed Wooded Wetlands (Coniferous Dom.)	 Residential, Single Unit, Low Density
 Coniferous Brush/Shrubland; Coniferous Brush/shrubland	 Deciduous Wooded Wetlands	 Mixed Wooded Wetlands (Deciduous Dom.)	 Streams And Canals
 Coniferous Forest (10-50% Crown Closure)	 Disturbed Wetlands (Modified)	 Old Field (< 25% Brush Covered)	 Transportation/Communication/Utilities
 Coniferous Forest (>50% Crown Closure)	 Industrial	 Orchards/Vineyards/Nurseries/Horticultural Areas	 Upland Rights-Of-Way Undeveloped
 Coniferous Scrub/Shrub Wetlands	 Mixed Deciduous/Coniferous Brush/Shrubland	 Other Agriculture	 Wetland Rights-Of-Way
 Coniferous Wooded Wetlands	 Mixed Forest (> 50% Coniferous With 10-50% Crown Closure)	 Other Urban Or Built-Up Land	
	 Mixed Forest (> 50% Coniferous With >50% Crown Closure)	 Railroads	

APPENDIX B

Routine Wetland Determination Data Sheets and Stream Inventory Forms

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/25/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: Wetland 1 - 1U (Upland Point)

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

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: Psammments

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: 6/20/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL 1 – 1W

Note: if a more detailed site description is necessary, provide detail here: Previous: Wetland 1 – 1 W (Wetland Point)

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.	<u>Willow sp. (Salix sp.)</u>	<u>35%</u>	<u>NA</u>	<u>Tree</u>
2.	<u>PA Smartweed (Polygonum pensylvanicum)</u>	<u>65%</u>	<u>FACW</u>	<u>Herbaceous</u>
3.	<u>Soft Rush (Juncus effusus)</u>	<u>10%</u>	<u>OBL</u>	<u>Herbaceous</u>
4.	<u>Reed Canary Grass (Phalaris arundinacea)</u>	<u>10%</u>	<u>OBL</u>	<u>Herbaceous</u>
5.	<u>Blunt Broom Sedge (Carex tribuloides)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>

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 epipedon 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: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL2 – 1U

Note: if a more detailed site description is necessary, provide detail here: Upland between pond and bike path
Previous: Wetland 4 – 1U (Upland Point)

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) Semi-maintained area

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	<u>Tree of Heaven (Ailanthus altissima)</u>	<u>50%</u>	<u>FACU</u>	<u>Tree</u>
2.	<u>Mowed Grass</u>	<u>90%</u>	<u>NA</u>	<u>Herbaceous</u>
3.	<u>Mugwort (Artemisia vulgaris)</u>	<u>50%</u>	<u>UPL</u>	<u>Herbaceous</u>
4.	<u>White Clover (Trifolium repens)</u>	<u>30%</u>	<u>FACU</u>	<u>Herbaceous</u>
5.	<u>Narroleaf Plantain (Plantago lanceolate)</u>	<u>15%</u>	<u>FACU</u>	<u>Herbaceous</u>
6.	<u>Common Plantain (Plantago major)</u>	<u>10%</u>	<u>FAC</u>	<u>Herbaceous</u>
7.	<u>Common Reed (Phragmites australis)</u>	<u>1%</u>	<u>FACW</u>	<u>Herbaceous</u>

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: 0-8" 10YR 4/4

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: Larabee 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: PFO

Previous: Wetland 3 – 1W (wetland point)

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.	<u>Red Maple (Acer rubrum)</u>	<u>80%</u>	<u>FAC</u>	<u>Tree</u>
2.	<u>Pepperbush (Clethra alnifolia)</u>	<u>60%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
3.	<u>Sweetgum (Liquidambar styraciflua)</u>	<u>20%</u>	<u>FAC</u>	<u>Sapling/Shrub</u>
4.	<u>Skunk Cabbage (Symplocarpus foetidus)</u>	<u>60%</u>	<u>OBL</u>	<u>Herbaceous</u>
5.	<u>Cinnamon Fern (Osmunda cinnamomea)</u>	<u>30%</u>	<u>FACW</u>	<u>Herbaceous</u>
6.	<u>Jack in the Pulpit (Arisaema triphyllum)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>
7.	<u>Jewelweed (Impatiens capensis)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>

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: Matt Spadoni, Jacqueline McMillen

Date: 6/25/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL3 – 1W

Note: if a more detailed site description is necessary, provide detail here: Open water wetland with very thin emergent fringe

Previous: Wetland 4 – 1W

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.	<u>Common Reed (Phragmites australis)</u>	<u>5%</u>	<u>FACW</u>	<u>Herbaceous</u>
2.	<u>Yellow Pond Lilly (Nuphar lutea)</u>	<u>60%</u>	<u>OBL</u>	<u>Herbaceous</u>
3.	<u>Soft Rush (Juncus effuses)</u>	<u>20%</u>	<u>OBL</u>	<u>Herbaceous</u>
4.	<u>Lurid Sedge (Carex lurida)</u>	<u>20%</u>	<u>OBL</u>	<u>Herbaceous</u>
5.	<u>White Clover (Trifolium repens)</u>	<u>1%</u>	<u>FACU</u>	<u>Herbaceous</u>
6.	<u>Virginia Creeper (Parthenocissus quinquefolia)</u>	<u>1%</u>	<u>FACU</u>	<u>Herbaceous</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Water Subgroup: Water

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: Soils were not accessible – wetland is a pond

Mottle Colors: N/A

Other hydric soil indicators: N/A

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Wetland area is an open water pond, soils were not accessible

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 5"+

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: 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.	<u>Fireweed (Chamerion angustifolium)</u>	<u>30%</u>	<u>NA</u>	<u>Herbaceous</u>
2.	<u>Goldenrod (Solidago canadensis)</u>	<u>50%</u>	<u>FACU</u>	<u>Herbaceous</u>
3.	<u>Honeysuckle Vine (Lonicera japonica)</u>	<u>20%</u>	<u>FACU</u>	<u>Herbaceous</u>
4.	<u>Mugwort (Artemisia vulgaris)</u>	<u>30</u>	<u>UPL</u>	<u>Herbaceous</u>

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.	<u>Red Maple (Acer rubrum)</u>	<u>80%</u>	<u>FAC</u>	<u>Tree</u>
2.	<u>Pepperbush (Clethra alnifolia)</u>	<u>60%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
3.	<u>Sweetgum (Liquidambar styraciflua)</u>	<u>20%</u>	<u>FAC</u>	<u>Sapling/Shrub</u>
4.	<u>Skunk Cabbage (Symplocarpus foetidus)</u>	<u>60%</u>	<u>OBL</u>	<u>Herbaceous</u>
5.	<u>Cinnamon Fern (Osmunda cinnamomea)</u>	<u>30%</u>	<u>FACW</u>	<u>Herbaceous</u>
6.	<u>Jack in the Pulpit (Arisaema triphyllum)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>
7.	<u>Jewelweed (Impatiens capensis)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>

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.	<u>Kentucky Bluegrass (Poa pratensis)</u>	80	FACU	Herbaceous
2.	<u>Red Fescue (Festuca rubra)</u>	20	FACU	Herbaceous
3.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
4.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
5.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
6.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
7.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
8.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
9.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
10.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
11.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
12.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
13.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
14.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
15.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>

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 epiedon 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.	<u>Common Reed (<i>Phragmites australis</i>)</u>	40	FACW	Herbaceous
2.	<u>Marsh Fern (<i>Thelypteris palustris</i>)</u>	25	FACW	Herbaceous
3.	<u>Skunk Cabbage (<i>Symplocarpus foetidus</i>)</u>	20	OBL	Herbaceous
4.	<u>Allegheny Blackberry (<i>Rubus allegheniensis</i>)</u>	5	FACU	Herbaceous
5.	<u>White Goldenrod (<i>Solidago bicolor</i>)</u>	5	FAC	Herbaceous
6.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
7.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
8.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
9.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
10.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
11.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
12.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
13.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
14.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
15.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>

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 epiedon 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.	<u>American Holly (Ilex opaca)</u>	30	FAC	Tree
2.	<u>Mountain Laurel (Kalmia latifolia)</u>	15	FACU	Tree
3.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
4.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
5.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
6.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
7.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
8.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
9.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
10.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
11.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
12.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
13.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
14.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
15.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>

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 epiedon 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.	<u>Swamp White Oak (Quercus bicolor)</u>	30	FACW	Tree
2.	<u>American Holly (Ilex opaca)</u>	30	FAC	Tree
3.	<u>Roundleaf Green Briar (Smilax rotundifolia)</u>	5	FAC	Herbaceous
4.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
5.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
6.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
7.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
8.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
9.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
10.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
11.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
12.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
13.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
14.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
15.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>

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 epiedon 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: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL7 -1U

Note: if a more detailed site description is necessary, provide detail here: Previous: Wetland 19 – 1U (Upland Point)

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.	<u>White Clover (Trifolium repens)</u>	<u>30%</u>	<u>FACU</u>	<u>Herbaceous</u>
2.	<u>Kentucky Blue Grass (Poa pratensis)</u>	<u>50%</u>	<u>FACU</u>	<u>Herbaceous</u>
3.	<u>Buttercup (Ranunculus repens)</u>	<u>20%</u>	<u>FAC</u>	<u>Herbaceous</u>

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: 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: 0-8 10yr 3/2

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: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL7 – 1W

Note: if a more detailed site description is necessary, provide detail here: Wetland fringe around a small spring fed pond. Tadpoles and frogs observed at time of investigation.

Previous: Wetland 19 – 1W (Wetland Point)

Do normal environmental conditions exist at the plant community?

Yes ☐ No ☒ (If no, explain) maintained horse/cow pasture, grasses have been mowed

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

Yes ☒ No ☐ (If yes, explain) maintained horse/cow pasture, grasses have been mowed

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	<u>Duckweed (Lemna minor)</u>	<u>95%</u>	<u>OBL</u>	<u>Herbaceous</u>
2.	<u>Water Chestnut (Trapa natans)</u>	<u>10%</u>	<u>OBL</u>	<u>Herbaceous</u>
3.	<u>Mowed Juncus (Juncus sp.)</u>	<u>90%</u>	<u>NA</u>	<u>Herbaceous</u>

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

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 epipedon present? Yes ☒ No ☐

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

Matrix Color: 0-8" 10yr 2/1 sandy muck

Mottle Colors: N/A

Other hydric soil indicators: Low chroma soil

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

Is the ground surface inundated? Yes ☒ No ☐ Surface water depth: 1-6"+

Is the soil saturated? Yes ☒ No ☐

Depth to free-standing water in pit/soil probe hole: 1"

List of other field evidence of surface inundation or soil saturation: sparsely vegetated surface, aquatic organisms

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL7 -2U

Note: if a more detailed site description is necessary, provide detail here: Upland area, sprayed this year. Most of the new growth was impacted

Previous: Wetland 19 – 2U (Upland Point)

Do normal environmental conditions exist at the plant community?

Yes ☐ No ☒ (If no, explain) Herbicide was recently used

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

Yes ☒ No ☐ (If yes, explain) Herbicide was recently used

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	<u>Pitch Pine (Pinus rigida)</u>	<u>5%</u>	<u>FACU</u>	<u>Sapling/Shrub</u>
2.	<u>Lowbush Blueberry (Vaccinium angustifolium)</u>	<u>80%</u>	<u>FACU</u>	<u>Sapling/Shrub</u>
3.	<u>Grass sp.</u>	<u>90%</u>	<u>NA</u>	<u>Herbaceous</u>
4.	<u>Soft Rush (Juncus effuses)</u>	<u>1%</u>	<u>OBL</u>	<u>Herbaceous</u>

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

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 3/2, 4-12" 5yr 4/6 loamy 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: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL7 – 2W

Note: if a more detailed site description is necessary, provide detail here: Wetland along stream and in low lying area
Previous: Wetland 19 – 2W (Wetland Point)

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.	<u>Highbush Blueberry (Vaccinium corymbosum)</u>	<u>5%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
2.	<u>Soft Rush (Juncus effuses)</u>	<u>40%</u>	<u>OBL</u>	<u>Herbaceous</u>
3.	<u>Tearthumb (Polygonum sagittatum)</u>	<u>5%</u>	<u>OBL</u>	<u>Herbaceous</u>
4.	<u>Japanese Stiltgrass (Microstegium vimineum)</u>	<u>10%</u>	<u>FAC</u>	<u>Herbaceous</u>
5.	<u>Blunt Spikerush (Eleocharis obtuse)</u>	<u>90%</u>	<u>OBL</u>	<u>Herbaceous</u>
6.	<u>White Meadowsweet (Spirea alba)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>
7.	<u>Broom Sedge (Carex scoparia)</u>	<u>20%</u>	<u>FACW</u>	<u>Herbaceous</u>
8.	<u>Swamp Loostrife (Decodon verticillatus)</u>	<u>30%</u>	<u>OBL</u>	<u>Herbaceous</u>
9.	<u>Rice Cutgrass (Leersia oryzoides)</u>	<u>70%</u>	<u>OBL</u>	<u>Herbaceous</u>

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: 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: 0-6" 10yr 3/1; 6-18" 10yr 2/1 (95%) organic loam

Mottle Colors: 6-18" 10yr 5/8 (5%) redox features, pore linings present

Other hydric soil indicators: Low chroma matrix, hydrogen sulfide smell

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: hydrogen sulfide smell

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL8 – 1U

Note: if a more detailed site description is necessary, provide detail here: Previous: Wetland 20 – 1U

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.	<u>Pitch Pine (Pinus rigida)</u>	<u>10%</u>	<u>FACU</u>	<u>Sapling/Shrub</u>
2.	<u>Greenbriar (Smilax rotundifolia)</u>	<u>10%</u>	<u>FAC</u>	<u>Woody Vine</u>
3.	<u>Upland Grass species</u>	<u>35%</u>	<u>NA</u>	<u>Herbaceous</u>

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: 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: 0-6" 10yr 2/1, 6-14" 10yr 4/4 (60%)

Mottle Colors: 6-14" 10yr 5/3 (40%)

Other hydric soil indicators:

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: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL8 – 1W

Note: if a more detailed site description is necessary, provide detail here: Spot between two wetland communities that appear to be connected

Previous: Wetland 20 – 1W (Wetland Point)

Do normal environmental conditions exist at the plant community?

Yes ☐ No ☒ (If no, explain) Dead vegetation (possibly from Herbicide)

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

Yes ☒ No ☐ (If yes, explain) Dead vegetation (possibly from Herbicide)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	<u>Dead Red Maples (Acer rubrum)</u>	<u>10%</u>	<u>FAC</u>	<u>Tree</u>
2.	<u>Dead Red Maples (Acer rubrum)</u>	<u>5%</u>	<u>FAC</u>	<u>Sapling/Shrub</u>
3.	<u>Deertongue (Dichanthelium clandestinum)</u>	<u>5%</u>	<u>FACW</u>	<u>Herbaceous</u>
4.	<u>Fox Sedge (Carex vulpinoidea)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>
5.	<u>Grass sp.</u>	<u>50%</u>	<u>NA</u>	<u>Herbaceous</u>
6.	<u>Rice Cutgrass (Leersia oryzoides)</u>	<u>70%</u>	<u>OBL</u>	<u>Herbaceous</u>
7.	<u>Bottlebrush Sedge (Carex hystericina)</u>	<u>5%</u>	<u>OBL</u>	<u>Herbaceous</u>
8.	<u>Common Reed (Phragmites australis)</u>	<u>80%</u>	<u>FACW</u>	<u>Herbaceous</u>
9.	<u>Japanese Knotweed (Polygonum cuspidatum)</u>	<u>50%</u>	<u>UPL</u>	<u>Herbaceous</u>

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: 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: 0-6" 10yr 2/1 organic sand, 6-16" 10yr 4/2 sandy

Mottle Colors: N/A

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: Hydrogen Sulfide Smell

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL8 – 2W

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

Previous: Wetland 20 – 2W

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.	<u>Pepperbush (Clethra alnifolia)</u>	<u>45%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
2.	<u>Pitch Pine (Pinus rigida)</u>	<u>10%</u>	<u>FACU</u>	<u>Sapling/Shrub</u>
3.	<u>Sphagnum moss (Sphagnum sp.)</u>	<u>90%</u>	<u>NA</u>	<u>Herbaceous</u>
4.	<u>Skunk Cabbage (Symplocarpus foetidus)</u>	<u>15%</u>	<u>OBL</u>	<u>Herbaceous</u>
5.	<u>Common Reed (Phragmites australis)</u>	<u>20%</u>	<u>FACW</u>	<u>Herbaceous</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: Without the identification of specific species for the sphagnum moss, the percent of dominant hydrophytic species is not greater than 50%. Taking into consideration that the sphagnum moss is dominant and requires a wet environment to thrive, the vegetation should be considered hydrophytic.

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 epipedon present? Yes ☒ No ☐

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

Matrix Color: 0-12 10yr 2/2

Mottle Colors: N/A

Other hydric soil indicators: hydrogen sulfide

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: >12"

List of other field evidence of surface inundation or soil saturation: Hydrogen sulfide odor

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form
Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL9 – 1U

Note: if a more detailed site description is necessary, provide detail here: area next to maintained grass roadway along wetland boundary

Previous: Wetland 21 - Upland

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) mowed grass roadway

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	<u>Dead Cedar (Juniperus sp.)</u>	<u>5%</u>	<u>NA</u>	<u>Sapling/Shrub</u>
2.	<u>Grass sp.</u>	<u>100%</u>	<u>NA</u>	<u>Herbaceous</u>
3.	<u>Deptford Pink (Dianthus armeria)</u>	<u>1%</u>	<u>UPL</u>	<u>Herbaceous</u>
4.	<u>Deer Tongue (Dichanthelium clandestinum)</u>	<u>5%</u>	<u>FACW</u>	<u>Herbaceous</u>

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

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: 0-12" 10yr 4/4 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: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL9 – 1W

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

Previous: Wetland 21 – 1W (Wetland Point)

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.	<u>Pepperbush (Clethra alnifolia)</u>	<u>5%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
2.	<u>Pitch Pine (Pinus rigida)</u>	<u>5%</u>	<u>FACU</u>	<u>Sapling/Shrub</u>
3.	<u>Grey Birch (Betula populifolia)</u>	<u>1%</u>	<u>FAC</u>	<u>Sapling/Shrub</u>
4.	<u>Lurid Sedge (Carex lurida)</u>	<u>50%</u>	<u>OBL</u>	<u>Herbaceous</u>
5.	<u>Common Reed (Phragmites australis)</u>	<u>40%</u>	<u>FACW</u>	<u>Herbaceous</u>
6.	<u>Cinnamon Fern (Osmunda cinnamomea)</u>	<u>5%</u>	<u>FACW</u>	<u>Herbaceous</u>

Percent of Dominant Species that are OBL, FACW, and/or FAC: 75%

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 epipedon present? Yes ☐ No ☒

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

Matrix Color: 0-18" 10yr 2/2 muck

Mottle Colors: N/A

Other hydric soil indicators: Hydrogen sulfide odor

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: 4"

List of other field evidence of surface inundation or soil saturation: hydrogen sulfide odor

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: W10 -1W

Note: if a more detailed site description is necessary, provide detail here: Previous: Wetland 22 – 1W (Wetland Point)

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.	<u>Pepperbush (Clethra alnifolia)</u>	<u>20%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
2.	<u>Grey Birch (Betula populifolia)</u>	<u>1%</u>	<u>FAC</u>	<u>Sapling/Shrub</u>
3.	<u>Raspberry (Rubus occidentalis)</u>	<u>5%</u>	<u>NA</u>	<u>Sapling/Shrub</u>
4.	<u>Cinnamon fern (Osmunda cinnamomea)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>
5.	<u>Bottle Brush Sedge (Carex hystericina)</u>	<u>5%</u>	<u>OBL</u>	<u>Herbaceous</u>
6.	<u>Soft Rush (Juncus effuses)</u>	<u>5%</u>	<u>OBL</u>	<u>Herbaceous</u>
7.	<u>Wool Grass (Scirpus cypernus)</u>	<u>70%</u>	<u>OBL</u>	<u>Herbaceous</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Lakehurst sand/Entisols

Subgroup: Psamments

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, 3-16" 10yr 6/3 sandy loam

Mottle Colors: 3-16" 10yr 6/8 redox features

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: 6"

List of other field evidence of surface inundation or soil saturation: geomorphological position

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL10 & WL11 – 1U

Note: if a more detailed site description is necessary, provide detail here: Previous: Wetlands 22 & 23 – 1U

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.	<u>Sweet Fern (Comptonia peregrina)</u>	<u>70%</u>	<u>NA</u>	<u>Herbaceous</u>
2.	<u>Grass species</u>	<u>50%</u>	<u>NA</u>	<u>Herbaceous</u>

Percent of Dominant Species that are OBL, FACW, and/or FAC: N/A

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Entisols Subgroup: Psammments

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: 0-12" 10yr 4/4 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: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL11 – 1W

Note: if a more detailed site description is necessary, provide detail here: Previous: Wetland 23 – 1W

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.	<u>Narrowleaf Cattail (Typha angustifolia)</u>	<u>85%</u>	<u>OBL</u>	<u>Herbaceous</u>
2.	<u>Sensitive Fern (Onoclea sensibilis)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>
3.	<u>Joe Pye Weed (Eutrochium maculatum)</u>	<u>10%</u>	<u>FACW</u>	<u>Herbaceous</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Lakehurst sand/Entisols

Subgroup: Psammments

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 2/2

Mottle Colors: N/A

Other hydric soil indicators:

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Matched with hydric vegetation and hydrology it indicates that the borderline soil should be considered hydric.

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: 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: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL12 – 1U

Note: if a more detailed site description is necessary, provide detail here: Previous: Wetland 24 – 1U (upland point)

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.	<u>Spicebush (Lindera benzoin)</u>	<u>15%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
2.	<u>Lowbush Blueberry (Vaccinium angustifolium)</u>	<u>25%</u>	<u>FACU</u>	<u>Sapling/Shrub</u>
3.	<u>Grass sp.</u>	<u>85%</u>	<u>NA</u>	<u>Herbaceous</u>
	<u>Common cinquefoil (Potentilla simplex)</u>	<u>15%</u>	<u>FACU</u>	<u>Herbaceous</u>
4.	<u>Goldenrod (Solidago rugosa)</u>	<u>10%</u>	<u>FAC</u>	<u>Herbaceous</u>

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: Entisols Subgroup: Psammments

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: 0-7" 10yr 2/1 organic sand; 7-18" 2.5y 5/3 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: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL12 – 1W

Note: if a more detailed site description is necessary, provide detail here: Previous: Wetland 24 – 1W (Wetland Point)

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.	<u>Highbush blueberry (Vaccinium corymbosum)</u>	<u>10%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
2.	<u>Pepper Bush (Clethra alnifolia)</u>	<u>25%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
3.	<u>Common Reed (Phragmites australis)</u>	<u>50%</u>	<u>FACW</u>	<u>Herbaceous</u>
4.	<u>Common Rush (Juncus effuses)</u>	<u>50%</u>	<u>OBL</u>	<u>Herbaceous</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Lakehurst sand/Entisols Subgroup: Psamments

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: 0-10 10yr 2/1 mucky

Mottle Colors:

Other hydric soil indicators: Hydrogen 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: N/a

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: hydrogen sulfide odor, landscape position

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL13 – 1U

Note: if a more detailed site description is necessary, provide detail here: Hillslope next to wetland boundary

Previous: Wetland 25 – 1U (upland point)

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.	<u>Red Pine (Pinus resinosa)</u>	<u>1%</u>	<u>FACU</u>	<u>Sapling/Shrub</u>
2.	<u>Spicebush (Lindera benzoin)</u>	<u>20%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
3.	<u>Lowbush Blueberry (Vaccinium angustifolium)</u>	<u>15%</u>	<u>FACU</u>	<u>Sapling/Shrub</u>
4.	<u>Raspberry (Rubus occidentalis)</u>	<u>20%</u>	<u>NA</u>	<u>Sapling/Shrub</u>
5.	<u>Grass sp.</u>	<u>95%</u>	<u>NA</u>	<u>Herbaceous</u>
6.	<u>Common cinquefoil (Potentilla simplex)</u>	<u>20%</u>	<u>FACU</u>	<u>Herbaceous</u>
7.	<u>Bracken Fern (Pteridium aquilinum)</u>	<u>5%</u>	<u>NA</u>	<u>Herbaceous</u>
8.	<u>Goldenrod (Solidago rugosa)</u>	<u>15%</u>	<u>FAC</u>	<u>Herbaceous</u>

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

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Entisols Subgroup: Psammments

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: 0-7" 10yr 2/1 organic sand; 7-18" 2.5y 5/3 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: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL13 -1W

Note: if a more detailed site description is necessary, provide detail here: Large wetland separated by grass roadway for powerline access

Previous: Wetland 25 – 1W (Wetland Point)

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) grass roadway for powerline access

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	<u>Red Maple (Acer rubrum)</u>	<u>5%</u>	<u>FAC</u>	<u>Tree</u>
2.	<u>Pepperbush (Clethra alnifolia)</u>	<u>20%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
3.	<u>Arrow arum (Peltandra virginica)</u>	<u>35%</u>	<u>OBL</u>	<u>Herbaceous</u>
4.	<u>Narrowleaf Cattail (Typha angustifolia)</u>	<u>85%</u>	<u>OBL</u>	<u>Herbaceous</u>
5.	<u>Skunk Cabbage (Symplocarpus foetidus)</u>	<u>5%</u>	<u>OBL</u>	<u>Herbaceous</u>
6.	<u>Sedge sp.</u>	<u>40%</u>	<u>NA</u>	<u>Herbaceous</u>
7.	<u>Sensitive Fern (Onoclea sensibilis)</u>	<u>5%</u>	<u>FACW</u>	<u>Herbaceous</u>
8.	<u>Intermediate Fern (Dryopteris intermedia)</u>	<u>20%</u>	<u>FACU</u>	<u>Herbaceous</u>
9.	<u>Virginia Creeper (Parthenocissus quinquefolia)</u>	<u>5%</u>	<u>FACU</u>	<u>Woody Vine</u>

Percent of Dominant Species that are OBL, FACW, and/or FAC: 75%

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Lakehurst sand & Udorthents/Entisols Subgroup: Psammments & Orthents

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 2/2 muck

Mottle Colors: N/A

Other hydric soil indicators: Hydric sulfide odor

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: hydrogen sulfide odor

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Matt Spadoni, Jacqueline McMillen

Date: 6/24/2020

Project/Site: Larabee Wetland Delineation State: NJ

County: Monmouth County

Applicant/Owner: Atlantic Shores Offshore Wind

Plant Community#/Name: WL13 – 2W

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

Previous: Wetland 25 – 2W (Wetland)

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.	<u>Pepperbush (Clethra alnifolia)</u>	<u>45%</u>	<u>FACW</u>	<u>Sapling/Shrub</u>
2.	<u>Black Willow (Salix nigra)</u>	<u>5%</u>	<u>OBL</u>	<u>Sapling/Shrub</u>
3.	<u>Common Reed (Phragmites australis)</u>	<u>98%</u>	<u>FACW</u>	<u>Herbaceous</u>
4.	<u>Skunk Cabbage (Symplocarpus foetidus)</u>	<u>5%</u>	<u>OBL</u>	<u>Herbaceous</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Lakehurst sand & Udorthents/Entisols Subgroup: Psammments & Orthents

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 2/2 muck

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: 0.5"

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: HB, AL Date: 06/23/2022

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

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: 37-W017-1U

Note: if a more detailed site description is necessary, provide detail here: Area consists of mowed grasses and is a maintained side of a roadway.

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) Soils were previously excavated and piled to create this upland berm

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Red fescue (<i>Festuca rubra</i>)	90	FACU	Herb
2.	White Clover (<i>Trifolium repens</i>)	15	FACU	Herb
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: [Click or tap here to enter text.](#)

Subgroup: [Click or tap here to enter text.](#)

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

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

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

Matrix Color: 0-3" 10YR 2/1 (100%); 3-6" 10YR 5/3 (100%) Mottle Colors: N/A

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. Refusal at 4-inches.

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, AL Date: 06/23/2022

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

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: 37-W017-1W

Note: if a more detailed site description is necessary, provide detail here: 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.	<u>Green Ash (Fraxinus pennsylvanica)</u>	50	FACW	Tree
2.	<u>Sweet Gum (Liquidambar styraciflua)</u>	30	FAC	Tree
3.	<u>Sweet Pepperbush (Clethra alnifolia)</u>	50	FACW	Sapling/Shrub
4.	<u>Highbush Blueberry (Vaccinium corymbosum)</u>	40	FACW	Sapling/Shrub
5.	<u>Species Name</u>		<u>STATUS</u>	<u>Stratum</u>
6.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
7.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
8.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
9.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
10.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
11.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
12.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
13.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
14.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
15.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: Majority of species present are FAC or FACW.

SOILS

Series/Phase: [Click or tap here to enter text.](#)

Subgroup: [Click or tap here to enter text.](#)

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 2/1 100%; 18-20" 10YR 5/3 100%

Mottle Colors: [Click or tap here to enter text.](#)

Other hydric soil indicators: [Click or tap here to enter text.](#)

Is the hydric soil criterion met? Yes ☒

No ☐

Rationale: Histosol criterion met.

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: Geomorphic position and drainage patterns.

Is the wetland hydrology criterion met? Yes ☒

No ☐

Rationale: Two secondary indicators present.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, AL Date: 06/23/2022

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

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: 37-W018-1U

Note: if a more detailed site description is necessary, provide detail here: Area consists of mowed grasses and is a maintained side of a roadway.

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) Soils were previously excavated and piled to create this upland berm

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Red fescue (<i>Festuca rubra</i>)	90	FACU	Herb
2.	White Clover (<i>Trifolium repens</i>)	15	FACU	Herb
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: [Click or tap here to enter text.](#)

Subgroup: [Click or tap here to enter text.](#)

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

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

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

Matrix Color: 0-6" 10YR 4/4 (100%) Mottle Colors: N/A

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. Refusal at 6-inches.

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, AL Date: 06/23/2022

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

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: 37-W018-1W

Note: if a more detailed site description is necessary, provide detail here: 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.	<u>Green Ash (Fraxinus pennsylvanica)</u>	50	FACW	Tree
2.	<u>Sweet Gum (Liquidambar styraciflua)</u>	30	FAC	Tree
3.	<u>Sweet Pepperbush (Clethra alnifolia)</u>	50	FACW	Sapling/Shrub
4.	<u>Highbush Blueberry (Vaccinium corymbosum)</u>	40	FACW	Sapling/Shrub
5.	<u>Species Name</u>		STATUS	Stratum
6.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
7.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
8.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
9.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
10.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
11.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
12.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
13.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
14.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum
15.	<u>Species Name</u>	<u>% Cover</u>	STATUS	Stratum

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: Majority of species present are FAC or FACW.

SOILS

Series/Phase: [Click or tap here to enter text.](#)

Subgroup: [Click or tap here to enter text.](#)

Is the soil on the hydric soils list? Yes ☐

No ☐

Undetermined ☐

Is the soil a Histosol? Yes ☐

No ☒

Histic epiedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐

Gleyed? Yes ☐ No ☒

Matrix Color: 0-4" 10YR 2/2 100%; 4-8" 10YR 3/1 98%; 8-10" 10YR 3/4 100% Mottle Colors: 7.5YR 4/6 2%

Other hydric soil indicators: Redox Dark Surface

Is the hydric soil criterion met? Yes ☒

No ☐

Rationale: Redox dark surface criterion met.

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: Geomorphic position and drainage patterns.

Is the wetland hydrology criterion met? Yes ☒

No ☐

Rationale: Two secondary indicators present.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, AL Date: 06/23/2022

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

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: 37-W018-2W

Note: if a more detailed site description is necessary, provide detail here: 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.	<u>Green Ash (<i>Fraxinus pennsylvanica</i>)</u>	10	FACW	Tree
2.	<u>Black Willow (<i>Salix nigra</i>)</u>	5	OBL	Tree
3.	<u>Red Maple (<i>Acer rubrum</i>)</u>	2	FACW	Sapling/Shrub
4.	<u>Sweet Pepperbush (<i>Clethra alnifolia</i>)</u>	10	FACW	Sapling/Shrub
5.	<u>Northern Spicebush (<i>Lindera benzoin</i>)</u>	5	FACW	Sapling/Shrub
6.	<u>Skunk Cabbage (<i>Symplocarpus foetidus</i>)</u>	80	OBL	Herb
7.	<u>Soft Rush (<i>Juncus effusus</i>)</u>	30	OBL	Herb
8.	<u>Ostrich Fern (<i>Matteuccia struthiopteris</i>)</u>	20	FACW	Herb
9.	<u>Sensitive Fern (<i>Onoclea sensibilis</i>)</u>	10	FACW	Herb
10.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
11.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
12.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
13.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
14.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
15.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: Majority of species present are FAC, FACW, or OBL.

SOILS

Series/Phase: Click or tap here to enter text.

Subgroup: Click or tap here to enter text.

Is the soil on the hydric soils list? Yes ☐

No ☐

Undetermined ☐

Is the soil a Histosol? Yes ☐

No ☒

Histic epiedon present? Yes ☐ No ☒

Is the soil: Mottled? Yes ☒ No ☐

Gleyed? Yes ☐ No ☒

Matrix Color: 0-6" 10YR 3/2 100%; 6-12" 10YR 4/2 95%

Mottle Colors: 10YR 5/6 5%

Other hydric soil indicators: Redox Dark Surface

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale: Redox dark surface criterion met.

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: 0 inches

List of other field evidence of surface inundation or soil saturation: Water-stained leaves, geomorphic position and drainage patterns.

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale: Primary and secondary indicators present.

Data Form

Routine Onsite Determination Form

Field Investigators: HB, MD

Date: 07/11/2022

Project/Site: Atlantic Shores

State: NJ

County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: 37-W019-1U

Note: if a more detailed site description is necessary, provide detail here: Area consists of herbaceous vegetation and is a side of a roadway.

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) Soils were previously excavated and piled to create this upland berm

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	<u>Canada Goldenrod (Solidago canadensis)</u>	40	FACU	Herb
2.	<u>Devil's Beggartick (Bidens frondosa)</u>	30	FACW	Herb
3.	<u>Poison Ivy (Toxicodendron radicans)</u>	40	FAC	Herb
4.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
5.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
6.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
7.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
8.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
9.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
10.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
11.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
12.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
13.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
14.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
15.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>

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

Is the hydrophytic vegetation criterion met? Yes ☐

No ☒

Rationale: Fails the dominance test.

SOILS

Series/Phase: [Click or tap here to enter text.](#)

Subgroup: [Click or tap here to enter text.](#)

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

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

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

Matrix Color: 0-12" 5Y 2.5/1 (100%) Mottle Colors: N/A

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, MD

Date: 07/11/2022

Project/Site: Atlantic Shores

State: NJ

County: Monmouth

Applicant/Owner: Atlantic Shores, LLC

Plant Community#/Name: 37-W019-1W

Note: if a more detailed site description is necessary, provide detail here: 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.	<u>Sweet Gum (Liquidambar styraciflua)</u>	10	FAC	Tree
2.	<u>Gray Dogwood (Liquidambar styraciflua)</u>	10	FAC	Tree
3.	<u>Soft Rush (Juncus effusus)</u>	50	OBL	Herb
4.	<u>Flat-top Goldentop (Euthamia graminifolia)</u>	30	FAC	Herb
5.	<u>Mile-a-Minute (Persicaria perfoliate)</u>	20	FAC	Herb
6.	<u>Common Reed (Phragmites australis)</u>	20	FACW	Herb
7.	<u>Wrinkle-Leaf Goldenrod (Solidago rugosa)</u>	30	FAC	Herb
8.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
9.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
10.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
11.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
12.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
13.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
14.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>
15.	<u>Species Name</u>	<u>% Cover</u>	<u>STATUS</u>	<u>Stratum</u>

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale: Majority of species present are FAC or FACW.

SOILS

Series/Phase: [Click or tap here to enter text.](#)

Subgroup: [Click or tap here to enter text.](#)

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: 0-12" 10YR 2/1 100%; 12-18" 10YR 4/2 95%

Mottle Colors: 7.5YR 4/6 5%

Other hydric soil indicators: Depleted Matrix

Is the hydric soil criterion met? Yes ☒

No ☐

Rationale: **Depleted Matrix criterion met.**

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: Geomorphic position and drainage patterns.

Is the wetland hydrology criterion met? Yes ☒

No ☐

Rationale: Two secondary indicators present.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W008-1U
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): convex Slope (%): 0-3
 Subregion (LRR or MLRA): LRR S Lat: 40.1208965 Long: -74.19600833 Datum: WGS 1984
 Soil Map Unit Name: Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W008-1U

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Acer rubrum</i> / Red maple	30	Yes	FAC	
2. <i>Juniperus virginiana</i> / Eastern red-cedar	30	Yes	Smilax rotu	
3. <i>Liquidambar styraciflua</i> / Sweetgum	10	No	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
	70	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 Feet)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	0	= Total Cover		

Herb Stratum (Plot size: 5 Feet)				
1. <i>Smilax rotundifolia</i> / Horsebrier	5	Yes	FAC	
2. <i>Ilex opaca</i> / American holly	5	Yes	FACU	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	10	= Total Cover		

Woody Vine Stratum (Plot size: 30 Feet)				
1. _____				
2. _____				
3. _____				
4. _____				
	0	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>45</u>	x 3 = <u>135</u>
FACU species <u>35</u>	x 4 = <u>140</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>80</u> (A)	<u>275</u> (B)

Prevalence Index = B/A = 3.44

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W008-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR R, MLRA 149B)**

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W008-1W
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Swale Local relief (concave, convex, none): concave Slope (%): 0-3
 Subregion (LRR or MLRA): LRR S Lat: 40.12106767 Long: -74.1960005 Datum: WGS 1984
 Soil Map Unit Name: Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W008-1W

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Acer rubrum</i> / Red maple	80	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
	80	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Acer rubrum</i> / Red maple	80	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
	80	= Total Cover		
Herb Stratum (Plot size: 5 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Smilax rotundifolia</i> / Horsebrier	5	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	5	= Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1.				
2.				
3.				
4.				
	0	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

 Total Number of Dominant Species Across All Strata: 3 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	165	x 3 =	495	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	165	(A)	495	(B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W008-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☒ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W009-1U
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Berm Local relief (concave, convex, none): convex Slope (%): 0-10
 Subregion (LRR or MLRA): LRR S Lat: 40.11846917 Long: -74.19569283 Datum: WGS 1984
 Soil Map Unit Name: Berryland sand, 0 to 2 percent slopes, frequently flooded NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W009-1U

Tree Stratum	(Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Sapling/Shrub Stratum	(Plot size: 15 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Herb Stratum	(Plot size: 5 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Phytolacca americana</i> / Pokeweed	20	Yes	FACU
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		20	= Total Cover	

Woody Vine Stratum	(Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 0	x 3 = 0
FACU species 20	x 4 = 80
UPL species 0	x 5 = 0
Column Totals: 20 (A)	80 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W009-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W009-1W
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Depressional area Local relief (concave, convex, none): concave Slope (%): 0-3
 Subregion (LRR or MLRA): LRR S Lat: 40.11845617 Long: -74.19583533 Datum: WGS 1984
 Soil Map Unit Name: Berryland sand, 0 to 2 percent slopes, frequently flooded NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>26-W009-1W</u>
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Microtopographic Relief (D4)
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No <u>X</u>	Depth (inches): _____
Water Table Present? Yes <u>X</u> No _____	Depth (inches): <u>12</u>
Saturation Present? Yes <u>X</u> No _____	Depth (inches): <u>0</u>

(includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W009-1W

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 Feet)			
1. <i>Quercus bicolor</i> / Swamp white oak	20	Yes	FACW
2. <i>Acer rubrum</i> / Red maple	5	Yes	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. <i>Clethra alnifolia</i> / Coastal sweet-pepperbush	75	Yes	FAC
2. <i>Acer rubrum</i> / Red maple	5	No	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	80	= Total Cover	
Herb Stratum (Plot size: 5 Feet)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 Feet)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 20	x 2 = 40
FAC species 85	x 3 = 255
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 105 (A)	295 (B)

Prevalence Index = B/A = 2.81

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation ☐

X 2 - Dominance Test is >50% ☒

X 3 - Prevalence Index ≤3.0¹ ☒

4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain) ☐

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W009-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W010-1U
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): convex Slope (%): 0-5
 Subregion (LRR or MLRA): LRR S Lat: 40.1154725 Long: -74.17606633 Datum: WGS 1984
 Soil Map Unit Name: Berryland sand, 0 to 2 percent slopes, frequently flooded NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

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

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W010-1U

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 Feet)			
1. <i>Pinus rigida</i> / Pitch pine	20	Yes	FACU
2. <i>Acer rubrum</i> / Red maple	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. <i>Betula alleghaniensis</i> / Yellow birch	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 Feet)			
1. <i>Smilax rotundifolia</i> / Horsebrier	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 55	x 3 = 165
FACU species 20	x 4 = 80
UPL species 0	x 5 = 0
Column Totals: 75 (A)	245 (B)

Prevalence Index = B/A = 3.27

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W010-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- | | |
|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |
| <input type="checkbox"/> Sandy Redox (S5) | |
| <input type="checkbox"/> Stripped Matrix (S6) | |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W010-1W
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Depressional area Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR S Lat: 40.11543983 Long: -74.17610233 Datum: WGS 1984
 Soil Map Unit Name: Berryland sand, 0 to 2 percent slopes, frequently flooded NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Microtopographic Relief (D4)
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No <u>X</u>	Depth (inches): _____
Water Table Present? Yes <u>X</u> No _____	Depth (inches): <u>12</u>
Saturation Present? Yes <u>X</u> No _____	Depth (inches): <u>0</u>

(includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W010-1W

Tree Stratum	(Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Sapling/Shrub Stratum	(Plot size: 15 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Clethra alnifolia</i> / Coastal sweet-pepperbush	10	Yes	FAC
2.				
3.				
4.				
5.				
6.				
7.				
		10	= Total Cover	

Herb Stratum	(Plot size: 5 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Juncus effusus</i> / Common bog rush, Soft or lamp rush	5	Yes	OBL
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		5	= Total Cover	

Woody Vine Stratum	(Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
		0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>15</u> (A)	<u>35</u> (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W010-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**

- ☐ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ☐ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ☐ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
 ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
 ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
 ___ Dark Surface (S7) (**LRR K, L**)
 ___ Polyvalue Below Surface (S8) (**LRR K, L**)
 ___ Thin Dark Surface (S9) (**LRR K, L**)
 ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
 ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
 ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
 ___ Red Parent Material (F21)
 ___ Very Shallow Dark Surface (TF12)
 ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W011-1U
 Investigator(s): TCAL Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): concave Slope (%): 5-10
 Subregion (LRR or MLRA): LRR S Lat: 40.11552933 Long: -74.17518867 Datum: WGS 1984
 Soil Map Unit Name: Berryland sand, 0 to 2 percent slopes, frequently flooded NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W011-1U

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 Feet)			
1. <i>Quercus velutina</i> / Black oak	50	Yes	NI
2.			
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. <i>Berberis thunbergii</i> / Japanese barberry	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: 5 Feet)			
1. <i>Allium</i> / Onion	5	Yes	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30 Feet)			
1. <i>Celastrus orbiculatus</i> / Asian bittersweet	20	Yes	FACU
2.			
3.			
4.			
	20	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 0	x 3 = 0
FACU species 35	x 4 = 140
UPL species 55	x 5 = 275
Column Totals: 90 (A)	415 (B)

Prevalence Index = B/A = 4.61

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W011-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| ___ Histosol (A1) | ___ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ___ Histic Epipedon (A2) | ___ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ___ Black Histic (A3) | ___ Loamy Mucky Mineral (F1) (LRR K, L) |
| ___ Hydrogen Sulfide (A4) | ___ Loamy Gleyed Matrix (F2) |
| ___ Stratified Layers (A5) | ___ Depleted Matrix (F3) |
| ___ Depleted Below Dark Surface (A11) | ___ Redox Dark Surface (F6) |
| ___ Thick Dark Surface (A12) | ___ Depleted Dark Surface (F7) |
| ___ Sandy Mucky Mineral (S1) | ___ Redox Depressions (F8) |
| ___ Sandy Gleyed Matrix (S4) | |
| ___ Sandy Redox (S5) | |
| ___ Stripped Matrix (S6) | |
| ___ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/21/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W011-1W
 Investigator(s): TCAL Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Depressional area Local relief (concave, convex, none): concave Slope (%): 3-5
 Subregion (LRR or MLRA): LRR S Lat: Long: Datum: WGS 1984
 Soil Map Unit Name: Berryland sand, 0 to 2 percent slopes, frequently flooded NWI classification:

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u></u> If yes, optional Wetland Site ID: <u></u>
Hydric Soil Present? Yes <u>X</u> No <u></u>	
Wetland Hydrology Present? Yes <u>X</u> No <u></u>	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Surface Water (A1)
 High Water Table (A2)
 Saturation (A3)
 Water Marks (B1)
 Sediment Deposits (B2)
 Drift Deposits (B3)
 Algal Mat or Crust (B4)
 Iron Deposits (B5)
 Inundation Visible on Aerial Imagery (B7)
 Sparsely Vegetated Concave Surface (B8)

Water-Stained Leaves (B9)
 Aquatic Fauna (B13)
 Marl Deposits (B15)
 Hydrogen Sulfide Odor (C1)
 Oxidized Rhizospheres on Living Roots (C3)
 Presence of Reduced Iron (C4)
 Recent Iron Reduction in Tilled Soils (C6)
 Thin Muck Surface (C7)
 Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

Surface Soil Cracks (B6)
 Drainage Patterns (B10)
 Moss Trim Lines (B16)
 Dry-Season Water Table (C2)
 Crayfish Burrows (C8)
 Saturation Visible on Aerial Imagery (C9)
 Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
 Shallow Aquitard (D3)
X Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches):
 Water Table Present? Yes No X Depth (inches):
 Saturation Present? Yes No X Depth (inches):
 (includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W011-1W

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 Feet)			
1. <i>Acer rubrum</i> / Red maple	20	Yes	FAC
2. <i>Quercus bicolor</i> / Swamp white oak	10	Yes	FACW
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. <i>Clethra alnifolia</i> / Coastal sweet-pepperbush	10	Yes	FAC
2. <i>Acer rubrum</i> / Red maple	5	Yes	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	15	= Total Cover	
Herb Stratum (Plot size: 5 Feet)			
1. <i>Osmunda cinnamomea</i> / Cinnamon fern	15	Yes	FACW
2. <i>Microstegium vimineum</i> / Japanese stilt grass	5	Yes	FAC
3. <i>Carex stricta</i> / Uptight sedge	5	Yes	OBL
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30 Feet)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species 25	x 2 = 50
FAC species 40	x 3 = 120
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 70 (A)	175 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W011-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W012-1U
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): Slope (%): 0-5
 Subregion (LRR or MLRA): LRR S Lat: 40.1180645 Long: -74.1683205 Datum: WGS 1984
 Soil Map Unit Name: Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area NWI classification:

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

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

Hydrophytic Vegetation Present? Yes <u></u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u></u> If yes, optional Wetland Site ID: <u></u>
Hydric Soil Present? Yes <u></u> No <u>X</u>	
Wetland Hydrology Present? Yes <u></u> No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u></u> No <u>X</u>

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W012-1U

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30 Feet)				
1. <i>Pinus rigida</i> / Pitch pine	40	Yes	FACU	
2. <i>Quercus velutina</i> / Black oak	10	Yes	NI	
3.				
4.				
5.				
6.				
7.				
	50	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)				
1. <i>Acer rubrum</i> / Red maple	20	Yes	FAC	
2. <i>Clethra alnifolia</i> / Coastal sweet-pepperbush	5	Yes	FAC	
3.				
4.				
5.				
6.				
7.				
	25	= Total Cover		
Herb Stratum (Plot size: 5 Feet)				
1. <i>Chimaphila maculata</i> / Striped prince's pine	5	Yes	NI	
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	5	= Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)				
1.				
2.				
3.				
4.				
	0	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 25	x 3 = 75
FACU species 40	x 4 = 160
UPL species 15	x 5 = 75
Column Totals: 80 (A)	310 (B)

Prevalence Index = B/A = 3.88

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W012-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| ___ Histosol (A1) | ___ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ___ Histic Epipedon (A2) | ___ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ___ Black Histic (A3) | ___ Loamy Mucky Mineral (F1) (LRR K, L) |
| ___ Hydrogen Sulfide (A4) | ___ Loamy Gleyed Matrix (F2) |
| ___ Stratified Layers (A5) | ___ Depleted Matrix (F3) |
| ___ Depleted Below Dark Surface (A11) | ___ Redox Dark Surface (F6) |
| ___ Thick Dark Surface (A12) | ___ Depleted Dark Surface (F7) |
| ___ Sandy Mucky Mineral (S1) | ___ Redox Depressions (F8) |
| ___ Sandy Gleyed Matrix (S4) | |
| ___ Sandy Redox (S5) | |
| ___ Stripped Matrix (S6) | |
| ___ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W012-1W
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Swale Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): LRR S Lat: 40.1180355 Long: -74.16829433 Datum: WGS 1984
 Soil Map Unit Name: Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes _____ No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W012-1W

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Acer rubrum</i> / Red maple	15	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
	15	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Clethra alnifolia</i> / Coastal sweet-pepperbush	20	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
	20	= Total Cover		
Herb Stratum (Plot size: 5 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Juncus effusus</i> / Common bog rush, Soft or lamp rush	5	Yes	OBL	
2. <i>Symplocarpus foetidus</i> / Skunk-cabbage	5	Yes	OBL	
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	10	= Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1.				
2.				
3.				
4.				
	0	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

 Total Number of Dominant Species Across All Strata: 4 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 10	x 1 = 10
FACW species 0	x 2 = 0
FAC species 35	x 3 = 105
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 45	(A) 115 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W012-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**

- ☐ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ☐ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ☐ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W014-1U
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): convex Slope (%): 0-5
 Subregion (LRR or MLRA): LRR S Lat: 40.11895733 Long: -74.16597317 Datum: WGS 1984
 Soil Map Unit Name: Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W014-1U

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 Feet)			
1. <i>Quercus velutina</i> / Black oak	20	Yes	NI
2. <i>Acer rubrum</i> / Red maple	10	Yes	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	0	= Total Cover	
Herb Stratum (Plot size: 5 Feet)			
1. <i>Aster</i> / Aster	5	Yes	NI
2. <i>Smilax rotundifolia</i> / Horsebrier	5	Yes	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30 Feet)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 15	x 3 = 45
FACU species 0	x 4 = 0
UPL species 25	x 5 = 125
Column Totals: 40 (A)	170 (B)

Prevalence Index = B/A = 4.25

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W014-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| ___ Histosol (A1) | ___ Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| ___ Histic Epipedon (A2) | ___ Thin Dark Surface (S9) (LRR R, MLRA 149B) |
| ___ Black Histic (A3) | ___ Loamy Mucky Mineral (F1) (LRR K, L) |
| ___ Hydrogen Sulfide (A4) | ___ Loamy Gleyed Matrix (F2) |
| ___ Stratified Layers (A5) | ___ Depleted Matrix (F3) |
| ___ Depleted Below Dark Surface (A11) | ___ Redox Dark Surface (F6) |
| ___ Thick Dark Surface (A12) | ___ Depleted Dark Surface (F7) |
| ___ Sandy Mucky Mineral (S1) | ___ Redox Depressions (F8) |
| ___ Sandy Gleyed Matrix (S4) | |
| ___ Sandy Redox (S5) | |
| ___ Stripped Matrix (S6) | |
| ___ Dark Surface (S7) (LRR R, MLRA 149B) | |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W014-1W
 Investigator(s): ALTC Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Depressional area Local relief (concave, convex, none): concave Slope (%): 0-5
 Subregion (LRR or MLRA): LRR S Lat: 40.11892867 Long: -74.165902 Datum: WGS 1984
 Soil Map Unit Name: Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input checked="" type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>3</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	
Wetland Hydrology Present? Yes <u>X</u> No _____	

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W014-1W

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30 Feet)				
1. <i>Acer rubrum</i> / Red maple	10	Yes	FAC	
2. <i>Quercus bicolor</i> / Swamp white oak	10	Yes	FACW	
3.				
4.				
5.				
6.				
7.				
	20	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)				
1. <i>Clethra alnifolia</i> / Coastal sweet-pepperbush	40	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
	40	= Total Cover		
Herb Stratum (Plot size: 5 Feet)				
1. <i>Symplocarpus foetidus</i> / Skunk-cabbage	5	Yes	OBL	
2. <i>Smilax rotundifolia</i> / Horsebrier	5	Yes	FAC	
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	10	= Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)				
1.				
2.				
3.				
4.				
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species 10	x 2 = 20
FAC species 55	x 3 = 165
FACU species 0	x 4 = 0
UPL species 0	x 5 = 0
Column Totals: 70 (A)	190 (B)

Prevalence Index = B/A = 2.71

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W014-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input checked="" type="checkbox"/>	Histosol (A1)
<input type="checkbox"/>	Histic Epipedon (A2)
<input type="checkbox"/>	Black Histic (A3)
<input type="checkbox"/>	Hydrogen Sulfide (A4)
<input type="checkbox"/>	Stratified Layers (A5)
<input type="checkbox"/>	Depleted Below Dark Surface (A11)
<input type="checkbox"/>	Thick Dark Surface (A12)
<input type="checkbox"/>	Sandy Mucky Mineral (S1)
<input type="checkbox"/>	Sandy Gleyed Matrix (S4)
<input type="checkbox"/>	Sandy Redox (S5)
<input type="checkbox"/>	Stripped Matrix (S6)
<input type="checkbox"/>	Dark Surface (S7) (LRR R, MLRA 149B)

- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
 ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
 ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
 ___ Dark Surface (S7) (**LRR K, L**)
 ___ Polyvalue Below Surface (S8) (**LRR K, L**)
 ___ Thin Dark Surface (S9) (**LRR K, L**)
 ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
 ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
 ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
 ___ Red Parent Material (F21)
 ___ Very Shallow Dark Surface (TF12)
 ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

Water prevents soil from being collected past 12 inches

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W015-1U
 Investigator(s): TCAL Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Hillslope Local relief (concave, convex, none): convex Slope (%): 5-10
 Subregion (LRR or MLRA): LRR S Lat: 40.12807383 Long: -74.13545567 Datum: WGS 1984
 Soil Map Unit Name: Humaquepts, 0 to 3 percent slopes, frequently flooded NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W015-1U

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Quercus velutina</i> / Black oak	20	Yes	NI	
2.				
3.				
4.				
5.				
6.				
7.				
	20	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 Feet)				
1. <i>Clethra alnifolia</i> / Coastal sweet-pepperbush	25	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
	25	= Total Cover		
Herb Stratum (Plot size: 5 Feet)				
1. <i>Smilax rotundifolia</i> / Horsebrier	5	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	5	= Total Cover		
Woody Vine Stratum (Plot size: 30 Feet)				
1.				
2.				
3.				
4.				
	0	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>20</u>	x 5 = <u>100</u>
Column Totals: <u>50</u> (A)	<u>190</u> (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W015-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes No **X**

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/16/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W015-1W
 Investigator(s): TCAL Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Swale Local relief (concave, convex, none): concave Slope (%): 0-3
 Subregion (LRR or MLRA): LRR S Lat: 40.12801933 Long: -74.13536217 Datum: WGS 1984
 Soil Map Unit Name: Humaquepts, 0 to 3 percent slopes, frequently flooded NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W015-1W

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Acer rubrum</i> / Red maple	35	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
	35	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Clethra alnifolia</i> / Coastal sweet-pepperbush	45	Yes	FAC	
2.				
3.				
4.				
5.				
6.				
7.				
	45	= Total Cover		

Herb Stratum (Plot size: 5 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Symplocarpus foetidus</i> / Skunk-cabbage	15	Yes	OBL	
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	15	= Total Cover		

Woody Vine Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1.				
2.				
3.				
4.				
	0	= Total Cover		

Remarks: (Explain alternative procedures here or in a separate report.)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95	(A)	255 (B)

Prevalence Index = B/A = 2.68

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation

Present? Yes X No

SOIL

Sampling Point: 26-W015-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR R, MLRA 149B)

- ☐ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ☐ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ☐ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/21/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W016-1U
 Investigator(s): TCAL Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Flat Local relief (concave, convex, none): convex Slope (%): 0-3
 Subregion (LRR or MLRA): LRR S Lat: 40.12990367 Long: -74.05197133 Datum: WGS 1984
 Soil Map Unit Name: Downer-Urban land complex, 0 to 5 percent slopes NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W016-1U

Tree Stratum (Plot size: 30 Feet)				Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea abies / Norway spruce			20	Yes	NI
2.	Robinia pseudoacacia / Black locust			10	Yes	FACU
3.						
4.						
5.						
6.						
7.						
				30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 Feet)						
1.	Taxus / Yew			5	Yes	NI
2.						
3.						
4.						
5.						
6.						
7.						
				5	= Total Cover	
Herb Stratum (Plot size: 5 Feet)						
1.	Poa pratensis / Kentucky blue grass			100	Yes	FACU
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
				100	= Total Cover	
Woody Vine Stratum (Plot size: 30 Feet)						
1.						
2.						
3.						
4.						
				0	= Total Cover	

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

 Total Number of Dominant Species Across All Strata: 4 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	110	x 4 =	440
UPL species	25	x 5 =	125
Column Totals:	135	(A)	565 (B)

Prevalence Index = B/A = 4.19

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?
Yes _____ No X

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W016-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes No X

Remarks:

Manicured Park land with underground utilities present, manmade wetland, adjacent area non hydric.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/21/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W016-1W
 Investigator(s): TCAL Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Bowl shaped depression Local relief (concave, convex, none): concave Slope (%): 0-5
 Subregion (LRR or MLRA): LRR S Lat: 40.129932 Long: -74.051943 Datum: WGS 1984
 Soil Map Unit Name: Water NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>26-W016-1W</u>
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) <u>Manmade pond.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<u>X</u> Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Surface Soil Cracks (B6)
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Marl Deposits (B15)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Shallow Aquitard (D3)
_____ Sparsely Vegetated Concave Surface (B8)		_____ Microtopographic Relief (D4)
		_____ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>12+</u> Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W016-1W

Tree Stratum	(Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Sapling/Shrub Stratum	(Plot size: 15 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		0	= Total Cover	

Herb Stratum	(Plot size: 5 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		0	= Total Cover	

Woody Vine Stratum	(Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 0.0

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☒ 3 - Prevalence Index ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation

Present? Yes ☐ No ☒ X

Remarks: (Explain alternative procedures here or in a separate report.)
No vegetation present at sample point, center of pond with duckweed.

SOIL

Sampling Point: 26-W016-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**

- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

Soil unable to be collected due to water levels.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/15/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W019-1U
 Investigator(s): TCAL Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Flat Local relief (concave, convex, none): convex Slope (%): 0-5
 Subregion (LRR or MLRA): LRR S Lat: 40.13705267 Long: -74.10948933 Datum: WGS 1984
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W019-1U

Tree Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Betula lenta</i> / Sweet birch	40	Yes	FACU	
2.				
3.				
4.				
5.				
6.				
7.				
	40	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	0	= Total Cover		

Herb Stratum (Plot size: 5 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Allium</i> / Onion	5	Yes	NI	
2. <i>Lonicera japonica</i> / Japanese honeysuckle	5	Yes	FACU	
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	10	= Total Cover		

Woody Vine Stratum (Plot size: 30 Feet)	Absolute % Cover	Dominant Species?	Indicator Status	
1.				
2.				
3.				
4.				
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>50</u> (A)	<u>205</u> (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W019-1U

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**

- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
 ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
 ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
 ___ Dark Surface (S7) (**LRR K, L**)
 ___ Polyvalue Below Surface (S8) (**LRR K, L**)
 ___ Thin Dark Surface (S9) (**LRR K, L**)
 ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
 ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
 ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
 ___ Red Parent Material (F21)
 ___ Very Shallow Dark Surface (TF12)
 ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: COP South Larrabee City/County: Monmouth County, NJ Sampling Date: 02/15/2023
 Applicant/Owner: ASOW State: New Jersey Sampling Point: 26-W019-1W
 Investigator(s): TCAL Section, Township, Range: Monmouth County, NJ
 Landform (hillslope, terrace, etc): Depressional area Local relief (concave, convex, none): concave Slope (%): 0-5
 Subregion (LRR or MLRA): LRR S Lat: 40.13704317 Long: -74.10948883 Datum: WGS 1984
 Soil Map Unit Name: _____ NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<u>X</u> Surface Water (A1)	_____ Water-Stained Leaves (B9)
<u>X</u> High Water Table (A2)	_____ Aquatic Fauna (B13)
<u>X</u> Saturation (A3)	_____ Marl Deposits (B15)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)
_____ Sparsely Vegetated Concave Surface (B8)	_____ Surface Soil Cracks (B6)
	_____ Drainage Patterns (B10)
	_____ Moss Trim Lines (B16)
	_____ Dry-Season Water Table (C2)
	_____ Crayfish Burrows (C8)
	_____ Saturation Visible on Aerial Imagery (C9)
	_____ Stunted or Stressed Plants (D1)
	_____ Geomorphic Position (D2)
	_____ Shallow Aquitard (D3)
	_____ Microtopographic Relief (D4)
	<u>X</u> FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>12+</u>	Wetland Hydrology Present? Yes <u>X</u> No _____
Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u>	
Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	

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

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: 26-W019-1W

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 Feet)			
1. <i>Fraxinus pennsylvanica</i> / Green ash	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 Feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 Feet)			
1. <i>Juncus effusus</i> / Common bog rush, Soft or lamp rush	15	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30 Feet)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>15</u>	x 1 = <u>15</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>45</u>	(A) <u>75</u> (B)

Prevalence Index = B/A = 1.67

Hydrophytic Vegetation Indicators:

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Explain alternative procedures here or in a separate report.)

SOIL

Sampling Point: 26-W019-1W

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input checked="" type="checkbox"/>	Histosol (A1)
<input type="checkbox"/>	Histic Epipedon (A2)
<input type="checkbox"/>	Black Histic (A3)
<input type="checkbox"/>	Hydrogen Sulfide (A4)
<input type="checkbox"/>	Stratified Layers (A5)
<input type="checkbox"/>	Depleted Below Dark Surface (A11)
<input type="checkbox"/>	Thick Dark Surface (A12)
<input type="checkbox"/>	Sandy Mucky Mineral (S1)
<input type="checkbox"/>	Sandy Gleyed Matrix (S4)
<input type="checkbox"/>	Sandy Redox (S5)
<input type="checkbox"/>	Stripped Matrix (S6)
<input type="checkbox"/>	Dark Surface (S7) (LRR R, MLRA 149B)

- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
☐ Coast Prairie Redox (A16) (**LRR K, L, R**)
☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
☐ Dark Surface (S7) (**LRR K, L**)
☐ Polyvalue Below Surface (S8) (**LRR K, L**)
☐ Thin Dark Surface (S9) (**LRR K, L**)
☐ Iron-Manganese Masses (F12) (**LRR K, L, R**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
☐ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

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: WC1 (Previously :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.

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.

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 3 Data Point ID: WC3

Town: Click or tap here to enter text. County: Monmouth State: New Jersey

Latitude: 40.1515109229 Longitude: -74.1158297112

Stream ID: Click or tap here to enter text.

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: mowed lawn, common reed stand, bike path, meadow

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: 4"

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: 8'

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

Stream flowing from north to south controlled by channelization and piping under bikepath from meadow.

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 14 Data Point ID: WC4 (Previously: WC14)

Town: [Click or tap here to enter text.](#) County: Monmouth State: New Jersey

Latitude: 40.1323690109 Longitude: -74.1657166857

Stream ID: [Click or tap here to enter text.](#)

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: sand, sparsely vegetated areas, sand access road

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: 3"

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 runs through the powerline ROW along sand access road, washes into access road at certain points, very shallow 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: WC5 (Previously: 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.

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 16 Data Point ID: WC6 (Previously: WC16)

Town: [Click or tap here to enter text.](#) County: Monmouth State: New Jersey

Latitude: 40.1186308557 Longitude: -74.1905728632

Stream ID: Dicks Brook

Previous Weather: Snow ☐ Heavy Rain ☐ Rain ☐ None ☒ Unknown ☐

Adjacent Landcover: wetland and transmission line ROW

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: 4"

Wetted (Stream) Width: 6'

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: 8'

Bank Height: 2.5'

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

[Click or tap here to enter text.](#)

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	WC7 (Previously WC17)
Latitude, Longitude	40.12792995, -74.18451483
Latitude	40.12792995
Longitude	-74.18451483
Accuracy	7.44 m
Current Precipitation	<input type="checkbox"/> Heavy Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Rain <input type="checkbox"/> Snow
Precipitation in Past 48 Hours	<input type="checkbox"/> Heavy Rain <input type="checkbox"/> None <input type="checkbox"/> Rain <input checked="" type="checkbox"/> Snow <input type="checkbox"/> Unknown
General Characteristics	
NYSDEC Mapped Stream	<input checked="" type="checkbox"/> No <input type="checkbox"/> No, but connects to mapped stream <input type="checkbox"/> Yes
Drainage Ditch	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Surface Water Depth at Thalweg (Inches)	10
Stream Gradient	<input checked="" type="checkbox"/> Gentle (0-5%) <input type="checkbox"/> Moderate (6-11%) <input type="checkbox"/> Steep (>12%)
Substrate	<input checked="" type="checkbox"/> Silt/Clay (No grit)



- ☒ Sand (Gritty feel)
- ☐ Gravel
- ☐ Cobble
- ☐ Boulder
- ☐ Bedrock

Range of Bankfull width for stream reach

15

Geomorphology

Continuity of channel bed and bank

- ☐ Absent (0)
- ☒ Weak (1)
- ☐ Moderate (2)
- ☐ Strong (3)

Sinuosity of channel along thalweg

- ☐ Absent (0)
- ☒ Weak (1)
- ☐ Moderate (2)
- ☐ Strong (3)

In Channel Structures

- ☐ Absent (0)
- ☒ Weak (1)
- ☐ Moderate (2)
- ☐ Strong (3)

Particle Size of Stream Substrate

- ☐ Absent (0)
- ☐ Weak (1)
- ☒ Moderate (2)
- ☐ Strong (3)

Active/Relic Floodplain

- ☐ Absent (0)
- ☐ Weak (1)
- ☒ Moderate (2)
- ☐ Strong (3)

Depositional Bars or Benches

- ☐ Absent (0)
- ☒ Weak (1)
- ☐ Moderate (2)
- ☐ Strong (3)

Recent Alluvial Deposits

- ☒ Absent (0)
- ☐ Weak (1)
- ☐ Moderate (2)
- ☐ Strong (3)



Are Headcuts present

- ☒ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Grade Control

- ☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Natural Valley

- ☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Second or Greater Order Channel

- ☒ No (0)
☐ Yes (3)

Hydrology

Presence of Baseflow

- ☐ Absent (0)
☒ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Iron Oxidizing Bacteria

- ☒ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Leaf Litter

- ☒ Absent (1.5)
☐ Weak (1)
☐ Moderate (0.5)
☐ Strong (0)

Sediment on Plants or Debris

- ☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)

Organic Debris Lines or Piles

- ☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)



Soil-based evidence of high water table

☐ No (0)
☒ Yes (3)

Biology

Fibrous Roots in Streambed

☒ Absent (3)
☐ Weak (2)
☐ Moderate (1)
☐ Strong (0)

Rooted Upland Plants in Streambed

☒ Absent (3)
☐ Weak (2)
☐ Moderate (1)
☐ Strong (0)

Aquatic Macroinvertebrates

☐ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☒ Strong (3)

Aquatic Mollusks

☐ Absent (0)
☒ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Fish

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)

Crayfish

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)

Amphibians

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)

Algae

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)



☒ FACW (0.75)

☐ OBL (1.5)

☐ Other (0)

Stream Type Determination

Total Score

30.25

Stream Determination

☐ Ephemeral (<19)

☐ Intermittent (≥19)

☒ 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	WC 8 Previously WC18
Latitude, Longitude	
Latitude	40.125333
Longitude	-74.187329
Accuracy	m
Current Precipitation	<input type="checkbox"/> Heavy Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Rain <input type="checkbox"/> Snow
Precipitation in Past 48 Hours	<input type="checkbox"/> Heavy Rain <input type="checkbox"/> None <input checked="" type="checkbox"/> Rain <input type="checkbox"/> Snow <input type="checkbox"/> Unknown
General Characteristics	
NYSDEC Mapped Stream	<input type="checkbox"/> No <input type="checkbox"/> No, but connects to mapped stream <input type="checkbox"/> Yes
Drainage Ditch	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Surface Water Depth at Thalweg (Inches)	3
Stream Gradient	<input checked="" type="checkbox"/> Gentle (0-5%) <input type="checkbox"/> Moderate (6-11%) <input type="checkbox"/> Steep (>12%)
Substrate	<input checked="" type="checkbox"/> Silt/Clay (No grit)



- ☒ Sand (Gritty feel)
☐ Gravel
☐ Cobble
☐ Boulder
☐ Bedrock

Range of Bankfull width for stream reach

5

Geomorphology

Continuity of channel bed and bank

- ☐ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☒ Strong (3)

Sinuosity of channel along thalweg

- ☐ Absent (0)
☐ Weak (1)
☒ Moderate (2)
☐ Strong (3)

In Channel Structures

- ☐ Absent (0)
☒ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Particle Size of Stream Substrate

- ☐ Absent (0)
☒ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Active/Relic Floodplain

- ☐ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☒ Strong (3)

Depositional Bars or Benches

- ☐ Absent (0)
☒ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Recent Alluvial Deposits

- ☐ Absent (0)
☒ Weak (1)
☐ Moderate (2)
☐ Strong (3)



Are Headcuts present

- ☒ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Grade Control

- ☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Natural Valley

- ☐ Absent (0)
☒ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Second or Greater Order Channel

- ☒ No (0)
☐ Yes (3)

Hydrology

Presence of Baseflow

- ☐ Absent (0)
☒ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Iron Oxidizing Bacteria

- ☒ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Leaf Litter

- ☐ Absent (1.5)
☐ Weak (1)
☒ Moderate (0.5)
☐ Strong (0)

Sediment on Plants or Debris

- ☐ Absent (0)
☒ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Organic Debris Lines or Piles

- ☐ Absent (0)
☒ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)



Soil-based evidence of high water table

☐ No (0)
☒ Yes (3)

Biology

Fibrous Roots in Streambed

☐ Absent (3)
☐ Weak (2)
☒ Moderate (1)
☐ Strong (0)

Rooted Upland Plants in Streambed

☐ Absent (3)
☐ Weak (2)
☐ Moderate (1)
☒ Strong (0)

Aquatic Macroinvertebrates

☒ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Aquatic Mollusks

☒ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Fish

☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Crayfish

☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Amphibians

☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Algae

☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)



Wetland Plants in Streambed

☐ FACW (0.75)

☐ OBL (1.5)

☒ Other (0)

Stream Type Determination

Total Score

18

Stream Determination

☐ Ephemeral (<19)

☒ Intermittent (≥19)

☐ Perennial (≥30)

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	WC9 (Previously WC19)
Latitude, Longitude	40.12389394, -74.18817077
Latitude	40.12389394
Longitude	-74.18817077
Accuracy	4.02 m
Current Precipitation	<input type="checkbox"/> Heavy Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Rain <input type="checkbox"/> Snow
Precipitation in Past 48 Hours	<input type="checkbox"/> Heavy Rain <input type="checkbox"/> None <input type="checkbox"/> Rain <input checked="" type="checkbox"/> Snow <input type="checkbox"/> Unknown
General Characteristics	
NYSDEC Mapped Stream	<input checked="" type="checkbox"/> No <input type="checkbox"/> No, but connects to mapped stream <input type="checkbox"/> Yes
Drainage Ditch	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Surface Water Depth at Thalweg (Inches)	24
Stream Gradient	<input checked="" type="checkbox"/> Gentle (0-5%) <input type="checkbox"/> Moderate (6-11%) <input type="checkbox"/> Steep (>12%)
Substrate	<input checked="" type="checkbox"/> Silt/Clay (No grit)



- ☒ Sand (Gritty feel)
☒ Gravel
☐ Cobble
☐ Boulder
☐ Bedrock

Range of Bankfull width for stream reach

40

Geomorphology

Continuity of channel bed and bank

- ☐ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☒ Strong (3)

Sinuosity of channel along thalweg

- ☐ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☒ Strong (3)

In Channel Structures

- ☐ Absent (0)
☐ Weak (1)
☒ Moderate (2)
☐ Strong (3)

Particle Size of Stream Substrate

- ☐ Absent (0)
☐ Weak (1)
☒ Moderate (2)
☐ Strong (3)

Active/Relic Floodplain

- ☐ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☒ Strong (3)

Depositional Bars or Benches

- ☐ Absent (0)
☐ Weak (1)
☒ Moderate (2)
☐ Strong (3)

Recent Alluvial Deposits

- ☒ Absent (0)
☐ Weak (1)
☐ Moderate (2)
☐ Strong (3)



Are Headcuts present

- ☒ Absent (0)
- ☐ Weak (1)
- ☐ Moderate (2)
- ☐ Strong (3)

Grade Control

- ☐ Absent (0)
- ☒ Weak (0.5)
- ☐ Moderate (1)
- ☐ Strong (1.5)

Natural Valley

- ☐ Absent (0)
- ☒ Weak (0.5)
- ☐ Moderate (1)
- ☐ Strong (1.5)

Second or Greater Order Channel

- ☐ No (0)
- ☒ Yes (3)

Hydrology

Presence of Baseflow

- ☐ Absent (0)
- ☐ Weak (1)
- ☐ Moderate (2)
- ☒ Strong (3)

Iron Oxidizing Bacteria

- ☐ Absent (0)
- ☒ Weak (1)
- ☐ Moderate (2)
- ☐ Strong (3)

Leaf Litter

- ☐ Absent (1.5)
- ☒ Weak (1)
- ☐ Moderate (0.5)
- ☐ Strong (0)

Sediment on Plants or Debris

- ☒ Absent (0)
- ☐ Weak (0.5)
- ☐ Moderate (1)
- ☐ Strong (1.5)

Organic Debris Lines or Piles

- ☐ Absent (0)
- ☐ Weak (0.5)
- ☐ Moderate (1)
- ☒ Strong (1.5)



Soil-based evidence of high water table

☐ No (0)
☒ Yes (3)

Biology

Fibrous Roots in Streambed

☐ Absent (3)
☐ Weak (2)
☒ Moderate (1)
☐ Strong (0)

Rooted Upland Plants in Streambed

☒ Absent (3)
☐ Weak (2)
☐ Moderate (1)
☐ Strong (0)

Aquatic Macroinvertebrates

☐ Absent (0)
☐ Weak (1)
☒ Moderate (2)
☐ Strong (3)

Aquatic Mollusks

☐ Absent (0)
☒ Weak (1)
☐ Moderate (2)
☐ Strong (3)

Fish

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)

Crayfish

☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Amphibians

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)

Algae

☐ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☒ Strong (1.5)



Wetland Plants in Streambed

☐ FACW (0.75)

☒ OBL (1.5)

☐ Other (0)

Stream Type Determination

Total Score40.5

Stream Determination

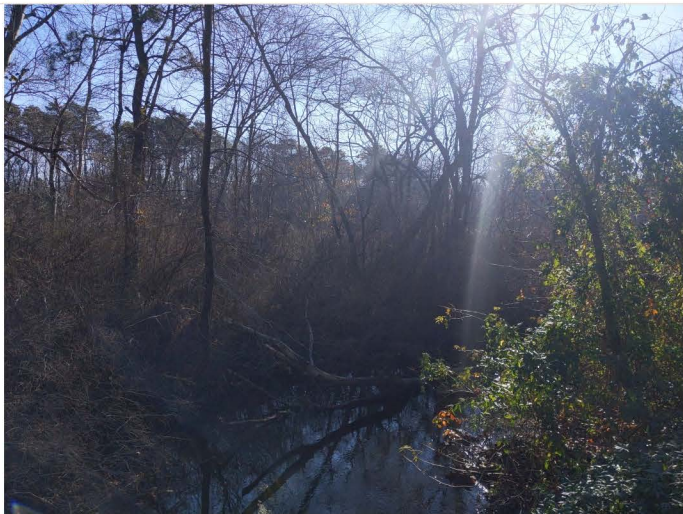
☐ Ephemeral (<19)

☐ Intermittent (≥19)

☒ 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	WC10 (Previously: WC20)
Latitude, Longitude	40.11870505, -74.19284781
Latitude	40.11870505
Longitude	-74.19284781
Accuracy	6.46 m
Current Precipitation	<input type="checkbox"/> Heavy Rain <input checked="" type="checkbox"/> None <input type="checkbox"/> Rain <input type="checkbox"/> Snow
Precipitation in Past 48 Hours	<input type="checkbox"/> Heavy Rain <input type="checkbox"/> None <input type="checkbox"/> Rain <input checked="" type="checkbox"/> Snow <input type="checkbox"/> Unknown
General Characteristics	
NYSDEC Mapped Stream	<input checked="" type="checkbox"/> No <input type="checkbox"/> No, but connects to mapped stream <input type="checkbox"/> Yes
Drainage Ditch	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Surface Water Depth at Thalweg (Inches)	12
Stream Gradient	<input checked="" type="checkbox"/> Gentle (0-5%) <input type="checkbox"/> Moderate (6-11%) <input type="checkbox"/> Steep (>12%)
Substrate	<input type="checkbox"/> Silt/Clay (No grit)



- ☒ Sand (Gritty feel)
- ☒ Gravel
- ☐ Cobble
- ☐ Boulder
- ☐ Bedrock

Range of Bankfull width for stream reach

10

Geomorphology

Continuity of channel bed and bank

- ☐ Absent (0)
- ☐ Weak (1)
- ☐ Moderate (2)
- ☒ Strong (3)

Sinuosity of channel along thalweg

- ☐ Absent (0)
- ☐ Weak (1)
- ☐ Moderate (2)
- ☒ Strong (3)

In Channel Structures

- ☐ Absent (0)
- ☐ Weak (1)
- ☒ Moderate (2)
- ☐ Strong (3)

Particle Size of Stream Substrate

- ☐ Absent (0)
- ☐ Weak (1)
- ☒ Moderate (2)
- ☐ Strong (3)

Active/Relic Floodplain

- ☐ Absent (0)
- ☐ Weak (1)
- ☒ Moderate (2)
- ☐ Strong (3)

Depositional Bars or Benches

- ☐ Absent (0)
- ☐ Weak (1)
- ☒ Moderate (2)
- ☐ Strong (3)

Recent Alluvial Deposits

- ☐ Absent (0)
- ☐ Weak (1)
- ☒ Moderate (2)
- ☐ Strong (3)



Are Headcuts present

- ☒ Absent (0)
- ☐ Weak (1)
- ☐ Moderate (2)
- ☐ Strong (3)

Grade Control

- ☐ Absent (0)
- ☒ Weak (0.5)
- ☐ Moderate (1)
- ☐ Strong (1.5)

Natural Valley

- ☐ Absent (0)
- ☒ Weak (0.5)
- ☐ Moderate (1)
- ☐ Strong (1.5)

Second or Greater Order Channel

- ☐ No (0)
- ☒ Yes (3)

Hydrology

Presence of Baseflow

- ☐ Absent (0)
- ☐ Weak (1)
- ☐ Moderate (2)
- ☒ Strong (3)

Iron Oxidizing Bacteria

- ☐ Absent (0)
- ☐ Weak (1)
- ☒ Moderate (2)
- ☐ Strong (3)

Leaf Litter

- ☐ Absent (1.5)
- ☐ Weak (1)
- ☒ Moderate (0.5)
- ☐ Strong (0)

Sediment on Plants or Debris

- ☐ Absent (0)
- ☐ Weak (0.5)
- ☒ Moderate (1)
- ☐ Strong (1.5)

Organic Debris Lines or Piles

- ☐ Absent (0)
- ☐ Weak (0.5)
- ☐ Moderate (1)
- ☒ Strong (1.5)



Soil-based evidence of high water table

☐ No (0)
☒ Yes (3)

Biology

Fibrous Roots in Streambed

☐ Absent (3)
☒ Weak (2)
☐ Moderate (1)
☐ Strong (0)

Rooted Upland Plants in Streambed

☒ Absent (3)
☐ Weak (2)
☐ Moderate (1)
☐ Strong (0)

Aquatic Macroinvertebrates

☐ Absent (0)
☐ Weak (1)
☒ Moderate (2)
☐ Strong (3)

Aquatic Mollusks

☐ Absent (0)
☐ Weak (1)
☒ Moderate (2)
☐ Strong (3)

Fish

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)

Crayfish

☒ Absent (0)
☐ Weak (0.5)
☐ Moderate (1)
☐ Strong (1.5)

Amphibians

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)

Algae

☐ Absent (0)
☐ Weak (0.5)
☒ Moderate (1)
☐ Strong (1.5)



☒ FACW (0.75)

☐ OBL (1.5)

☐ Other (0)

Stream Type Determination

Total Score

42.75

Stream Determination

☐ Ephemeral (<19)

☐ Intermittent (≥19)

☒ Perennial (≥30)

Photos and Notes

Photo up and downstream



Notes

COP South Stream Scoring Form 1

Project	20043 Atlantic Shores COP South Larrabee
ID	317003
Survey Date	02/16/2023
User	Andrew Leonardi
Stream ID:	26-ST005

Administrative 1

Investigator(s)	ALTC
Latitude, Longitude	
Latitude	40.11850767
Longitude	-74.19572567
Current Precipitation	None
Precipitation in Past 48 Hours	None
Town/County/State	Monmouth County, NJ

General Characteristics 1

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	6
Stream Gradient	Gentle (0-5%)
Substrate	Gravel, Sand (Gritty feel), Silt/Clay (No grit)
OHWM width for stream reach (feet)	6-12

Geomorphology

Continuity of channel bed and bank	3-Strong
Sinuosity of channel along thalweg	2-Moderate
In Channel Structures	1-Weak
Particle Size of Stream Substrate	3-Strong
Active/Relic Floodplain	2-Moderate
Depositional Bars or Benches	3-Strong
Recent Alluvial Deposits	3-Strong
Are Headcuts present	0-Absent
Grade Control	0-Absent
Natural Valley	0.5-Weak
Second or Greater Order Channel	0-No
Subtotal =	17.5

Hydrology

Presence of Baseflow	3-Strong
----------------------	----------

Iron Oxidizing Bacteria	0-Absent
Leaf Litter	1-Weak
Sediment on Plants or Debris	0-Absent
Organic Debris Lines or Piles	0-Absent
Soil-based evidence of high water table	3-Yes
Subtotal =	7

Biology

Fibrous Roots in Streambed	3-Absent
Rooted Upland Plants in Streambed	3-Absent
Aquatic Macroinvertebrates	0-Absent
Aquatic Mollusks	0-Absent
Fish	0-Absent
Crayfish	0-Absent
Amphibians	0-Absent
Algae	0-Absent
Wetland Plants in Streambed	0-Other
Subtotal =	6

Stream Type Determination

Total Score	30.5
Stream Determination	Perennial (≥ 30)

Notes

Notes

COP South Stream Scoring Form 1

Project	20043 Atlantic Shores COP South Larrabee
ID	317004
Survey Date	02/16/2023
User	Andrew Leonardi
Stream ID:	26-ST006

Administrative 1

Investigator(s)	ALTC
Latitude, Longitude	
Latitude	40.115496
Longitude	-74.175991
Current Precipitation	None
Precipitation in Past 48 Hours	None
Town/County/State	Monmouth County, NJ

General Characteristics 1

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	10
Stream Gradient	Gentle (0-5%)
Substrate	Gravel, Sand (Gritty feel), Silt/Clay (No grit)
OHWM width for stream reach (feet)	15-25

Geomorphology

Continuity of channel bed and bank	3-Strong
Sinuosity of channel along thalweg	0-Absent
In Channel Structures	1-Weak
Particle Size of Stream Substrate	3-Strong
Active/Relic Floodplain	1-Weak
Depositional Bars or Benches	3-Strong
Recent Alluvial Deposits	3-Strong
Are Headcuts present	0-Absent
Grade Control	0-Absent
Natural Valley	0.5-Weak
Second or Greater Order Channel	0-No
Subtotal =	14.5

Hydrology

Presence of Baseflow	3-Strong
Iron Oxidizing Bacteria	1-Weak
Leaf Litter	1.5-Absent
Sediment on Plants or Debris	0-Absent
Organic Debris Lines or Piles	1-Moderate
Soil-based evidence of high water table	3-Yes
Subtotal =	9.5

Biology

Fibrous Roots in Streambed	3-Absent
Rooted Upland Plants in Streambed	3-Absent
Aquatic Macroinvertebrates	0-Absent
Aquatic Mollusks	0-Absent
Fish	0-Absent
Crayfish	0-Absent
Amphibians	0-Absent

Algae	0.5-Weak
Wetland Plants in Streambed	0-Other
Subtotal =	6.5
Stream Type Determination	
Total Score	30.5
Stream Determination	Perennial (≥30)
Notes	
Notes	

COP South Stream Scoring Form 1

Project	20043 Atlantic Shores COP South Larrabee
ID	317256
Survey Date	02/16/2023
User	Andrew Leonardi
Stream ID:	26-ST007
Administrative 1	
Investigator(s)	AL
Latitude, Longitude	
Latitude	40.11840367
Longitude	-74.16799
Current Precipitation	None
Precipitation in Past 48 Hours	None
Town/County/State	Monmouth County, NJ
General Characteristics 1	
NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	6
Stream Gradient	Gentle (0-5%)
Substrate	Gravel, Sand (Gritty feel), Silt/Clay (No grit)
OHWM width for stream reach (feet)	4-12
Geomorphology	
Continuity of channel bed and bank	3-Strong
Sinuosity of channel along thalweg	1-Weak
In Channel Structures	3-Strong
Particle Size of Stream Substrate	3-Strong
Active/Relic Floodplain	0-Absent

Depositional Bars or Benches	2-Moderate
Recent Alluvial Deposits	0-Absent
Are Headcuts present	0-Absent
Grade Control	0-Absent
Natural Valley	0.5-Weak
Second or Greater Order Channel	0-No
Subtotal =	12.5

Hydrology

Presence of Baseflow	3-Strong
Iron Oxidizing Bacteria	3-Strong
Leaf Litter	1-Weak
Sediment on Plants or Debris	0-Absent
Organic Debris Lines or Piles	0-Absent
Soil-based evidence of high water table	3-Yes
Subtotal =	10

Biology

Fibrous Roots in Streambed	3-Absent
Rooted Upland Plants in Streambed	3-Absent
Aquatic Macroinvertebrates	1-Weak
Aquatic Mollusks	0-Absent
Fish	0-Absent
Crayfish	0-Absent
Amphibians	0-Absent
Algae	1-Moderate
Wetland Plants in Streambed	0-Other
Subtotal =	8

Stream Type Determination

Total Score	30.5
Stream Determination	Perennial (≥ 30)

Notes

Notes

COP South Stream Scoring Form 1

Project	20043 Atlantic Shores COP South Larrabee
ID	317251
Survey Date	02/16/2023
User	Andrew Leonardi

Stream ID: 26-ST013

Administrative 1

Investigator(s) ALTC

Latitude, Longitude

Latitude 40.11819683

Longitude -74.16796

Current Precipitation None

Precipitation in Past 48 Hours None

Town/County/State Monmouth County, NJ

General Characteristics 1

NYSDEC Mapped Stream No

Drainage Ditch No

Surface Water Depth at Thalweg (Inches) 0

Stream Gradient Moderate (6-11%)

Substrate Sand (Gritty feel), Silt/Clay (No grit)

OHWM width for stream reach (feet) 2-4

Geomorphology

Continuity of channel bed and bank 2-Moderate

Sinuosity of channel along thalweg 0-Absent

In Channel Structures 1-Weak

Particle Size of Stream Substrate 1-Weak

Active/Relic Floodplain 0-Absent

Depositional Bars or Benches 0-Absent

Recent Alluvial Deposits 0-Absent

Are Headcuts present 0-Absent

Grade Control 0-Absent

Natural Valley 0-Absent

Second or Greater Order Channel 0-No

Subtotal = 4

Hydrology

Presence of Baseflow 0-Absent

Iron Oxidizing Bacteria 0-Absent

Leaf Litter 0-Strong

Sediment on Plants or Debris 0-Absent

Organic Debris Lines or Piles 0-Absent

Soil-based evidence of high water table	0-No
Subtotal =	0
Biology	
Fibrous Roots in Streambed	1-Moderate
Rooted Upland Plants in Streambed	1-Moderate
Aquatic Macroinvertebrates	0-Absent
Aquatic Mollusks	0-Absent
Fish	0-Absent
Crayfish	0-Absent
Amphibians	0-Absent
Algae	0.5-Weak
Wetland Plants in Streambed	0-Other
Subtotal =	2.5
Stream Type Determination	
Total Score	6.5
Stream Determination	Ephemeral (<19)
Notes	
Notes	

COP South Stream Scoring Form 1

Project	20043 Atlantic Shores COP South Larrabee
ID	317262
Survey Date	02/16/2023
User	Andrew Leonardi
Stream ID:	26-ST008
Administrative 1	
Investigator(s)	ALTC
Latitude, Longitude	
Latitude	40.12809967
Longitude	-74.135174
Current Precipitation	None
Precipitation in Past 48 Hours	None
Town/County/State	Monmouth County, NJ
General Characteristics 1	
NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	0
Stream Gradient	Gentle (0-5%)

Substrate	Cobble, Gravel, Sand (Gritty feel)
OHWL width for stream reach (feet)	2-6
Geomorphology	
Continuity of channel bed and bank	3-Strong
Sinuosity of channel along thalweg	0-Absent
In Channel Structures	0-Absent
Particle Size of Stream Substrate	2-Moderate
Active/Relic Floodplain	1-Weak
Depositional Bars or Benches	0-Absent
Recent Alluvial Deposits	2-Moderate
Are Headcuts present	0-Absent
Grade Control	0-Absent
Natural Valley	1-Moderate
Second or Greater Order Channel	0-No
Subtotal =	9
Hydrology	
Presence of Baseflow	0-Absent
Iron Oxidizing Bacteria	0-Absent
Leaf Litter	0-Strong
Sediment on Plants or Debris	0-Absent
Organic Debris Lines or Piles	0-Absent
Soil-based evidence of high water table	3-Yes
Subtotal =	3
Biology	
Fibrous Roots in Streambed	3-Absent
Rooted Upland Plants in Streambed	3-Absent
Aquatic Macroinvertebrates	1-Weak
Aquatic Mollusks	0-Absent
Fish	0-Absent
Crayfish	0-Absent
Amphibians	0-Absent
Algae	0-Absent
Wetland Plants in Streambed	0-Other
Subtotal =	7

Stream Type Determination	
Total Score	19
Stream Determination	Intermittent (≥ 19)
Notes	
Notes	

COP South Stream Scoring Form 1

Project	20043 Atlantic Shores COP South Larrabee
ID	317267
Survey Date	02/21/2023
User	Andrew Leonardi
Stream ID:	26-ST04

Administrative 1

Investigator(s)	ALTCSM
Latitude, Longitude	
Latitude	40.142521
Longitude	-74.120226
Current Precipitation	None
Precipitation in Past 48 Hours	None
Town/County/State	Monmouth County, NJ

General Characteristics 1

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	6
Stream Gradient	Gentle (0-5%)
Substrate	Gravel, Sand (Gritty feel), Silt/Clay (No grit)
OHWM width for stream reach (feet)	1-4

Geomorphology

Continuity of channel bed and bank	3-Strong
Sinuosity of channel along thalweg	2-Moderate
In Channel Structures	2-Moderate
Particle Size of Stream Substrate	3-Strong
Active/Relic Floodplain	1-Weak
Depositional Bars or Benches	0-Absent
Recent Alluvial Deposits	0-Absent
Are Headcuts present	0-Absent

Grade Control	0.5-Weak
Natural Valley	1.5-Strong
Second or Greater Order Channel	0-No
Subtotal =	13

Hydrology

Presence of Baseflow	3-Strong
Iron Oxidizing Bacteria	2-Moderate
Leaf Litter	1-Weak
Sediment on Plants or Debris	0.5-Weak
Organic Debris Lines or Piles	0-Absent
Soil-based evidence of high water table	3-Yes
Subtotal =	9.5

Biology

Fibrous Roots in Streambed	3-Absent
Rooted Upland Plants in Streambed	3-Absent
Aquatic Macroinvertebrates	1-Weak
Aquatic Mollusks	0-Absent
Fish	0-Absent
Crayfish	0-Absent
Amphibians	0-Absent
Algae	0-Absent
Wetland Plants in Streambed	0.75-FACW
Subtotal =	7.75

Stream Type Determination

Total Score	30.25
Stream Determination	Perennial (≥ 30)

Notes

Notes

COP South Stream Scoring Form 1

Project	20043 Atlantic Shores COP South Larrabee
ID	317265
Survey Date	02/21/2023
User	Andrew Leonardi
Stream ID:	26-ST09

Administrative 1

Investigator(s)	TCAL
Latitude, Longitude	

Latitude	40.12772433
Longitude	-74.05554183
Current Precipitation	None
Precipitation in Past 48 Hours	Rain
Town/County/State	Monmouth County, NJ

General Characteristics 1

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	0
Stream Gradient	Gentle (0-5%)
Substrate	Gravel, Sand (Gritty feel)
OHWM width for stream reach (feet)	2-10

Geomorphology

Continuity of channel bed and bank	1-Weak
Sinuosity of channel along thalweg	0-Absent
In Channel Structures	0-Absent
Particle Size of Stream Substrate	1-Weak
Active/Relic Floodplain	0-Absent
Depositional Bars or Benches	0-Absent
Recent Alluvial Deposits	0-Absent
Are Headcuts present	0-Absent
Grade Control	0-Absent
Natural Valley	0.5-Weak
Second or Greater Order Channel	0-No
Subtotal =	2.5

Hydrology

Presence of Baseflow	0-Absent
Iron Oxidizing Bacteria	0-Absent
Leaf Litter	0-Strong
Sediment on Plants or Debris	0-Absent
Organic Debris Lines or Piles	0-Absent
Soil-based evidence of high water table	0-No
Subtotal =	0

Biology

Fibrous Roots in Streambed	0-Strong
Rooted Upland Plants in Streambed	2-Weak
Aquatic Macroinvertebrates	0-Absent
Aquatic Mollusks	0-Absent
Fish	0-Absent
Crayfish	0-Absent
Amphibians	0-Absent
Algae	0-Absent
Wetland Plants in Streambed	0-Other
Subtotal =	2

Stream Type Determination

Total Score	4.5
Stream Determination	Ephemeral (<19)

Notes

Notes

COP South Stream Scoring Form 1

Project	20043 Atlantic Shores COP South Larrabee
ID	317287
Survey Date	02/22/2023
User	Andrew Leonardi
Stream ID:	26-ST014

Administrative 1

Investigator(s)	TCAL
Latitude, Longitude	
Latitude	40.119071
Longitude	-74.165685
Current Precipitation	None
Precipitation in Past 48 Hours	Rain
Town/County/State	Monmouth County, NJ

General Characteristics 1

NYSDEC Mapped Stream	No
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	6
Stream Gradient	Gentle (0-5%)
Substrate	Bedrock, Cobble, Gravel, Sand (Gritty feel)
OHWM width for stream reach (feet)	2-15

Geomorphology

Continuity of channel bed and bank	3-Strong
Sinuosity of channel along thalweg	1-Weak
In Channel Structures	3-Strong
Particle Size of Stream Substrate	3-Strong
Active/Relic Floodplain	3-Strong
Depositional Bars or Benches	1-Weak
Recent Alluvial Deposits	0-Absent
Are Headcuts present	0-Absent
Grade Control	0-Absent
Natural Valley	0.5-Weak
Second or Greater Order Channel	0-No
Subtotal =	14.5
Hydrology	
Presence of Baseflow	3-Strong
Iron Oxidizing Bacteria	3-Strong
Leaf Litter	1.5-Absent
Sediment on Plants or Debris	0-Absent
Organic Debris Lines or Piles	0.5-Weak
Soil-based evidence of high water table	3-Yes
Subtotal =	11
Biology	
Fibrous Roots in Streambed	3-Absent
Rooted Upland Plants in Streambed	3-Absent
Aquatic Macroinvertebrates	0-Absent
Aquatic Mollusks	0-Absent
Fish	0-Absent
Crayfish	0-Absent
Amphibians	0-Absent
Algae	0-Absent
Wetland Plants in Streambed	0-Other
Subtotal =	6
Stream Type Determination	
Total Score	31.5
Stream Determination	Perennial (≥ 30)
Notes	

APPENDIX C

Photo Documentation

Photo 1

Larrabee Landfall and Wetland 1 (WL1) in far background on Army National Guard Facility

Coordinates:

40.118978°N, -74.032386°W



Photo 2

Facing East at Wetland 2 (WL2)

Coordinates:

40.146181°N, -74.107161°W



Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 3

Facing West at Wetland 3 (WL3)

Coordinates:

40.146111°N, -74.107606°W



Photo 4

Facing Northwest at Wetland 4 (WL4)

Coordinates:

40.143784°N, -74.116799°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 5

Facing South at Wetland 5
(WL5) north of
County Route 524

Coordinates:
40.137003°N, -74.137936°W



Photo 6

Facing North at Wetland 6 (WL6)
north of County Route 524

Coordinates:
40.137795°N, -74.143728°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 7

Facing East at Wetland 7 (WL7)

Coordinates:

40.146233°N, -74.168458°W



Photo 8

Facing Southeast at Wetland 8 (WL8)

Coordinates:

40.143908°N, -74.170189°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 9

Facing Southwest at Wetland 9 (WL9) and Watercourse 5 (WC5)

Coordinates:

40.138383°N, -74.175217°W



Photo 10

Facing Northeast at Wetland 10 (WL10) west of County Route 547

Coordinates:

40.135086°N, -74.178353°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 11

Facing West at Wetland 11 (WL11)

Coordinates:

40.128703°N, -74.184172°W



Photo 12

Facing North at Wetland 12 (WL12)

Coordinates:

40.124181°N, -74.187875°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 13

Facing East at Wetland 13 (WL13)

Coordinates:

40.118617°N, -74.192956°W



Photo 14

Facing Northwest at
Watercourse 1 (WC1)

Coordinates:

40.146494°N, -74.107772°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 15

Facing Southeast at
Watercourse 2 (WC2)

Coordinates:

40.143641°N, -74.116545°W



Photo 16

Facing South at Watercourse 3
(WC3)

Coordinates:

40.144312°N, -74.163582°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 17

Facing East at Watercourse 4
(WC4)

Coordinates:

40.146717°N, -74.167686°W



Photo 18

Facing East at Watercourse 5
(WC5)

Coordinates:

40.162983°N, -74.148597°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 19

Facing East at Watercourse 6
(WC6)

Coordinates:

40.135078°N, -74.178161°W



Photo 20

Facing Southeast at
Watercourse 7 (WC7)

Coordinates:

40.128342°N, -74.184242°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 21

Facing Southeast at
Watercourse 9 (WC9)

Coordinates:

40.123961°N, -74.188178°W



Photo 22

Facing Northwest at
Watercourse 10 (WC10)

Coordinates:

40.118728°N, -74.193061°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report



Photo 23

Representative view of
forested uplands

Coordinates:

40.141006°N, -74.172858°W



Photo 24

Representative view of roadside
and open field uplands

Coordinates:

40.155067°N, -74.114861°W

Atlantic Shores Offshore Wind – Larrabee Onshore Study Area

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

Wetland and Stream Delineation Report

APPENDIX D

Field Delineated Wetlands and Streams Plans

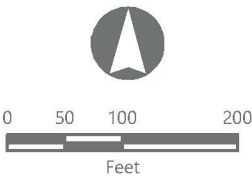
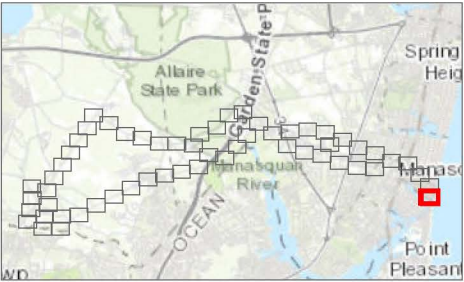


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

- Wetland Flag
- Delineated Wetland
- ▨ Wetland Transition Area
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

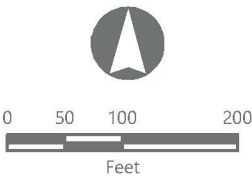
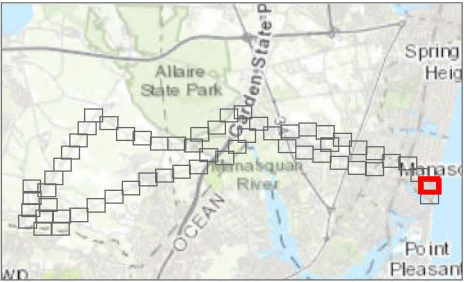


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

- Wetland Transition Area
- Study Area



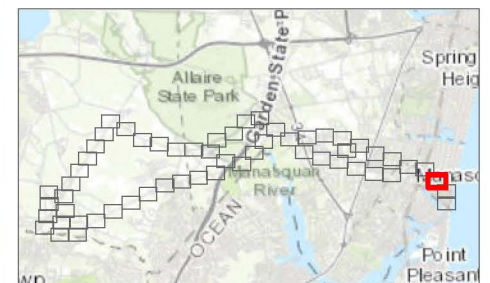
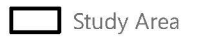
Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

Atlantic Shores South Offshore Wind – Larrabee Onshore Project Design Envelope

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

Wetland Delineation Report



A horizontal number line is shown with tick marks at 0, 50, 100, and 200. The word "Feet" is written below the line. A shaded gray region covers the segment from 50 to 100.

Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

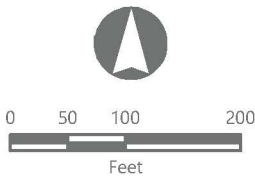
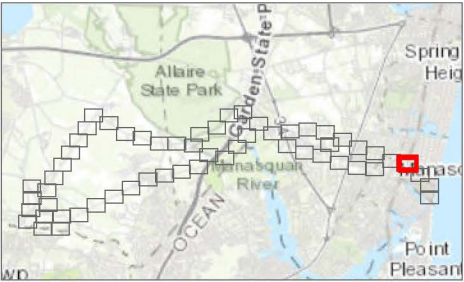


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

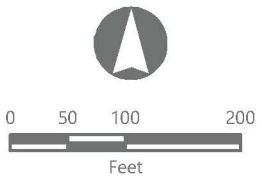
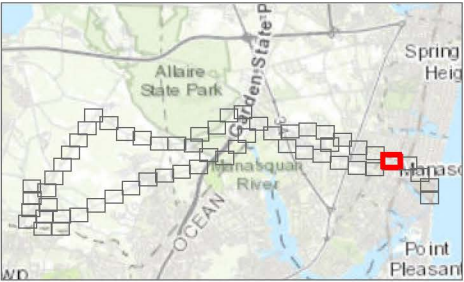
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- ▨ Delineated Wetland
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery



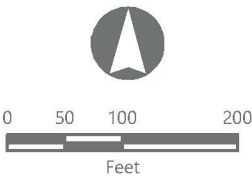
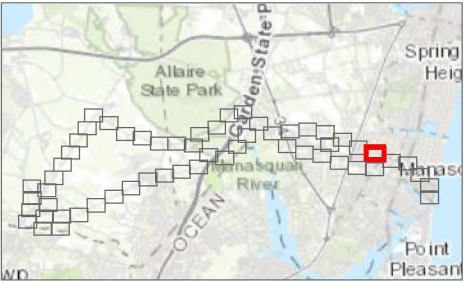


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

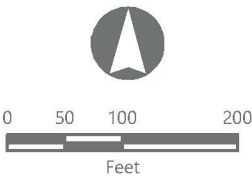
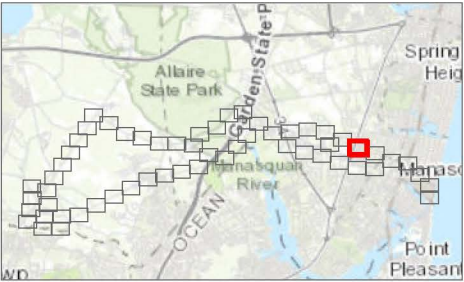


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

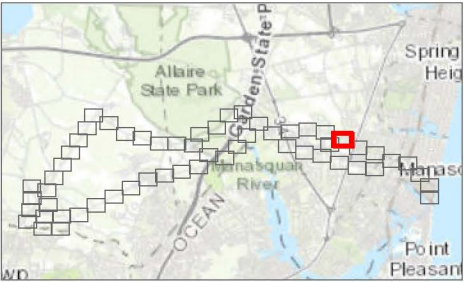
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

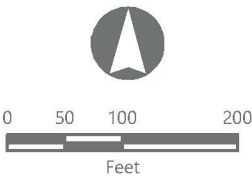
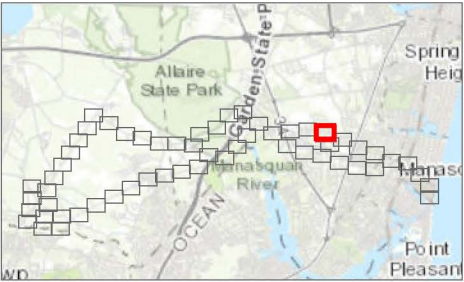
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Delineated Wetland
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

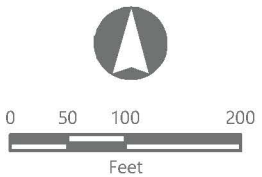
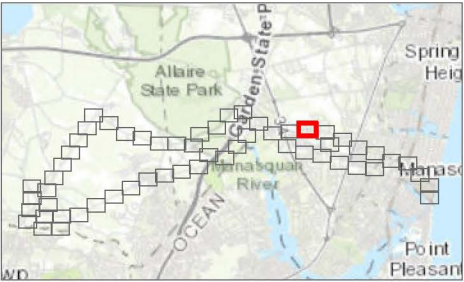
ATLANTIC SHORES
offshore wind

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- ▨ Delineated Wetland
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

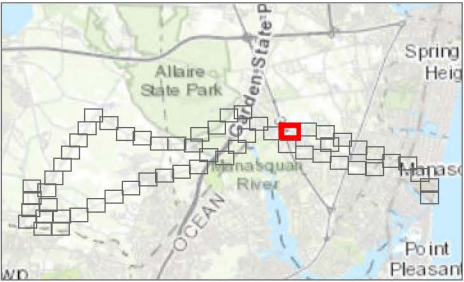
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

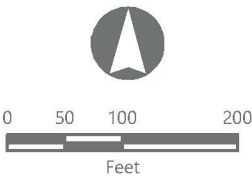
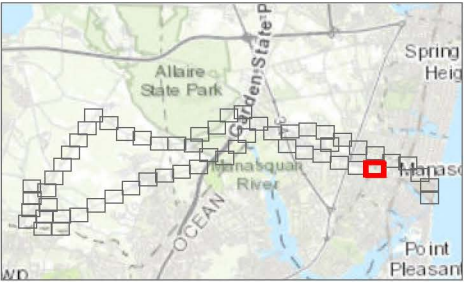


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

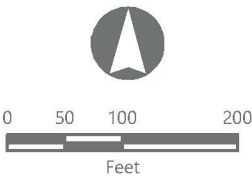
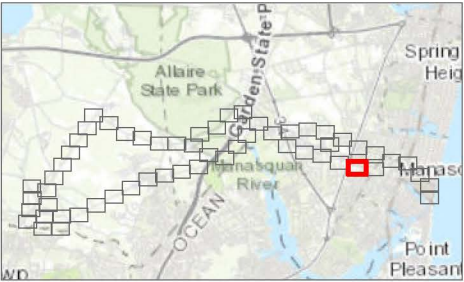


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

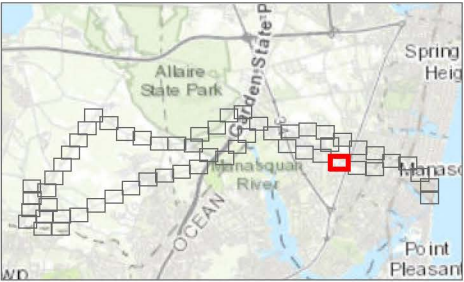
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

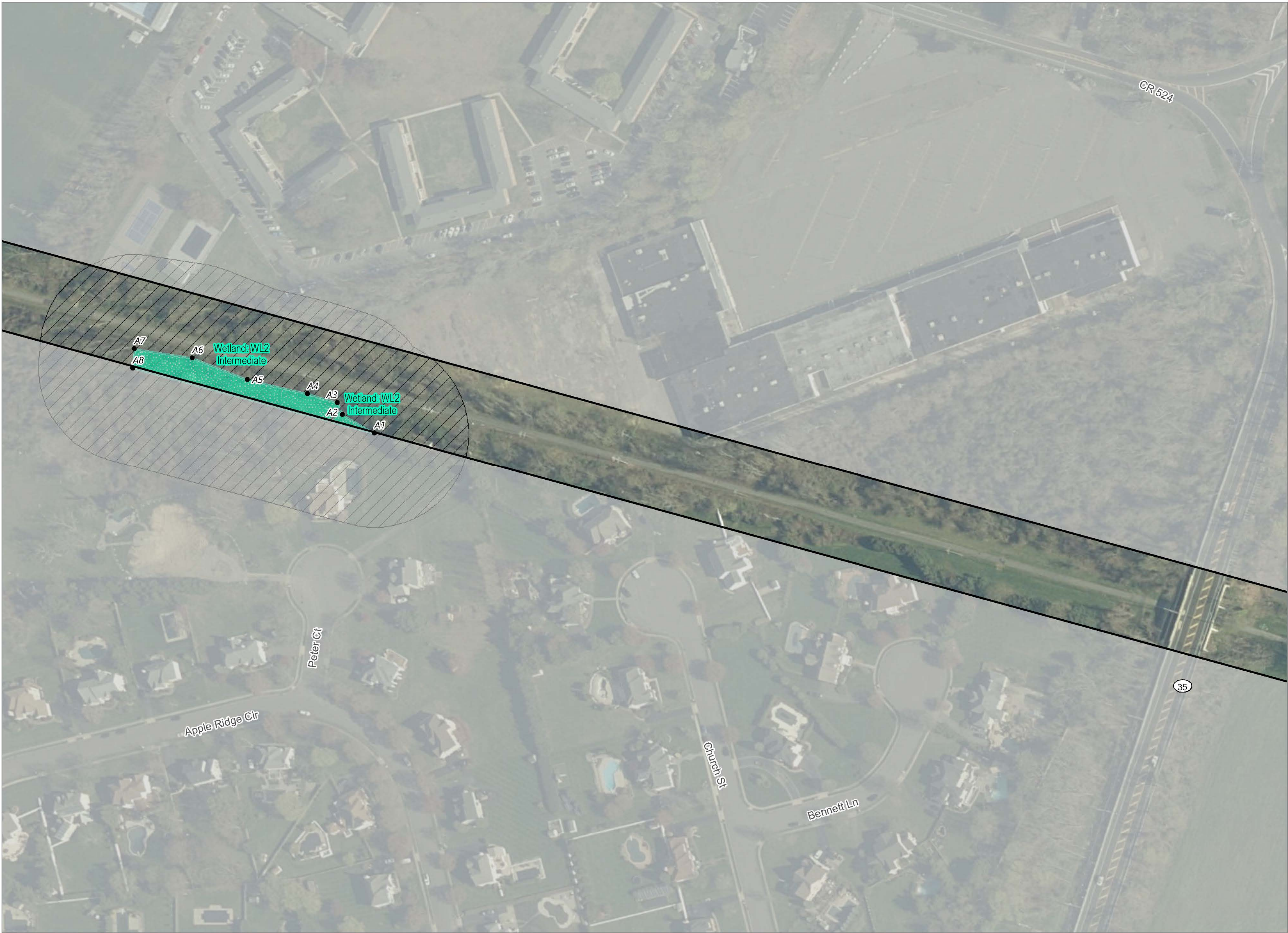
- Wetland Flag
- ▨ Delineated Wetland
- ▨ Wetland Transition Area
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind




EDR

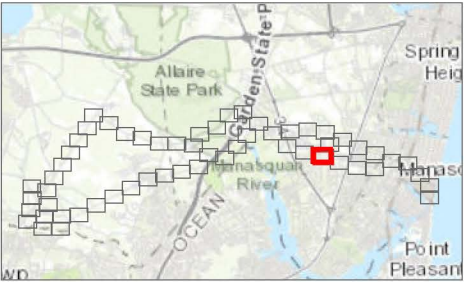


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
-  Delineated Wetland
-  Wetland Transition Area
-  Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR



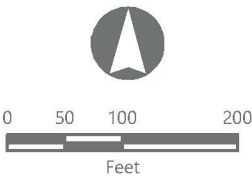
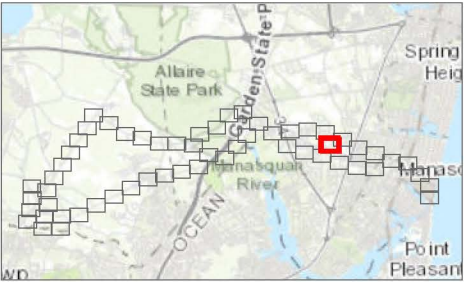


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

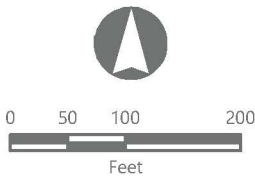
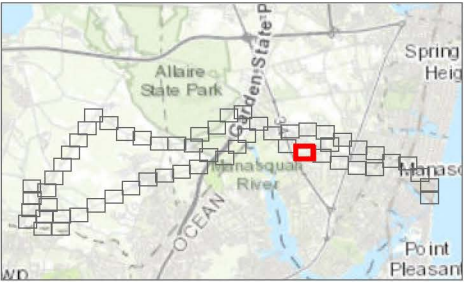


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

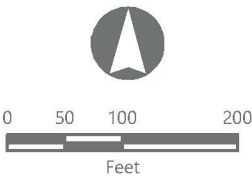
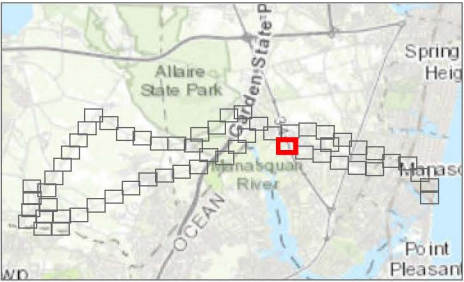


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

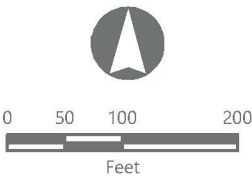
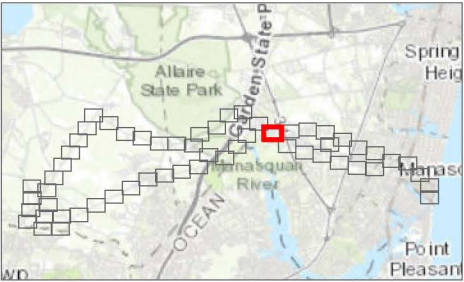


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

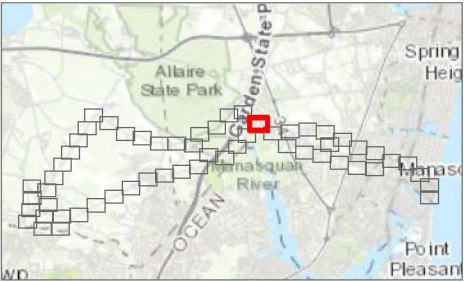
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

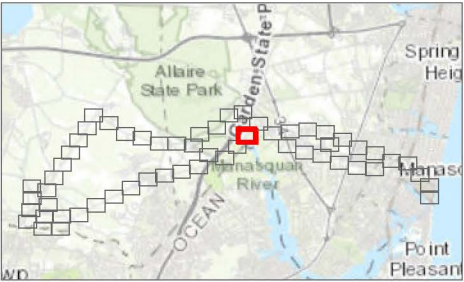
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery



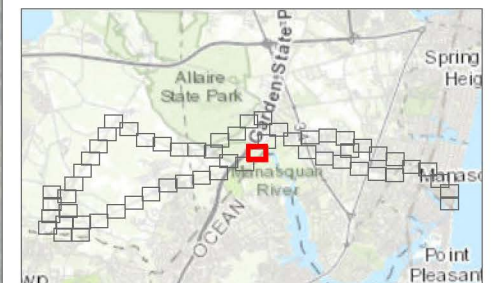
Atlantic Shores South Offshore Wind – Larrabee Onshore Project Design Envelope

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

Wetland Delineation Report



- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- ▨ Wetland Transition Area
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

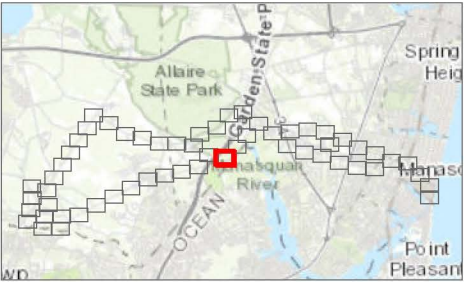
ATLANTIC SHORES
offshore wind

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

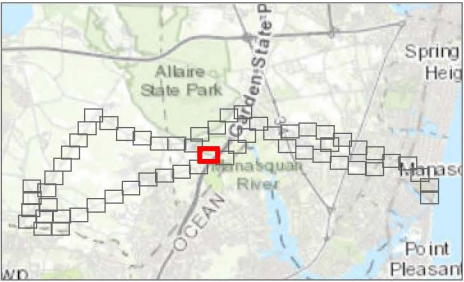
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

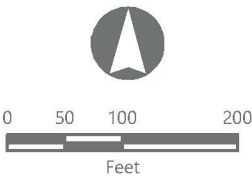
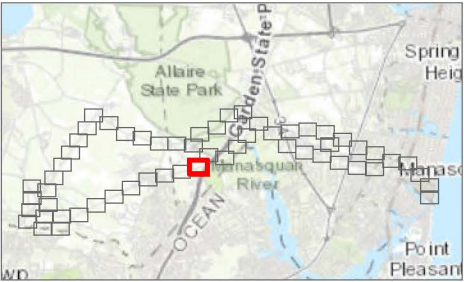


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

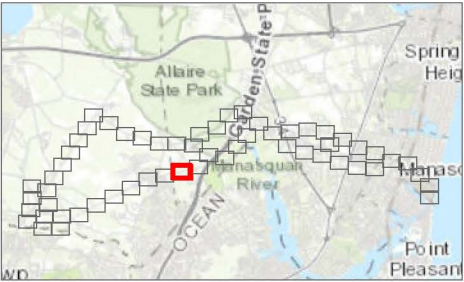
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

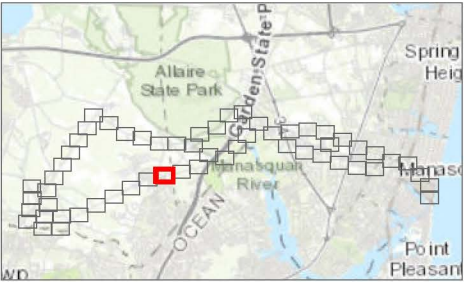


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR



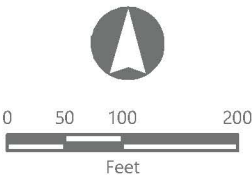
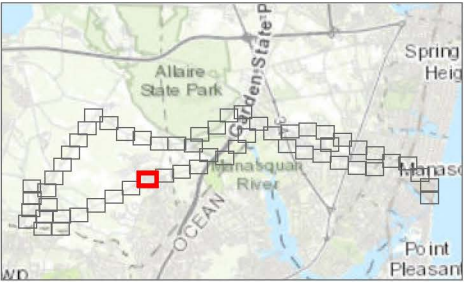


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

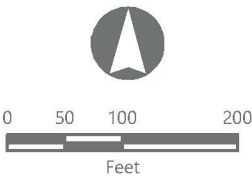
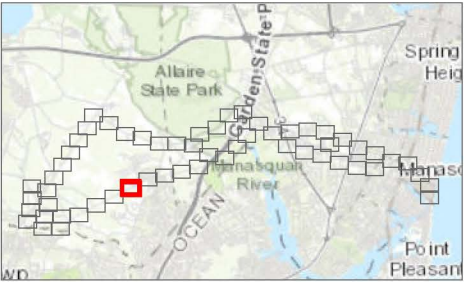


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

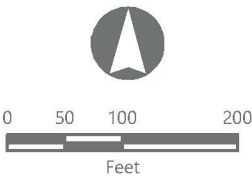
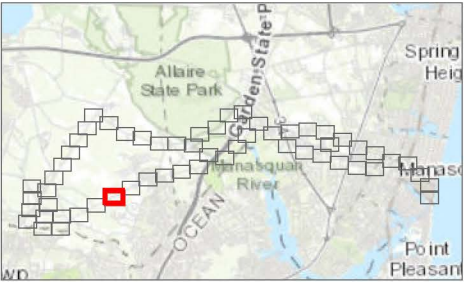
Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

-  Wetland Transition Area
-  Study Area

Lakewood Allenwood Rd



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery



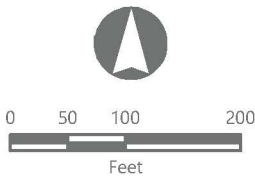
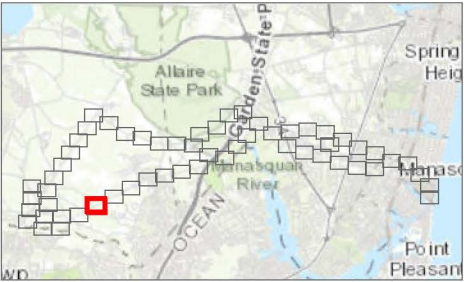
Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report



- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- ▨ Wetland Transition Area
- ▭ Study Area



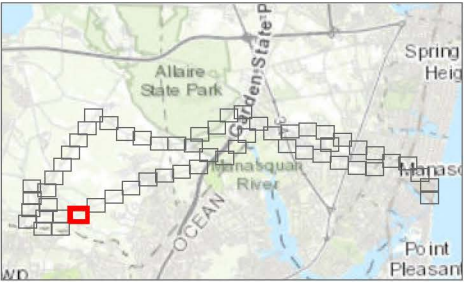
Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

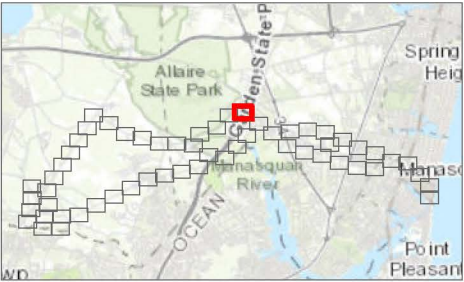
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

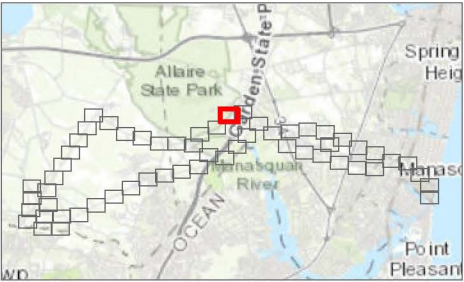
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

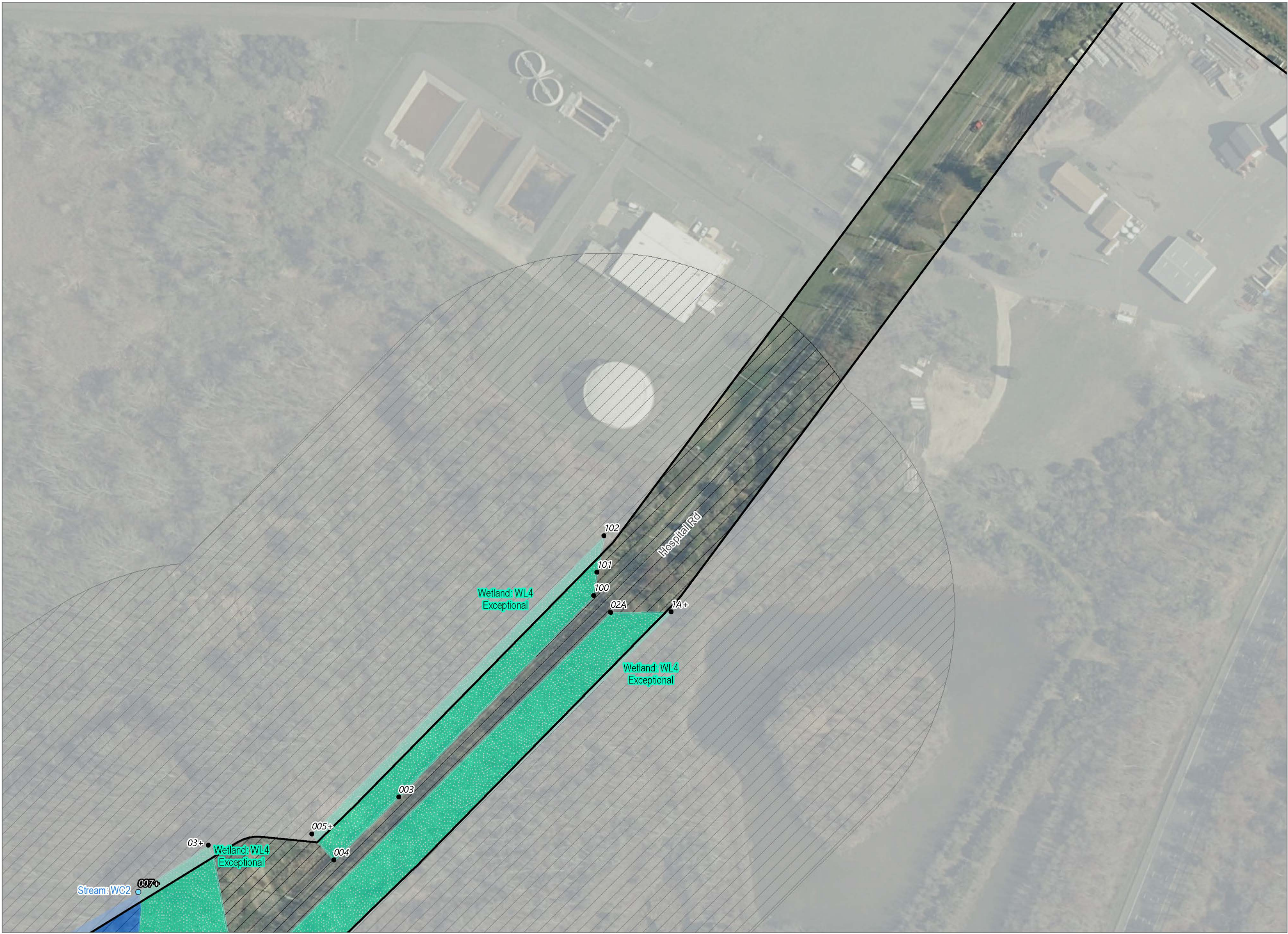
- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area

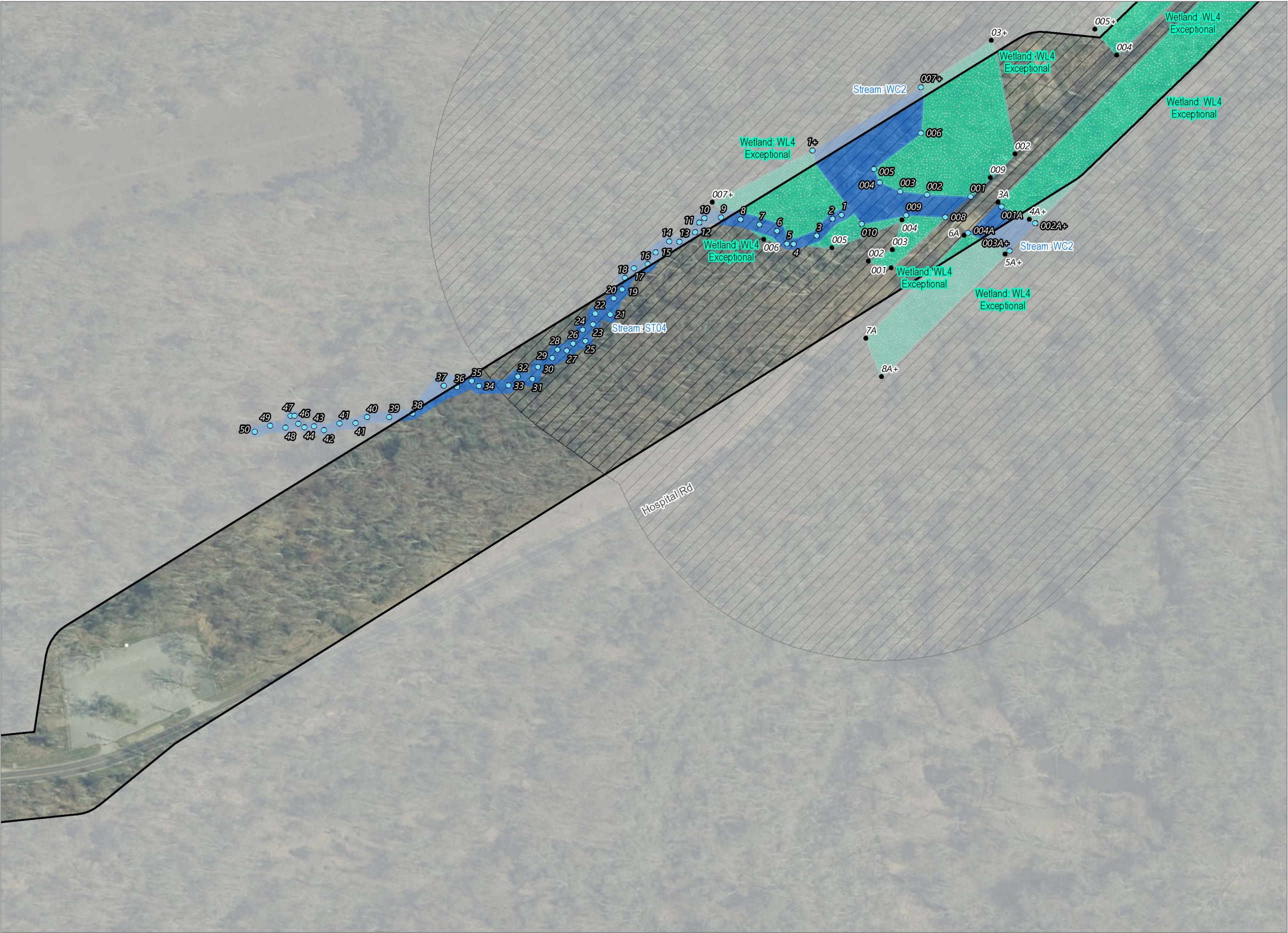


Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR



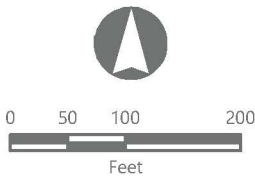
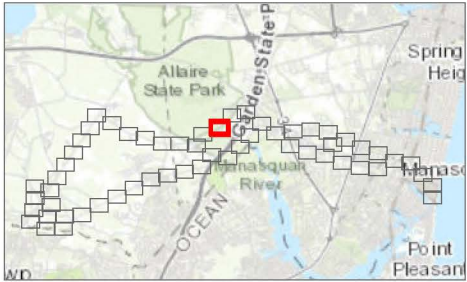


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- ▨ Wetland Transition Area
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

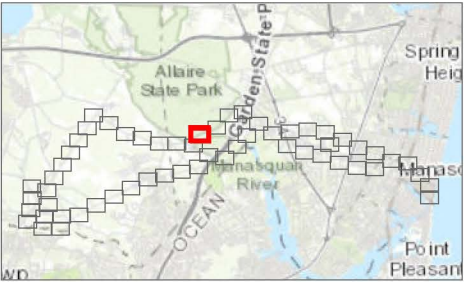
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery



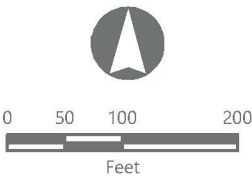
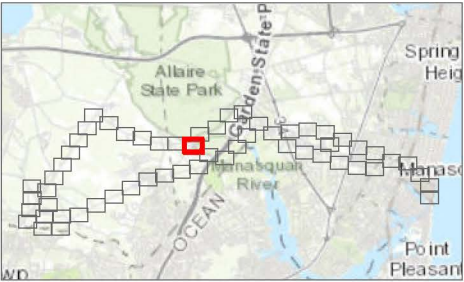


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

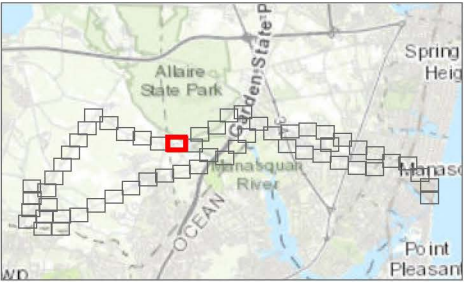
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

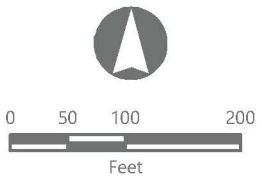
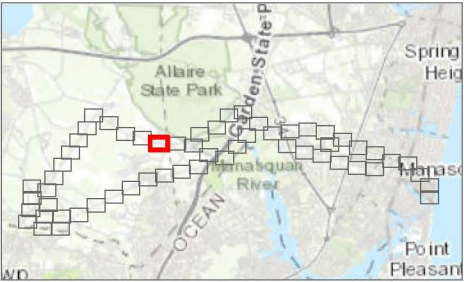


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- ▨ Delineated Wetland
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

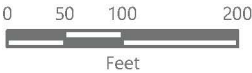
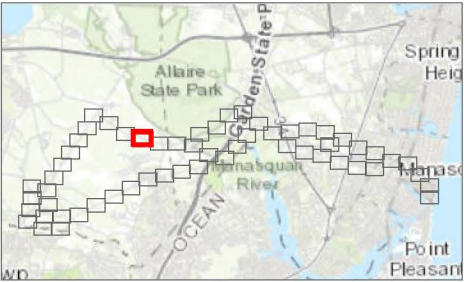


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery



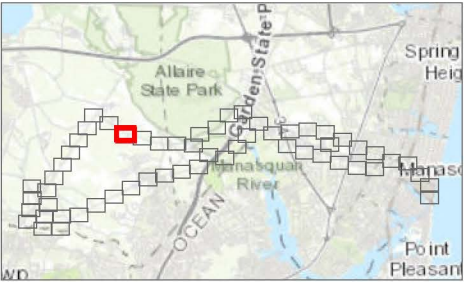
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

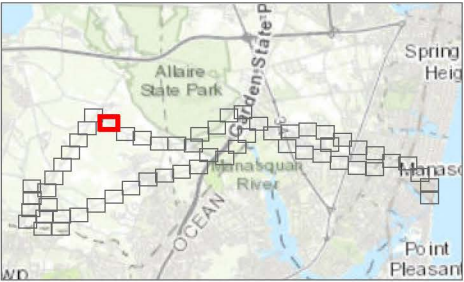


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

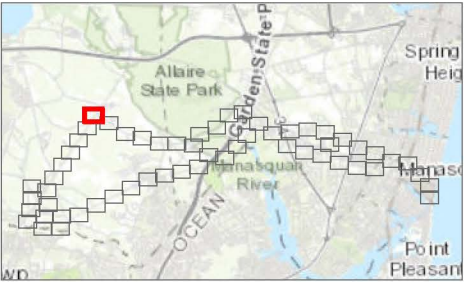


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

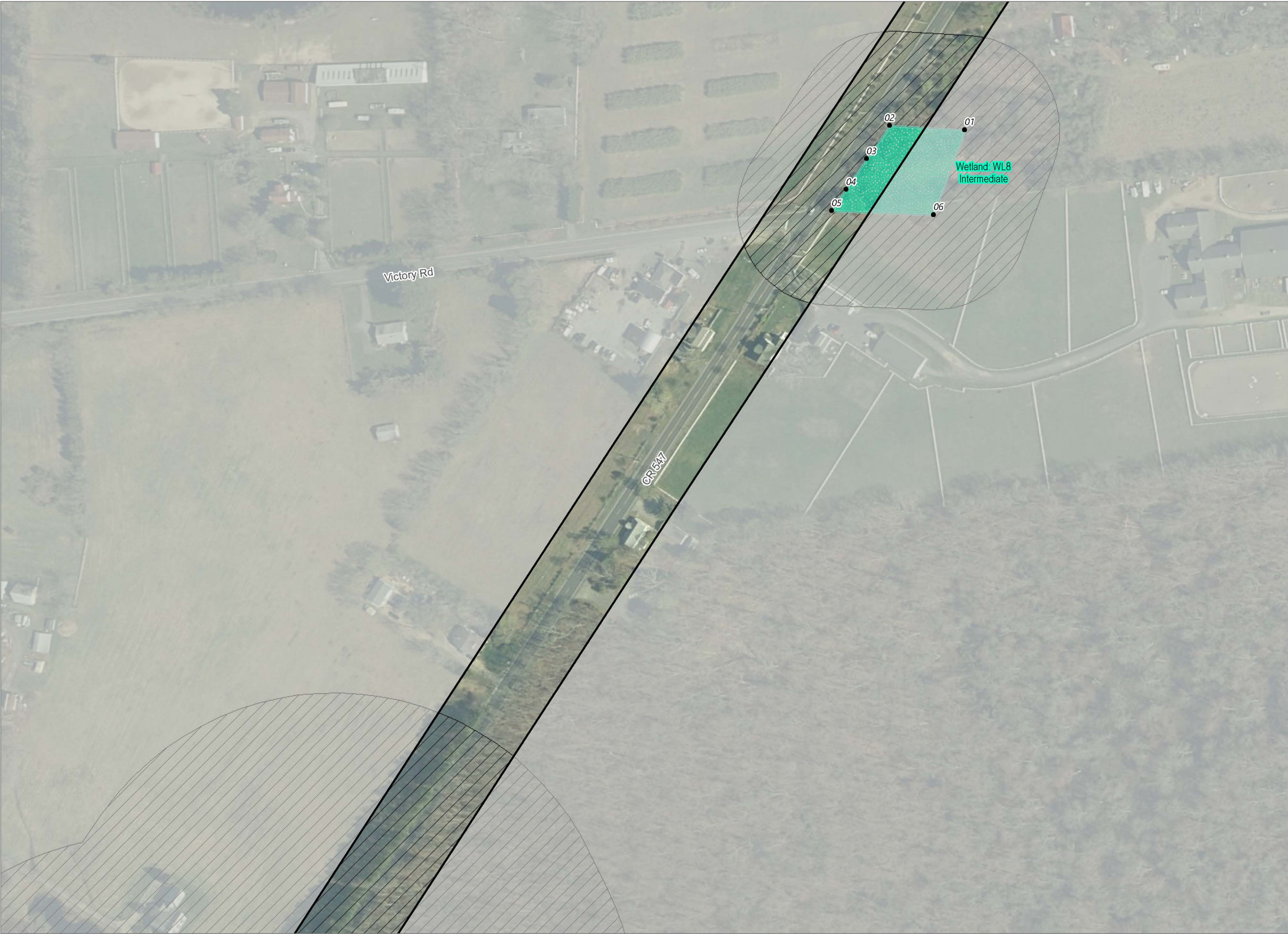
- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

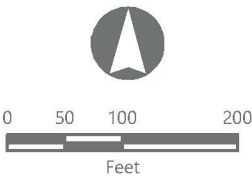
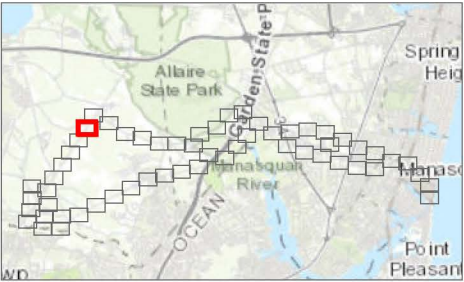


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- ▨ Delineated Wetland
- ▨ Wetland Transition Area
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

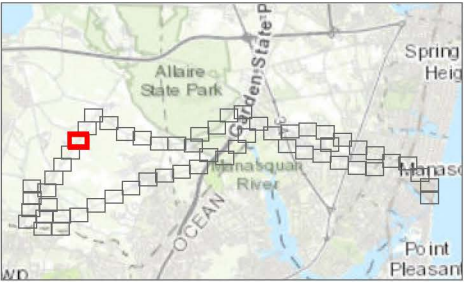
ATLANTIC SHORES
offshore wind

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

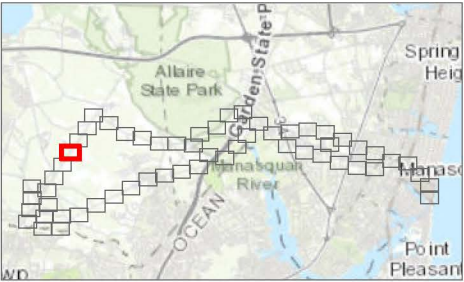
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

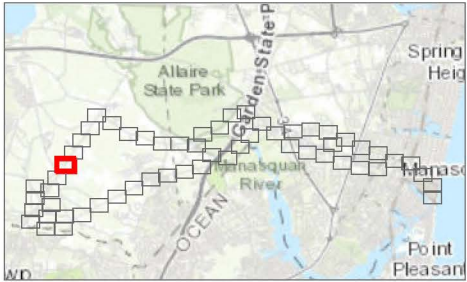
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

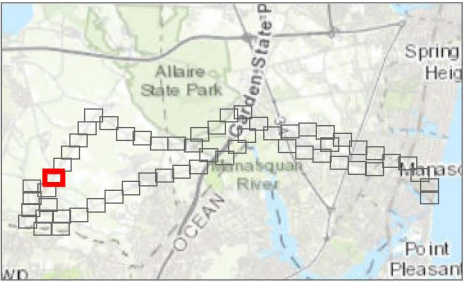


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR



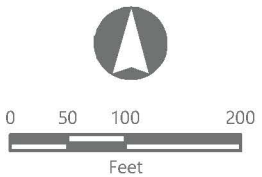
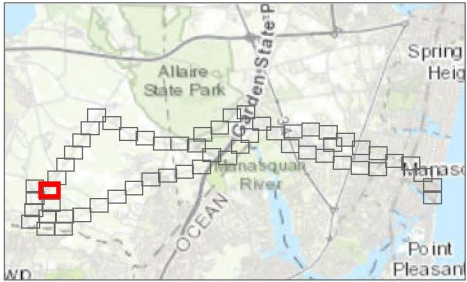


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

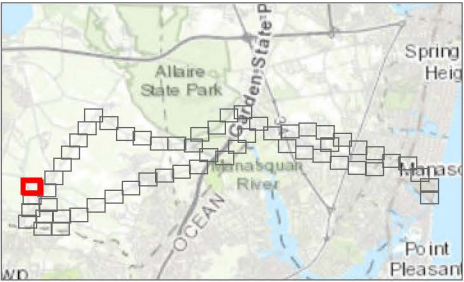
EDR

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

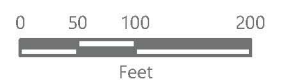
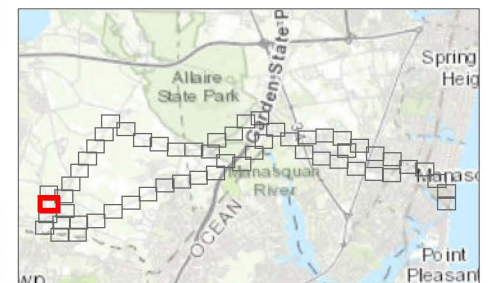
Atlantic Shores South Offshore Wind – Larrabee Onshore Project Design Envelope

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

Wetland Delineation Report



- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- ▨ Wetland Transition Area
- ▭ Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

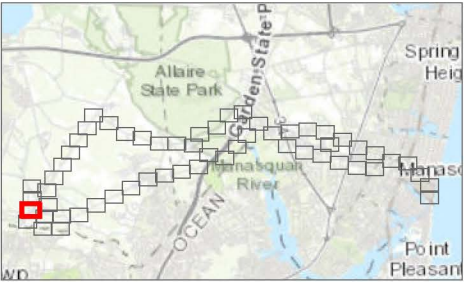


Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

- Wetland Flag
- Stream Flag
- Delineated Stream
- Delineated Wetland
- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR



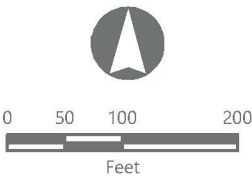
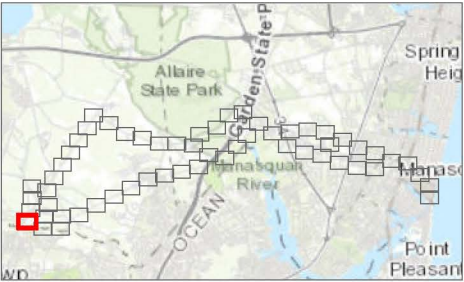


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

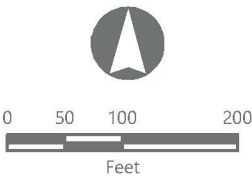
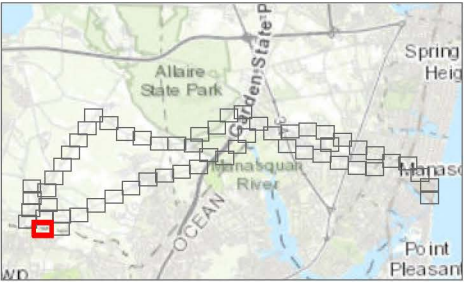


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

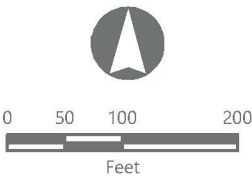
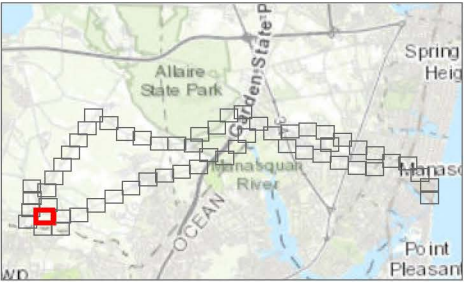


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

- Wetland Transition Area
- Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

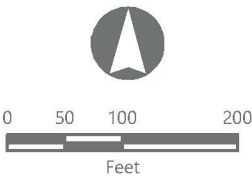
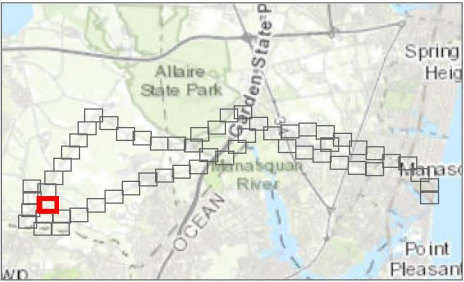


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

- Wetland Transition Area
- Study Area



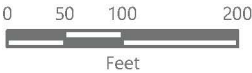
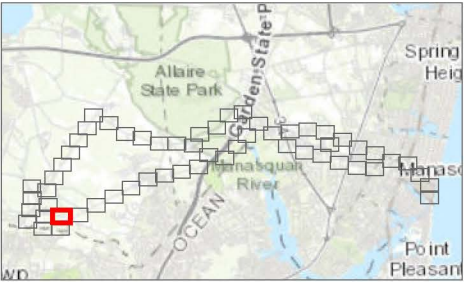
Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope

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

Wetland Delineation Report

Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR

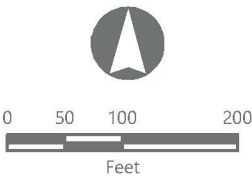
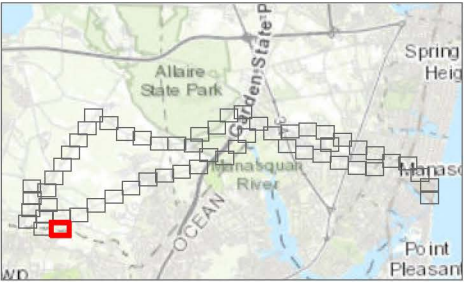


**Atlantic Shores South
Offshore Wind –
Larrabee Onshore
Project Design
Envelope**

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

Wetland Delineation Report

 Study Area



Prepared February 27, 2023
Basemap: NJ Office of GIS 2015 Natural Color Imagery

ATLANTIC SHORES
offshore wind

EDR