Wetland and Stream Delineation Report

Mid Atlantic Offshore Development (MAOD) Connector Station Development

Township of Howell, Monmouth County, New Jersey

Prepared for:

Mid-Atlantic Offshore Development (MAOD)
15445 Innovation Drive
San Diego, CA 92128-3432

Prepared by:

Environmental Design & Research, D.P.C.
217 Montgomery Street, Suite 1100
Syracuse, New York 13202
www.edrdpc.com

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ACRONYM LIST

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
MAOD	Mid-Atlantic Offshore Development
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
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

Mid-Atlantic Offshore Development (MAOD) is a 50:50 joint venture between Shell New Energies US, LLC and EDF Renewables North America. MAOD is proposing to construct an electrical connector station with an electrical switch yard, that contains a multiple converter station facility (the Project). The Project is located in Howell Township, Monmouth County, New Jersey (Figure 1). The switch yard and converter stations are being constructed to support the State of New Jersey's renewable energy goals, more specifically the New Jersey Board of Public Utilities State Agreement Approach to provide transmission and grid interconnection solutions to offshore wind developers. The project will provide an y electrical grid tie in location for future offshore wind development projects. Based on the size of the MAOD substation development, it is anticipated that four offshore developers will be able to install converter station equipment and ultimately tie into the New Jersey electrical power grid through the MAOD connector station development.

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR), was contracted by MAOD to conduct wetland and stream delineations associated with the infrastructure necessary to support the Project's converter station development located in Township of Howell, Monmouth County, New Jersey. The delineation Study Area (herein referred to as the Study Area) includes the proposed MAOD Switchyard Site, converter station areas, stormwater management facilities, access roads, and conduit areas (Figure 2 and Figure 3).

The Project will be constructed within approximately 70 acres of a 100-acre parcel (Figure 3). This project encompasses the site development needed to prepare a location for the installation of electrical switch yard equipment and the converter station equipment which will be installed by up to four Offshore Wind Developers, chosen by the NJ BPU through one of the BPU's current and/or future solicitations. The project also includes the installation of conduits located along Randolph Road. The conduits will provide underground utility access to each of the four offshore wind developer converter station areas. MAOD will only be installing electrical equipment within the western portion of the land parcel (labeled "MAOD Switchyard Site" in Figure 3). For the four offshore wind developer's substation areas (labeled "Generator Areas" in Figure 3), MAOD will be preparing each area to be fit-for-purpose (i.e., tree clearing, grading, etc.).

This report characterizes the 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.

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 State's Freshwater Wetlands Protection Act.

In addition, Coastal Wetlands are regulated according to the Wetlands Act of 1970, which authorized the NJDEP to regulate 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), vary 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 (ft^2), is considered a drainage ditch or swale, a detention facility created for stormwater purposes or existing in lawns, maintained landscaped areas and other disturbed locations.
- Intermediate Resource Value (50-foot transition area) wetlands are those wetlands that are not classified as either exceptional or ordinary resource value.

- Exceptional Resource Value (150-foot transition area in freshwater wetland systems and 300-foot in tidal wetland systems) wetlands are those that discharge into trout production waters or their tributaries or Category One 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, 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, discussion of the evaluation of the three wetland parameters (i.e., hydrology, soils, and vegetation), and the process of evaluating the three parameters to determine the location and extent of the federal and/or state jurisdictional boundaries of wetlands and waters. This report also includes a preliminary evaluation of the resource value of each wetland according to NJDEP regulations for the purpose of supporting required permit applications.

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

2.0 GENERAL SITE CONDITIONS

Publicly available information used in determining the presence and approximate boundaries of wetlands, State open waters, and/or 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 the United States Geological Survey (USGS) topographic mapping (i.e., Lakewood NJ 7.5 minute quadrangle), USFWS National Wetlands Inventory (NWI) mapping, NJDEP Wetlands mapping, the Natural Resources Conservation Service (NRCS) Web Soil Survey (Soil Survey Staff, 2023), 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 Study Area is located within the Outer Coastal Plain physiographic province of New Jersey. The local geography includes soils 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 Study Area, elevations range from approximately 50 to 65 feet above mean sea level.

The Web Soil Survey of Monmouth County (Soil Survey Staff, 2020) indicates the occurrence of 7 soil mapping units within the Study Area (Figure 4). Klej lomy sand (KkgB) is the dominant soils series mapped within the Study Area with significant areas of Lakewood sand (LasB) and Berryland sand (BerAt) also mapped. Soils range from very poorly drained in the southern portion of the site to excessively drained in

the central and northern portions of the site, and soil textures are predominantly sand. 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, 2023) and the National Hydric Soils List (NRCS, 2020).

Table 1. Study Area Soils

Mapping Unit Symbol	Series	Slope (%)	Drainage[1]	Hydric Percentage	Hydric Rating[2]
AtsAO	Atsion sand, Northern Tidewater Area	0-2	PD	95	Hydric
BerAt	Berryland sand, frequently flooded	0-2	VPD	100	Hydric
EveB	Evesboro sand	0-5	ED	10	Partially Hydric
EveC	Evesboro sand	5-10	ED	0	Not Hydric
KkgB	Klej loamy sand	0-5	SPD	10	Partially Hydric
LasB	Lakewood sand	0-5	ED	5	Partially Hydric

1 Soil drainage is represented by the following abbreviation: "ED" = excessively drained, "SPD" = somewhat poorly drained, "PD" = poorly drained, and "VPD" = very poorly drained.
2 Hydric = 50-100, Partially Hydric = 1-49, Not Hydric = 0

2.2 Hydrology

Broadly, the Study Area is located in the NJDEP Barnegat Bay Watershed Management Area (WMA) and occurs in the following subbasin, watershed and subwatershed Hydrologic Unit Codes (HUC):

- HUC 8:
    - Mullica-Toms (02040301)
- HUC 10:
    - Metedeconk River (0204030104)
- HUC 12:
    - North Branch Metedeconk River (020403010202)

Most of the surface hydrology within the Study Area is generated by precipitation and surface water run-off from adjacent land that drains into the North Branch Metedeconk River upstream. Due to the sandy

texture of the soil and the Study Area being near sea level, there is likely some groundwater influence in the southern portion of the Study Area within the vicinity of the North Branch Metedeconk River.

Total annual precipitation (from 2000 to 2022) averages 43.87 inches at Trenton, New Jersey, and 52.71 inches in the Atlantic City Region (NOAA, 2023). The on-site wetland delineation took place during the growing season in May 2023. Precipitation for the month of April 2023 was well above the average (6.52 inches [Atlantic City]/4.86 [Trenton]) compared to the typical monthly average in Atlantic City (3.6 inches) and Trenton (3.79), New Jersey. May 2023 was well below average (1.30 inches [Atlantic City]/0.61 inches [Trenton]) compared to the typical monthly average in Atlantic City (3.31 inches) and Trenton (3.84 inches), New Jersey.

2.3 Federal- and State-Mapped Wetlands and Streams

New Jersey State-mapped wetlands indicate that there are four mapped wetlands totaling approximately 18 acres within the Study Area (Figure 5). The mapped wetlands include deciduous wooded wetlands (10.16 acres), mixed scrub/shrub wetlands (deciduous dominant [0.06 acres]), mixed wooded wetlands (deciduous dominant [7.89 acres]).

NWI mapping indicates the presence of one freshwater forested/shrub wetland community totaling approximately 16.4 acres within the Study Area (Figure 5). New Jersey mapping identifies one waterway within the Study Area: approximately 3,694 linear feet of the North Branch of the Metedeconk River.

2.4 Mapped Floodplains

According to the Federal Emergency Management Agency (FEMA) map service, the entire southern portion of the Study Area is within the 1% Annual Chance Flood zone. The rest of the Study Area is outside of the 1% Annual Chance Flood Zone, indicating minimal flood hazard in this portion of the Study Area. The southern portion of the Study Area is associated with the North Branch of the Metedeconk River and is located in a special flood hazard area (100-year flood zone) (Figure 6).

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 Study Area encompasses approximately 99.4 acres and consists primarily of deciduous forest and coniferous brush/shrubland, as well as deciduous wooded wetlands (Table 2). The location and extent of various land use and land cover locations is provided in Figure 7.

Table 2. Vegetation/Land Cover Within the Study Area

Land Cover Class	Acres	Percent Cover (%)
Deciduous Forest (>50% Crown Closure)	31.8	32.0
Coniferous Brush/Shrubland	24.1	24.3
Deciduous Wooded Wetlands	10.2	10.2
Mixed Deciduous/Coniferous Brush/Shrubland	7.2	7.2
Coniferous Forest (>50% Crown Closure)	6.1	6.1
Mixed Wooded Wetlands (Deciduous Dom.)	4.9	4.9
Mixed Forest (>50% Coniferous With >50% Crown Closure)	3.5	3.5
Mixed Wooded Wetlands (Deciduous Dom.)	3.0	3.1
Mixed Deciduous/Coniferous Brush/Shrubland	2.5	2.5
Mixed Forest (>50% Coniferous With 10-50% Crown Closure)	2.2	2.2
Mixed Deciduous/Coniferous Brush/Shrubland	1.7	1.7
Streams And Canals	1.2	1.3
Mixed Forest (>50% Coniferous With >50% Crown Closure)	0.9	1.0
Deciduous Forest (10-50% Crown Closure)	0.1	0.1
Mixed Scrub/Shrub Wetlands (Deciduous Dom.)	0.1	0.1
Residential, Rural, Single Unit	0.02	0.02
Total	**99.4**	**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 and stream delineations to identify areas likely to contain wetland and stream resources within the Study Area. This desktop analysis guided the field wetland delineation conducted in May 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 Study Area were classified based on the Cowardin et al. (1979) classification system.

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

4.0 RESULTS

EDR environmental scientists field delineated one wetland and one stream within the Study Area. 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: palustrine forested wetland (PFO), and perennial stream (R3).

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	NJDEP Resource Value Classification	Anticipated Federal Jurisdiction[4]	Anticipated State Jurisdiction[5]
			PFO					
20-W1	40.11129	-74.185134	14.4	--	--	Intermediate[6]	Yes	Yes
20-ST001	40.11093	-74.18543	--	R3	3,853	--	Yes	Yes

[1] Field ID assigned by EDR.

[2] Wetland community types are based upon the Cowardin et al. (1979) classification system: palustrine forested wetland (PFO).

[3] Stream type is based upon the Cowardin et al. (1979) classification system: upper perennial stream (R3).

[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.

[6] Based on and NJDEP Letter of Interpretation approved in 2018 for the site.

[*] Indicates approximated wetland feature, wetland acreage is not exact.

Neither the wetland or North Branch Metedeconk River is tidal or within 1,000 feet of the head of tide; therefore, only NJDEP jurisdiction under the Freshwater Wetlands Protection Act is assumed. This does not negate USACE jurisdiction as it relates to Section 404 of the Clean Water Act because NJDEP has assumed federal jurisdiction under the state's Freshwater Wetlands Protection Act. Section 4.1.1 provides a description of the delineated wetland within the Study Area and Section 4.1.2 provides a description of the delineated stream within the Study Area.

4.1.1 Wetlands

EDR identified one forested wetland totaling approximately 14.4 acres within the Study Area (Figure 8). A detailed description is provided in this subsection which includes information to support resource classifications of ordinary, intermediate, or exceptional.

Wetland 1 (20-W1) (PFO) (Photos 1-4 in Appendix C)

Wetland 1 (20-W1) is a large PFO wetland associated with the North Branch Metedeconk River in the southern portion of the Study Area. The wetland is dominated by red maple (*Acer rubrum*, FAC) in the overstory. The sapling/shrub layer is dominated by highbush blueberry (*Vaccinium corymbosum*, FACW) and coastal sweet-pepperbush (*Clethra alnifolia*, FAC). The herbaceous layer is dominated by cinnamon fern (*Osmunda cinnamomea*, FACW), Japanese honeysuckle (*Lonicera japonica*, FACU), American wintergreen (*Pyrola americana*, FAC), skunk cabbage (*Symplocarpus foetidus*, OBL), royal fern (*Osmunda regalis*, OBL) and soft rush (*Juncus effusus*, OBL). Soils observed on site met criteria for a Depleted Matrix (F3) hydric soil indicator with 0-2" of 10YR 2/1 Loam and 3-12" of 10YR 6/2 clay loam with 10% 10YR 6/8 redox concentration in the matrix as well as 0-5" 10YR 2/1 sandy loam and 6-12" 10YR 4/1 fine sand with 25% 10YR 6/8 redox concentrations in the matrix. Additionally other soil samples met requirements for Histosol (A1) with 0-18" of 10YR 2/1 muck. Hydrology indicators observed during site investigations included surface water (A1), a high-water table (A2), saturation (A3) and water-stained leaves (B9).

The wetland-upland transition was relatively abrupt, and generally followed site topography. The adjacent upland is deciduous forest with an overstory dominated by white oak (*Quercus alba*, FACU), flowering dogwood (*Cornus florida*, FACU), red maple (*Acer rubrum*, FAC), and eastern red-cedar (*Juniperus virginiana*, FACU); a shrub layer dominated by sweet cherry (*Prunus avium*, FACU) and American holly (*Ilex opaca*, FACU). The ground layer was generally sparce, but where vegetation was present sensitive fern (*Onoclea sensibilis*, FACW), eastern poison ivy (*Toxicodendron radicans*, FAC) and multiflora rose (*Rosa multiflora*, FACU) were the dominant species. No indicators of hydric soils or wetland hydrology were observed in the upland.

4.1.2 Surface Waters

EDR field delineated one surface water that includes an approximate 3,853-foot section of the North Branch Metedeconk River within the Study Area. Description of the stream is presented in this subsection.

Stream 1 (20-ST001) – Upper Perennial (R3) (Photos 5-7 in Appendix C)

Stream 1 (20-ST001), which is a section of the North Branch Metedeconk River, flows from west to east along the southern edge of the Study Area. 20-ST001 has a gentle slope (1-5%) with an approximate bank width of 20 feet. At the time of field investigation, the stream had an approximate water depth of 36-48 inches, and was characterized by channel sinuosity, alluvial deposits, overhanging vegetation, undercut banks, and course woody debris. The substrate consisted of silt/clay, sand, and cobble.

5.0 CONCLUSIONS

EDR conducted a wetland and stream delineation in May 2023 for the MAOD proposed connector station facility in Howell Township, Monmouth County, New Jersey. A total of approximately 14.4 acres of PFO wetland and one perennial stream (R3) (totaling 3,853 linear feet) were identified and delineated within the Study Area. The stream is the North Branch Metedeconk River.

The delineated wetland and stream are under the jurisdiction of the NJDEP under the New Jersey Freshwater Wetlands Protection Act. New Jersey has assumed federal jurisdiction of wetlands and streams greater than 1,000 feet from the head of tide that would typically be under the jurisdiction of the USACE. Even though New Jersey has assumed jurisdiction over the delineated wetland and stream within the Study Area, the wetland and stream have presumed federal jurisdiction. Additionally, the wetland does not likely meet the definition of an ordinary or exception resource value wetland and is presumed to be of intermediate value and would likely be assigned a 50-foot wetland transition area.

The presumed jurisdiction of the delineated wetland and stream should not be considered final until a Letter of Interpretation (LOI) is issued by the NJDEP concurring with the location and extent of the delineated wetland and stream. The NJDEP will also need to confirm the resource value classification presented in Table 3.

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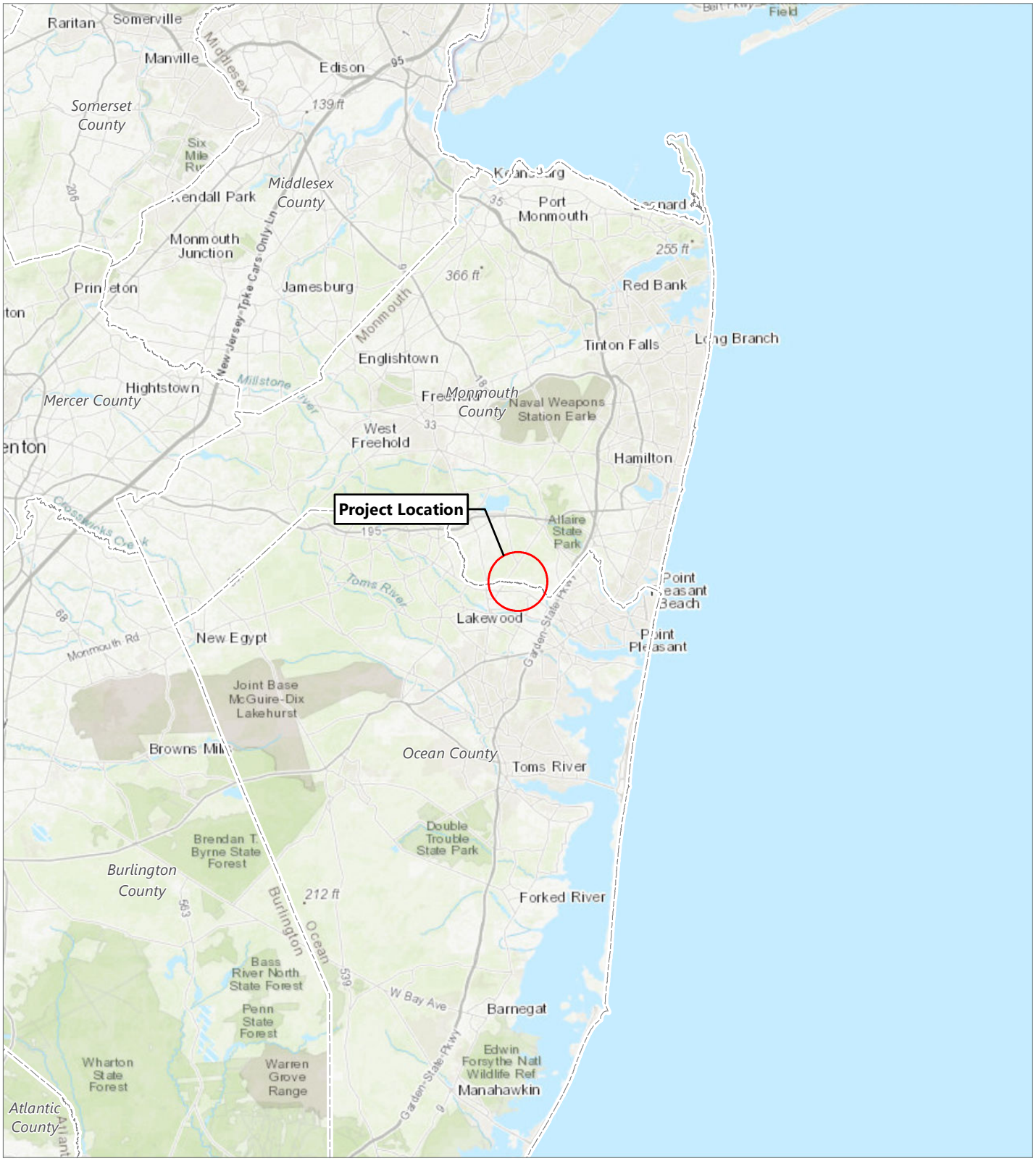
Appendix A

Figures

Figure 1

Project Location Map

Figure 1. Regional Project Location



Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

0 5 10

Miles

Prepared August 29, 2023

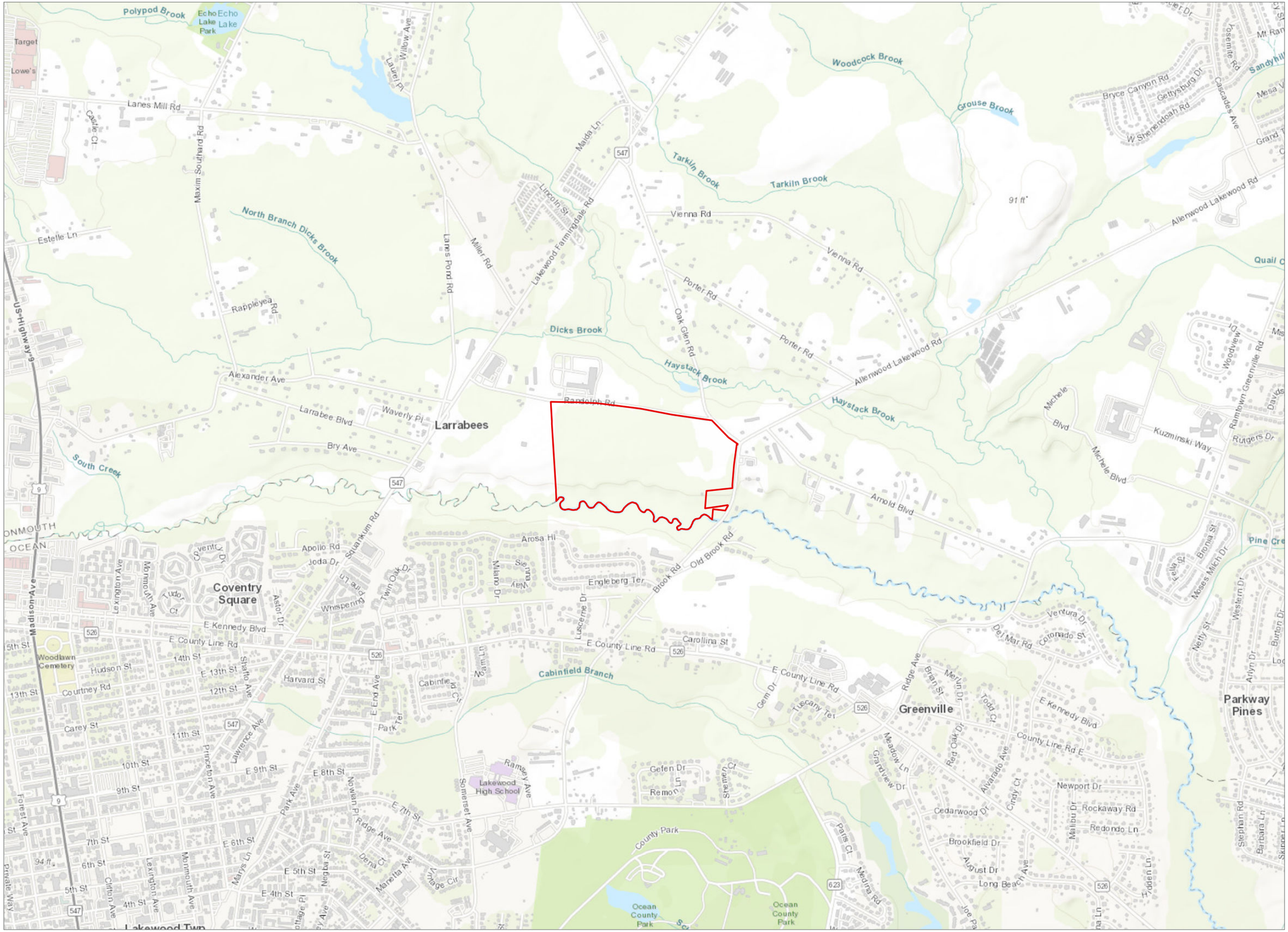
Basemap: Esri StreetMap North America, 2008

EDR

Figure 2

SSURGO Soils Map

Figure 2. Topographic Mapping



Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

Study Area

0 500 1,000 2,000

Feet

Prepared August 29, 2023

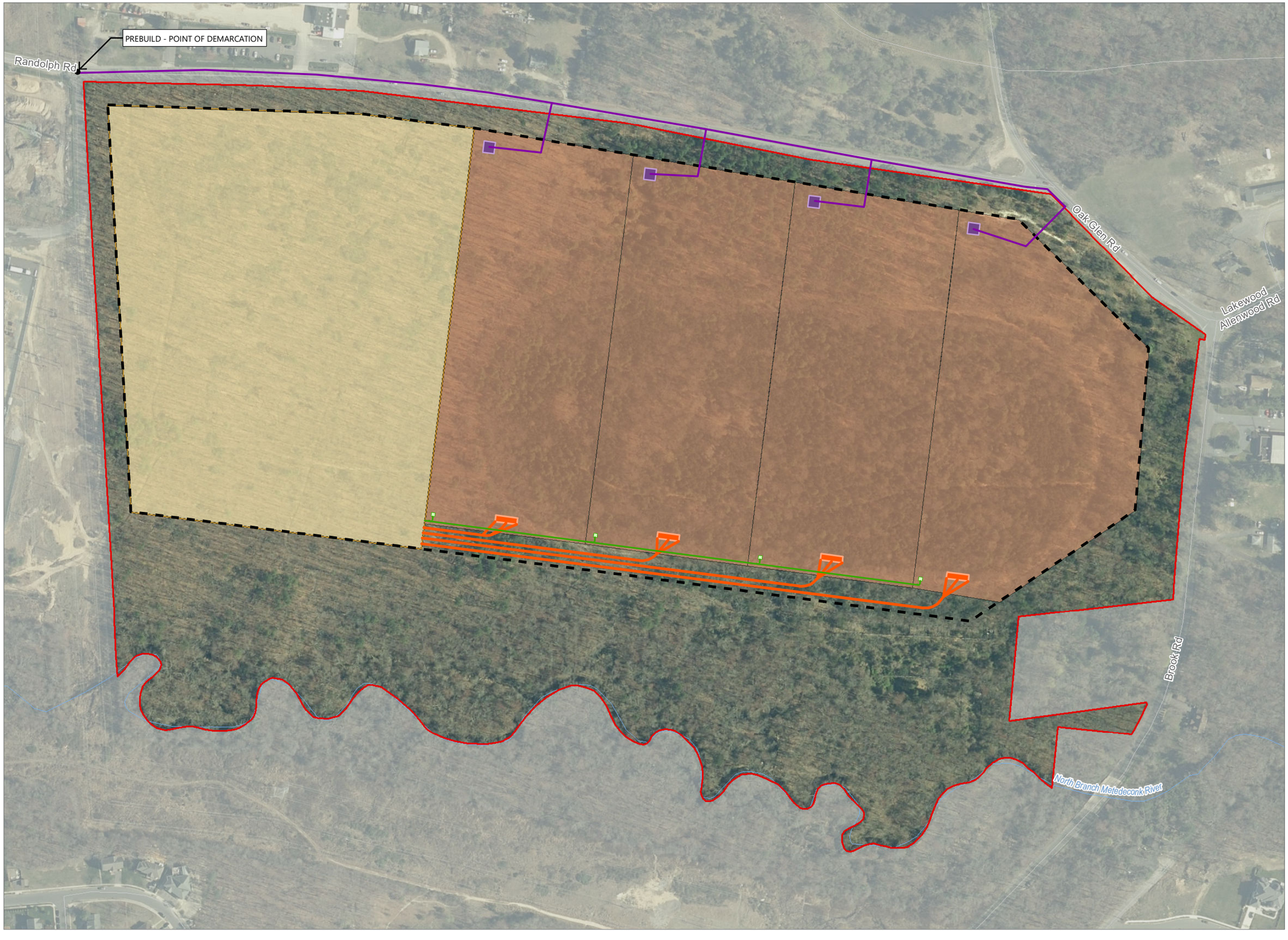
Basemap: Esri "World Topographic Map" map service

EDR

Figure 3

Proposed Development

Figure 3. Proposed Development



Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

- Indicative Transmission Conduits
- Secondary Fiber – Installed by MAOD
- AC & Primary Fiber – Installed by MAOD
- AC & Primary Fiber Interface
- Secondary Fiber Interface
- HVDC Cable Interface
- MAOD Switchyard Site
- Generator Area
- Indicative Preliminary Substation Boundary
- Study Area

0 100 200 400
Feet

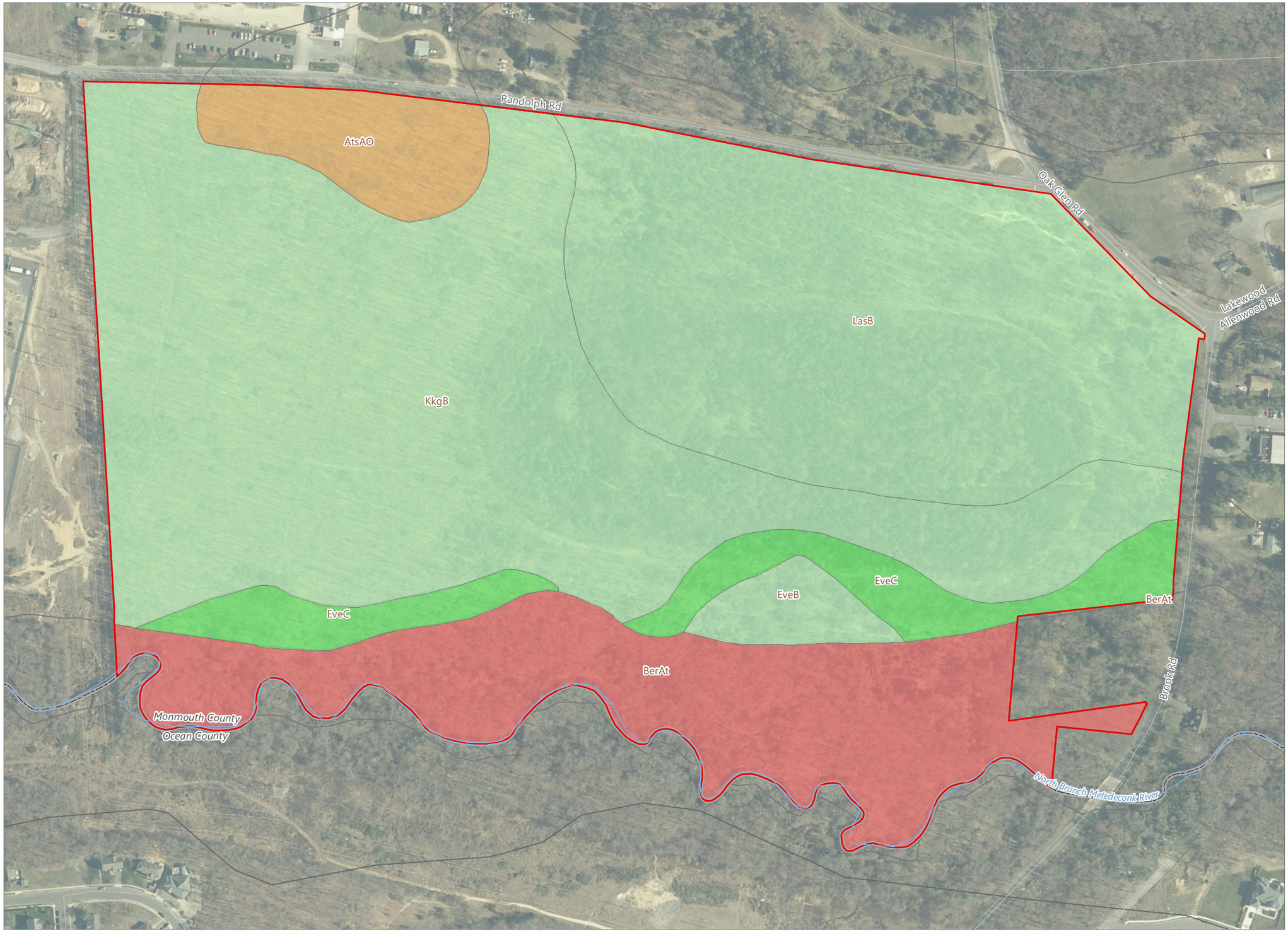
Prepared August 29, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

Figure 4

Watershed Management Areas and Hydrologic Units

Figure 4. SSURGO Soils Map



Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

Hydric Soil Rating
- Not Hydric (0%)
- Hydric (1 to 32%)
- Hydric (66% to 99%)
- Hydric (100%)
- Soils Boundary
- Study Area
- County Boundary

0 100 200 400
Feet

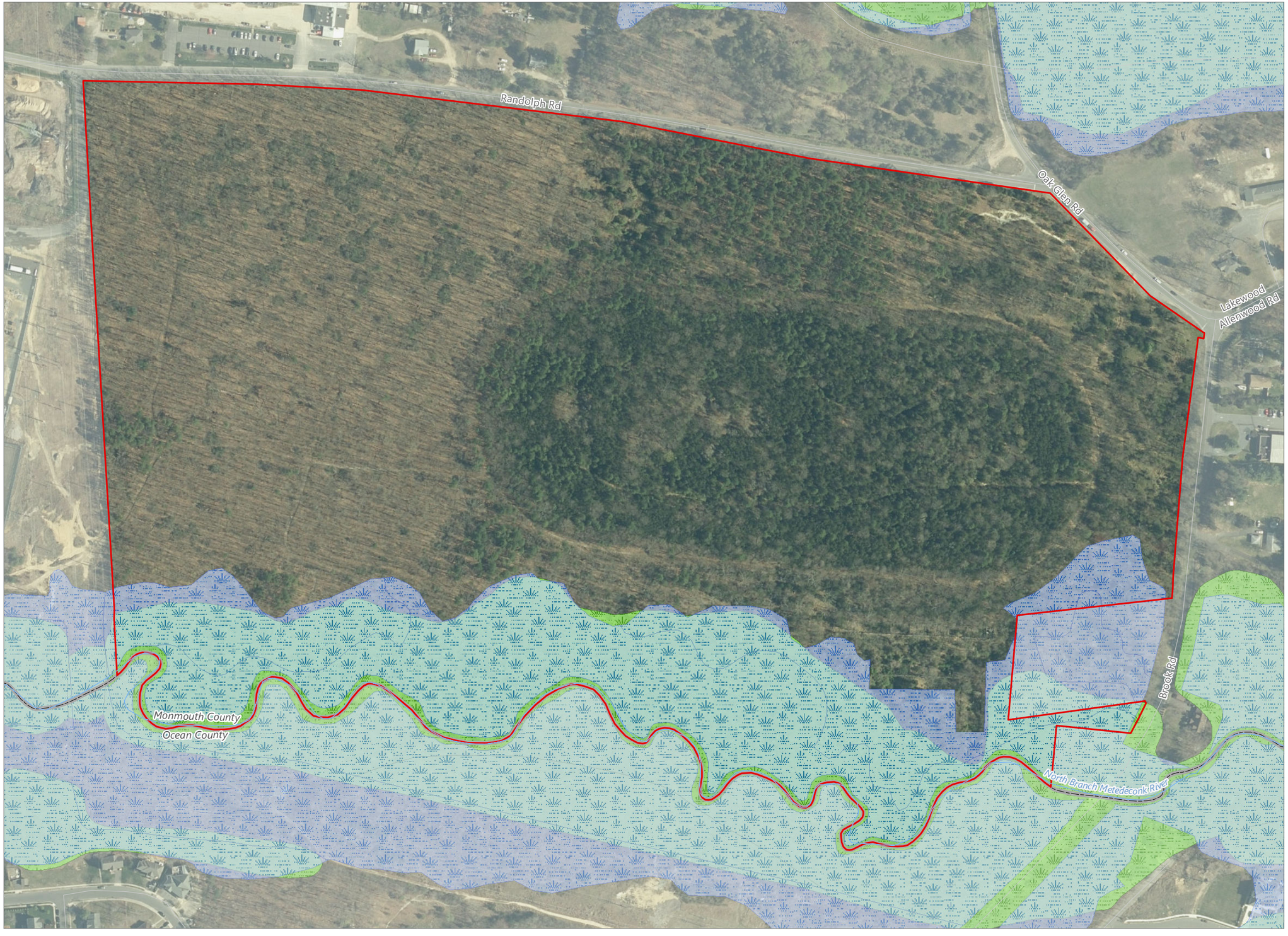
Prepared August 29, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

Figure 5

NJDEP/NWI-Mapped Wetlands and Streams

Figure 5. NJDEP/NWI-Mapped Wetlands and Streams



Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

NJDEP Wetlands
NWI Wetlands
Study Area
County Boundary

0 100 200 400
Feet

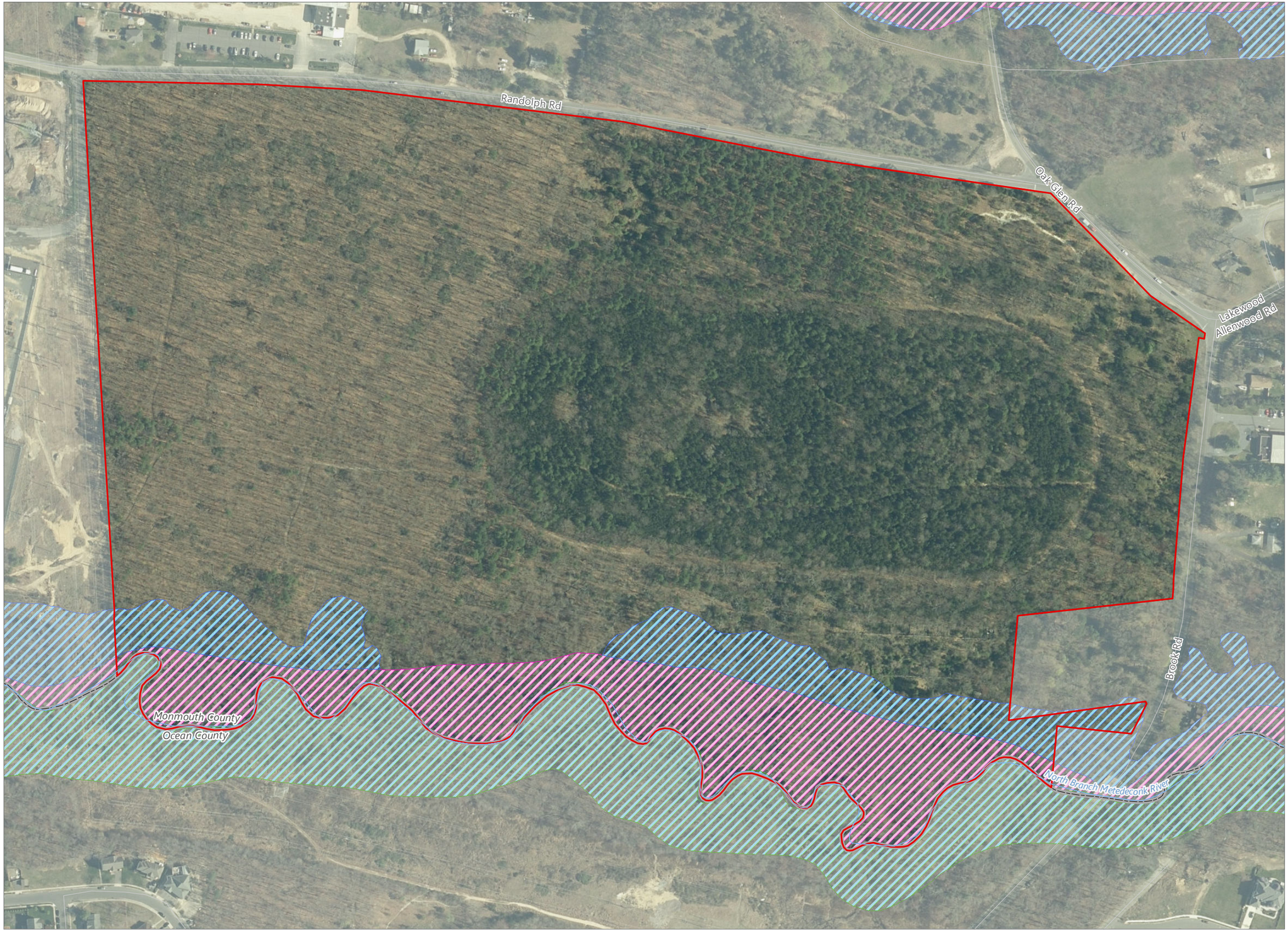
Prepared August 29, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

Figure 6

FEMA 1% Chance Annual Floodplain

Figure 6. FEMA 1% Change Annual Floodplain



Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

FEMA Flood Hazard Zones
- Zone A
- Zone AE, Floodway
- Zone AE
- Study Area
- County Boundary

0 100 200 400
Feet

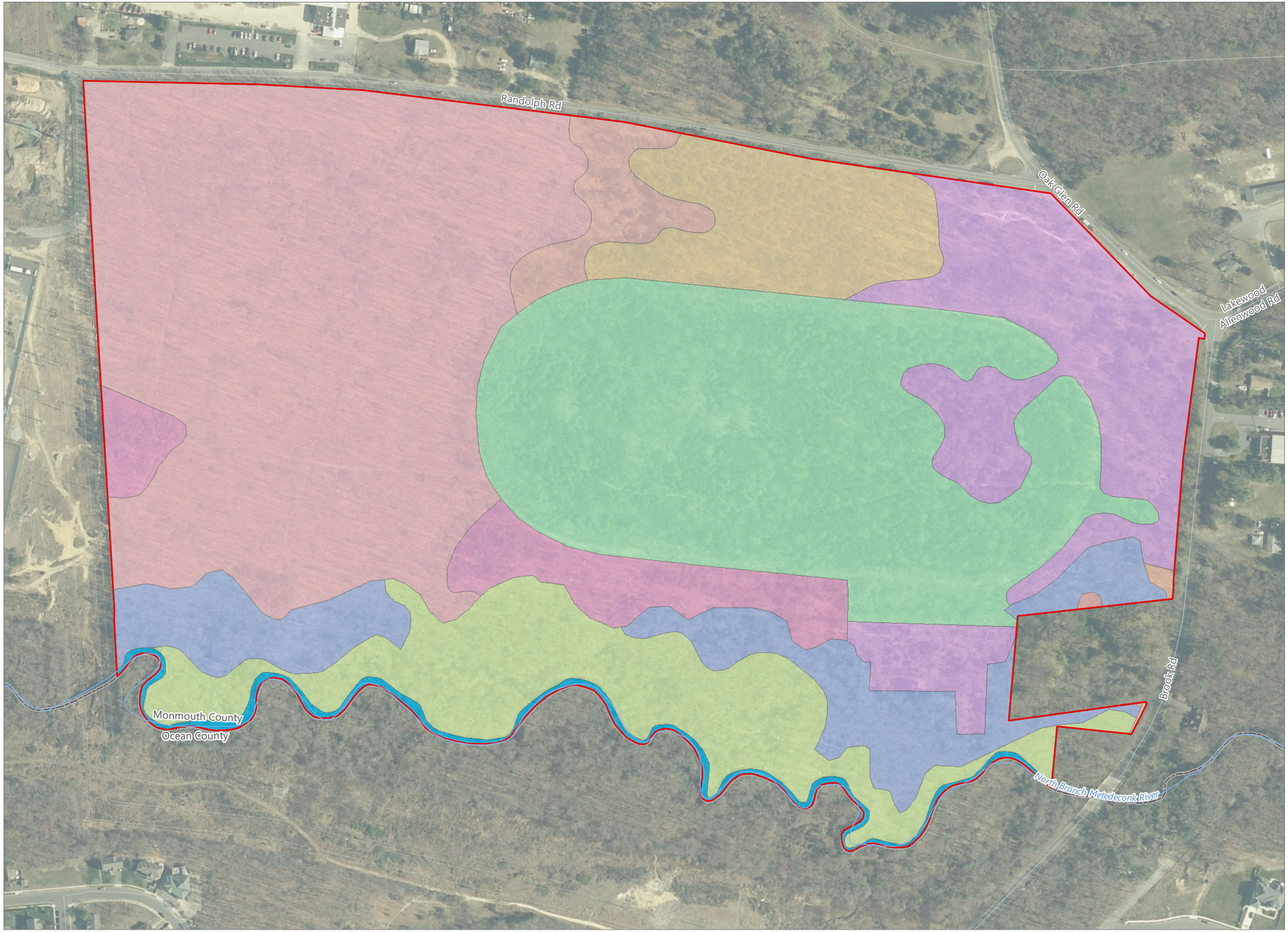
Prepared August 29, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

Figure 7

Land Use/Land Cover

Figure 6. Land Use/Land Cover



Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

Land Use/Land Cover

- Coniferous Brush/Shrubland
- Coniferous Forest (>50% Crown Closure)
- Deciduous Forest (10-50% Crown Closure)
- Deciduous Forest (>50% Crown Closure)
- Deciduous Wooded Wetlands
- Mixed Deciduous/Coniferous Brush/Shrubland
- Mixed Forest (>50% Coniferous with 10-50% Crown Closure)
- Mixed Forest (>50% Coniferous with >50% Crown Closure)
- Mixed Scrub/Shrub Wetlands (Deciduous Dom.)
- Mixed Wooded Wetlands (Deciduous Dom.)
- Residential, Rural, Single Unit
- Streams and Canals
- Study Area
- County Boundary

0 100 200 400

Feet

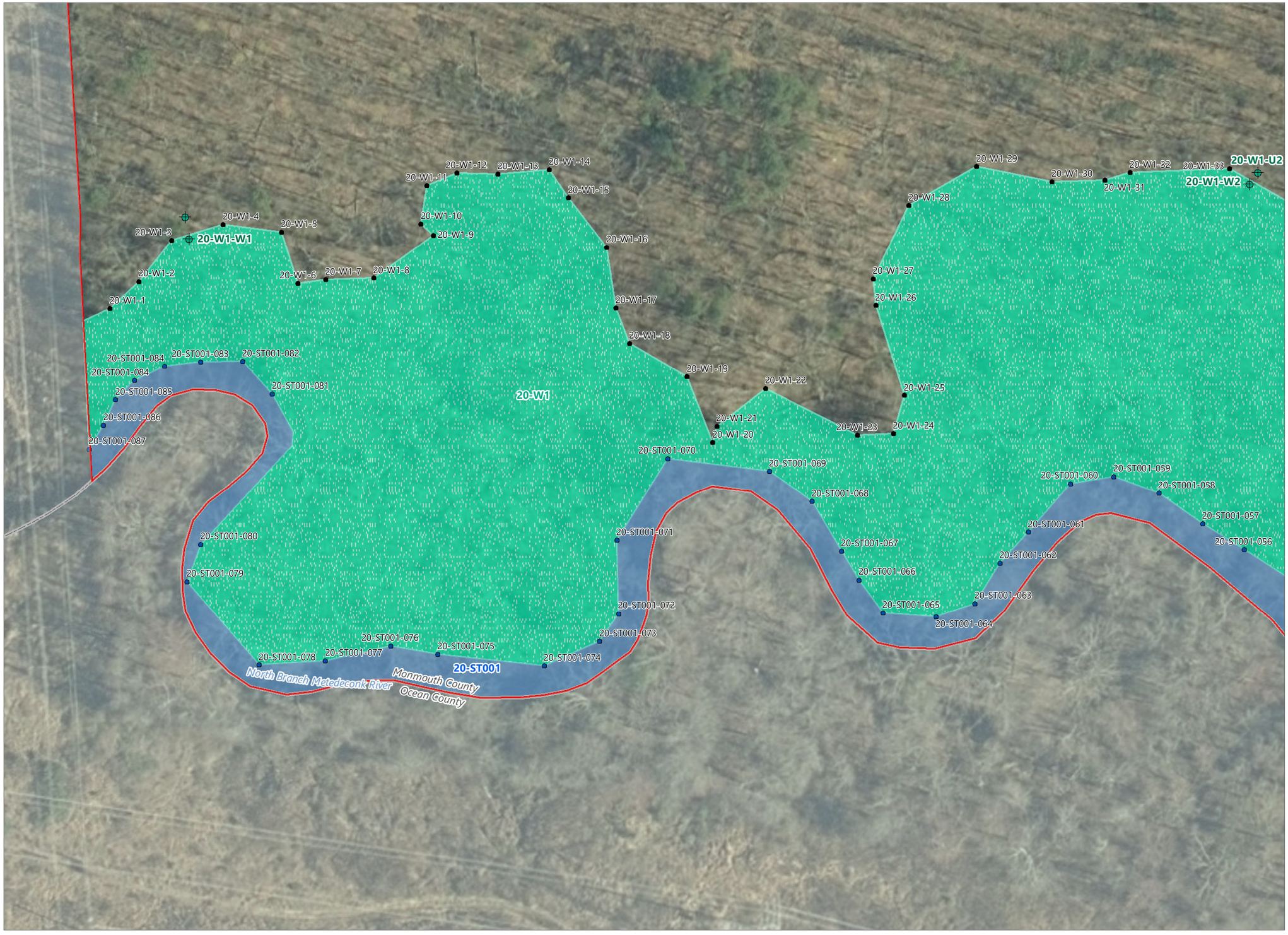
Prepared August 29, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

Figure 8

Delineated Wetlands and Streams

Figure 8. Delineated Wetlands and Streams

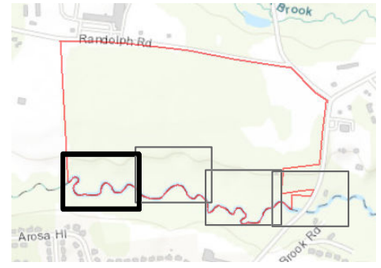


Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

- Stream Flag
- Wetland Datapoint
- Wetland Flag
- Delineated Stream
- Delineated Wetland
- Study Area
- County Boundary



0 25 50 100

Feet

Prepared August 29, 2023

Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

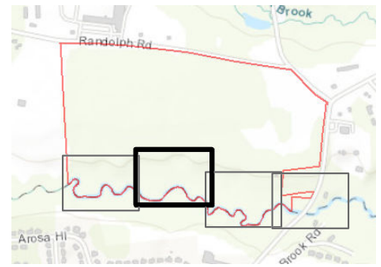
Figure 8. Delineated Wetlands and Streams

Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

- Stream Datapoint
- Stream Flag
- Wetland Datapoint
- Wetland Flag
- Delineated Stream
- Delineated Wetland
- Study Area
- County Boundary



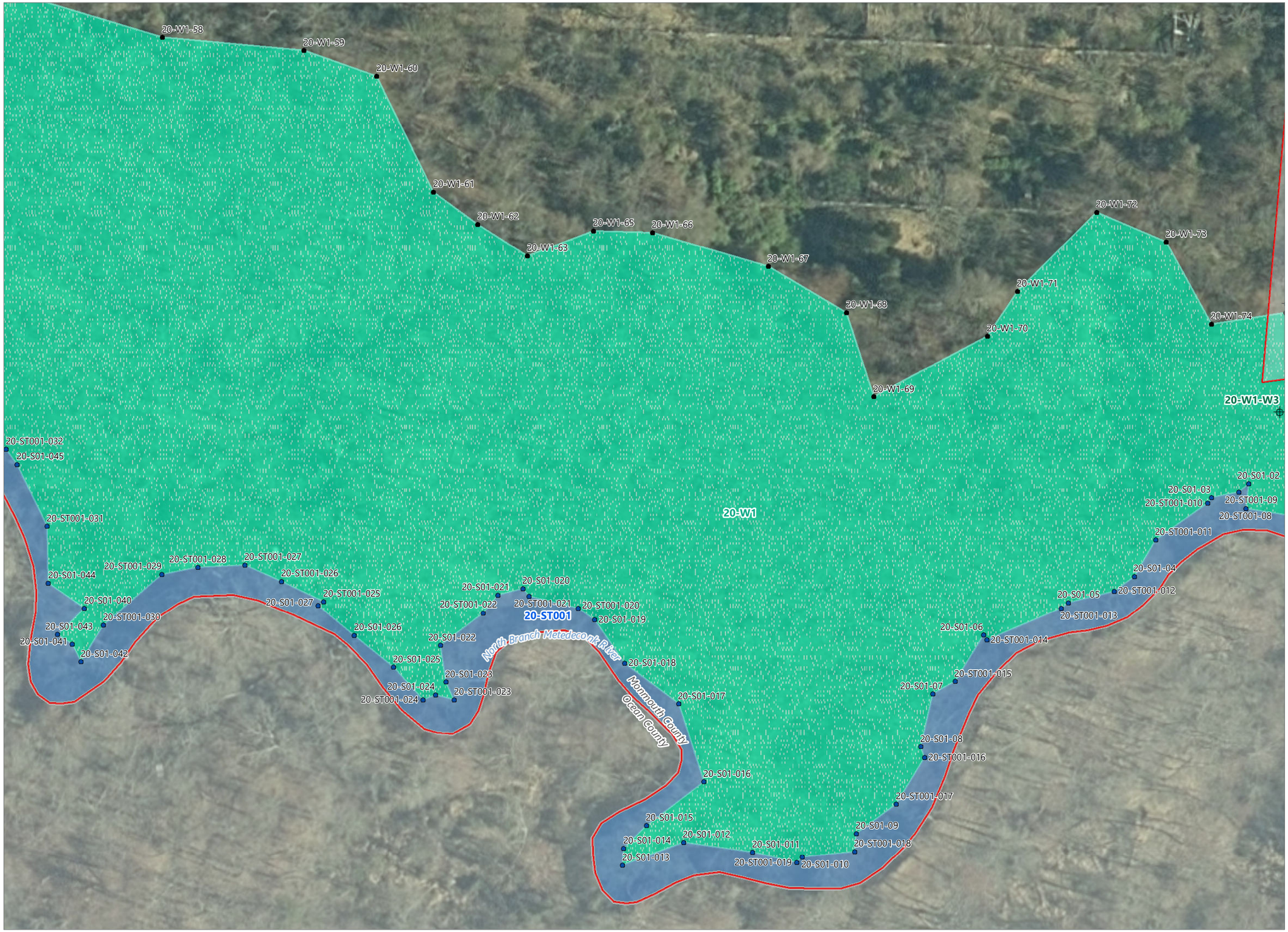
0 25 50 100

Feet

Prepared August 29, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

Figure 8. Delineated Wetlands and Streams

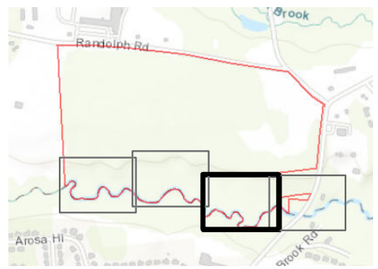


Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

- Stream Flag
- Wetland Datapoint
- Wetland Flag
- Delineated Stream
- Delineated Wetland
- Study Area
- County Boundary



0 25 50 100

Feet

Prepared August 29, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

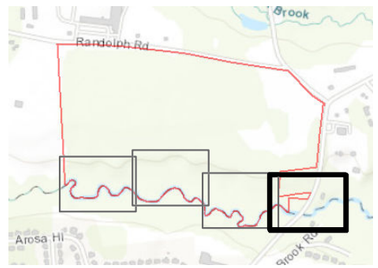
Figure 8. Delineated Wetlands and Streams

Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Wetland and Stream Delineation Report

- Stream Flag
- Wetland Datapoint
- Wetland Flag
- Delineated Stream
- Delineated Wetland
- Study Area
- County Boundary



0 25 50 100

Feet

Prepared August 29, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR

APPENDIX B

Routine Wetland Determination Data Sheets and Stream Inventory Forms

Data Form

Routine Onsite Determination Form

Field Investigators: Tom Connolly, James Kearney Date: 5/3/2023

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

Applicant/Owner: MAOD

Plant Community#/Name: 20-W1-U1

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

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

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

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	White oak (*Quercus alba*)	25	FACU	Tree
2.	Black locust (*Robinia pseudoacacia*)	5	UPL	Tree
3.	Coastal sweet-pepperbush (*Clethra alnifolia*)	5	FAC	Shrub
4.	Uknown	25	NI	Shrub

Percent of Dominant Species that are OBL, FACW, and/or FAC: 5

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Evesboro Subgroup:

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; 5-18" 2.5Y 4/1 90% with 10YR 2/1 10%

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: Tom Connolly, James Kearney Date: 5/3/2023

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

Applicant/Owner: MAOD

Plant Community#/Name: 20-W1-U2

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

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

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

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	White oak (*Quercus alba*)	25	FACU	Tree
2.	Black locust (*Robinia pseudoacacia*)	5	UPL	Tree
3.	Coastal sweet-pepperbush (*Clethra alnifolia*)	5	FAC	Shrub
4.	Uknown	25	NI	Shrub

Percent of Dominant Species that are OBL, FACW, and/or FAC: 5

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Evesboro Subgroup:

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; 5-18" 2.5Y 4/1 90% with 10YR 2/1 10%

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: Tom Connolly, James Kearney Date: 5/3/2023

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

Applicant/Owner: MAOD

Plant Community#/Name: 20-W1-U3

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

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

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

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Flowering dogwood (Cornus florida)	10	FACU	Tree
2.	Red maple (Acer rubrum)	10	FAC	Tree
3.	Eastern red cedar (Juniperus virginiana)	5	FACU	Tree
4.	Black cherry (Prunus serotina)	20	FACU	Shrub
5.	American holly (Ilex opaca)	5	FACU	Shrub
6.	Sensitive fern (Onoclea sensibilis)	5	FACW	Herb
7.	Poison ivy (Toxicodendron radicans)	5	FAC	Herb
8.	Multiflora rose (Rosa multiflora)	5	FACU	Herb
9.	Horsebrier (Smilax rotundifolia)	10	FAC	Woody Vine

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

Is the hydrophytic vegetation criterion met? Yes ☐ No ☒

Rationale:

SOILS

Series/Phase: Evesboro Subgroup:

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 3/2 95% with 2.5Y 6/6 5%; 19-24" 2.5Y 6/6.

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: Tom Connolly, James Kearney Date: 5/3/2023

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

Applicant/Owner: MAOD

Plant Community#/Name: 20-W1-W1

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

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

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

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Red maple (*Acer rubrum*)	35	FAC	Tree
2.	Highbush blueberry (Vaccinium corymbosum)	10	FACW	Shrub
3.	Coastal sweet-pepperbush (*Clethra alnifolia*)	10	FAC	Shrub
4.	Cinnamon fern (Osmunda cinnamomea)	15	FACW	Herb
5.	Japanese honeysuckle (Lonicera japonica)	5 / 5	FACU	Herb / Woody Vine
6.	Horsebrier (Smilax rotundifolia)	5	FAC	Woody Vine
7.	American wintergreen (Pyrola americana)	5	FAC	Herb

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Berryland sand Subgroup:

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: 0-2" 10YR 2/1 Loam; 3-12" 10YR 6/2 Clay Loam 90% with 10YR 6/8 10% Concentration in the Matrix. Soils could not be obtained past 12" due to a high water table.

Mottle Colors: 10YR 6/8

Other hydric soil indicators: Depleted Matrix (F3)

Is the hydric soil criterion met? Yes ☒ No ☐

Rationale:

HYDROLOGY

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

Is the soil saturated? Yes ☒ No ☐

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

List of other field evidence of surface inundation or soil saturation: High Water Table (A2), Water-Stained Leaves (B9)

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Tom Connolly, James Kearney Date: 5/3/2023

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

Applicant/Owner: MAOD

Plant Community#/Name: 20-W1-W2

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

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

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

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Red maple (*Acer rubrum*)	40	FAC	Tree
2.	Pin oak (Quercus palustris)	5	FACW	Tree
3.	Coastal sweet-pepperbush (*Clethra alnifolia*)	25	FAC	Shrub
4.	American holly (Ilex opaca)	5	FACU	Shrub
5.	Highbush blueberry (Vaccinium corymbosum)	20	FACW	Shrub
6.	Skunkcabbage (Symplocarpus foetidus)	10	OBL	Herb

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Berryland sand Subgroup:

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 muck.

Mottle Colors: N/A

Other hydric soil indicators: Histosol (A1)

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: High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), FAC-Neutral Test (D5)

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

Data Form

Routine Onsite Determination Form

Field Investigators: Tom Connolly, James Kearney Date: 5/3/2023

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

Applicant/Owner: MAOD

Plant Community#/Name: 20-W1-W2

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

Do normal environmental conditions exist at the plant community?

Yes ☒ No ☐ (If no, explain)

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

Yes☐ No☒ (If yes, explain)

VEGETATION

	Dominant Plant Species	Percent Cover	Indicator Status	Stratum
1.	Red maple (*Acer rubrum*)	60	FAC	Tree
2.	Eastern red-cedar (Juniperus virginiana)	5	FACU	Tree
3.	Royal fern (Osmunda regalis)	5	OBL	Herb
4.	Soft-rush (Juncus effusus)	5	OBL	Herb
5.	Horsebrier (Smilax rotundifolia)	5	FAC	Woody Vine

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

Is the hydrophytic vegetation criterion met? Yes ☒ No ☐

Rationale:

SOILS

Series/Phase: Berryland sand Subgroup:

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: 0-5" 10YR 2/1; 6-12" 10YR 4/1 75% with 10YR 6/8 25% concentrations in the matrix.

Mottle Colors: 10YR 6/8

Other hydric soil indicators: Depleted Matrix (F3)

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: 3"

List of other field evidence of surface inundation or soil saturation: Surface Water (A1), High Water Table (A2)

Is the wetland hydrology criterion met? Yes ☒ No ☐

Rationale:

21127 MAOD Stream 1

Project	21127 MAOD Wetland Delineation
ID	347511
Survey Date	05/23/2023
User	Andrew Leonardi
Stream ID:	20-ST001
Administrative 1	
Investigator(s)	TJCME
Latitude, Longitude	
Latitude	40.11107583
Longitude	-74.1848025
Current Precipitation	None
Precipitation in Past 48 Hours	None
Town/County/State	Town of Howell, Monmouth County, NJ
General Characteristics 1	
NYSDEC Mapped Stream	Yes
NYSDEC mapped Classification	
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	36-48
Stream Gradient	Gentle (0-5%)
Substrate	Cobble, Sand (Gritty feel), Silt/Clay (No grit)
OHWM width for stream reach (feet)	20
Geomorphology	
Continuity of channel bed and bank	
Sinuosity of channel along thalweg	3-Strong
In Channel Structures	1-Weak
Particle Size of Stream Substrate	1-Weak
Active/Relic Floodplain	2-Moderate
Depositional Bars or Benches	
Recent Alluvial Deposits	2-Moderate
Are Headcuts present	0-Absent
Grade Control	0-Absent

made with Wildnote

Natural Valley	0-Absent
Second or Greater Order Channel	3-Yes
Subtotal =	12

Hydrology	
Presence of Baseflow	2-Moderate
Iron Oxidizing Bacteria	0-Absent
Leaf Litter	1.5-Absent
Sediment on Plants or Debris	1-Moderate
Organic Debris Lines or Piles	0.5-Weak
Soil-based evidence of high water table	3-Yes
Subtotal =	8

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	27
Stream Determination	Intermittent (≥19)

Notes
Notes

APPENDIX C

Photo Documentation

Photo 1
Representative Photo of Wetland 1

Photo 2
Representative Photo of Wetland 1

Photo 3
Representative Photo of Wetland 1

Photo 4
Representative Photo of Wetland 1

Photo 5
Representative Upland Photo

Photo 6
Representative Upland Photo

Photo 7
Representative Photo of the North Branch Metedeconk River in the Study Area

Photo 8
Representative Photo of the North Branch Metedeconk River in the Study Area

Photo 9
Representative Photo of the North Branch Metedeconk River in the Study Area

Figure 3. Photo Location

Mid-Atlantic Offshore Development (MAOD)

Howell Township, Monmouth County, New Jersey

Letter of Interpretation (LOI)

Wetland Photo Location
Stream Photo Location
Study Area

0 100 200 400
Feet

Prepared November 27, 2023
Basemap: NJ Office of Information Technology - 2020 Natural Color Imagery Service

EDR