

**ENVIRONMENTAL IMPACT REPORT
FOR
PROPOSED WAREHOUSE
BLOCK 41, LOT 17
TOWNSHIP OF HOWELL
MONMOUTH COUNTY, NEW JERSEY**

Prepared for:

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I. EXECUTIVE SUMMARY

AAVRHW Property, LLC of West Nyack, New York is proposing a warehouse development project within a 19.9± acre site known as Block 41, Lot 17 in the Township of Howell, Monmouth County, New Jersey. The site is undeveloped and characterized by upland woodland, upland field, and wetlands. The site is bordered to the north by Victory Road and industrial development beyond; to the east and south by woodlands; and to the west by an overhead electrical line and Conrail railroad.

The project consists of the construction of one proposed warehouse. The proposed warehouse would occupy approximately 207,523 square feet (SF) with 25 loading docks. In addition, 109 parking spaces and 85 trailer spaces are proposed. The project will be accessed by two proposed driveways off Victory Road.

Stormwater from the developed portions of the site will be collected by a proposed stormwater management system. This system will consist of a series of inlets, manholes and subsurface piping that will convey stormwater to two infiltration basins and porous pavement proposed on the site. In addition, stormwater on the site will be bypassed to the existing drainage system along Victory Road via overland sheet flow. The stormwater management system has been designed to be in compliance with the requirements of the NJDEP's Stormwater Management Rules (N.J.A.C. 7:8) for stormwater quantity reductions, water quality, groundwater recharge, soil erosion and sediment control, and low impact development. For specific details regarding the proposed stormwater management system, refer to the Stormwater Management Report prepared for the project by Bohler of Warren, New Jersey (Bohler) dated February 2022.

The principal impacts of the proposed plan are those associated with a change in land use from upland woodlands, upland fields, and wetlands to warehouse development. Long-term impacts to the site include an increase in impervious surfaces and the loss of natural habitats. Temporary impacts will occur during the construction phase of the project and include soil loss, and increased noise and dust levels. All impacts will be minimized through appropriate mitigation procedures and best management practices.

This Environmental Impact Report (EIR) has been prepared by EcolSciences, Inc. of Rockaway, New Jersey in accordance with Township of Howell's Land Use Ordinance §188-6 (Environmental Impact Report) and is intended to support site plans prepared by Bohler (2022). The following chapters provide a project description, a discussion of alternatives, an inventory of existing environmental conditions in and around the site, an assessment of potential impacts associated with

the proposed development plan, a description of performance controls designed to mitigate adverse impacts, and a listing of required permits and approvals.

II. DESCRIPTION OF DEVELOPMENT PLAN

A. General Description

AAVRHW Property, LLC of West Nyack, New York, is proposing a warehouse development project within a 19.9± acre site known as Block 41, Lot 17 in the Township of Howell, Monmouth County, New Jersey. The site is undeveloped and characterized by upland woodland, upland field, and wetlands. The site is bordered to the north by Victory Road and industrial development beyond; to the east and south by woodlands; and to the west by an overhead electrical line and Conrail railroad.

The project consists of the construction of one proposed warehouse. The proposed warehouse would occupy approximately 207,523 square feet (SF) with 25 loading docks. In addition, 109 parking spaces and 85 trailer spaces are proposed. The project will be accessed by two proposed driveways off Victory Road.

B. Master Planning and Zoning

The site is located within the Special Economic Development (SED) Zone of the Township of Howell. Warehousing is a permitted use in the SED Zone. The proposed project meets the bulk requirements of the SED Zone. For details, please refer to the site plans as prepared by Bohler (2022). The surrounding area has been developed with industrial uses to the north and southeast, commercial uses to the southwest, and a solar facility further southeast.

According to the New Jersey State Development and Redevelopment Plan, the site is within the Environmentally Sensitive Planning Area (PA5). In the Environmentally Sensitive Planning Area, the State Plan's intention is to: protect environmental resources through the protection of large contiguous areas of land; accommodate growth in Centers; protect the character of existing stable communities; confine programmed sewers and public water services to Centers; and revitalize cities and towns (New Jersey State Planning Commission, 2001). The State Plan provides for the protection of critical natural resources and for the maintenance of the balance between ecological systems and beneficial growth (New Jersey State Planning Commission, 2001). The site is located approximately 2.3 miles off Interstate 195 in an area designated for economic development.

C. Sanitary Sewage

Sanitary sewage service for the proposed development will be provided through a proposed on-site septic system. Wastewater for the project will be conveyed through the Manasquan River Regional Sewage Authority collection system to the Ocean County Utilities Authority (OCUA) sewage treatment plant for treatment. It is estimated that the proposed development will generate 1,700 gallons per day (gpd) of wastewater (Bohler, 2022).

D. Potable Water Supply

Potable water for the proposed development will be obtained from New Jersey American Water by a connection to an existing line located at the intersection of Maxim Southard Road and Victory Road. A water main extension is proposed along Victory Road to reach the existing line located at this intersection. The estimated demand for potable water for the proposed development is 2,625 gpd (Bohler, 2022).

E. Stormwater Management Facilities

Stormwater from the developed portions of the site will be collected by a proposed stormwater management system. This system will consist of a series of inlets, manholes and subsurface piping that will convey stormwater to two infiltration basins and porous pavement proposed on the site. In addition, stormwater on the site will be bypassed to the existing drainage system along Victory Road via overland sheet flow. The stormwater management system has been designed to be in compliance with the requirements of the NJDEP's Stormwater Management Rules (N.J.A.C. 7:8) for stormwater quantity reductions, water quality, groundwater recharge, soil erosion and sediment control, and low impact development. For specific details regarding the proposed stormwater management system, refer to the Stormwater Management Report prepared for the project by Bohler of Warren, New Jersey dated February 2022.

F. Utilities Plan

All other utilities (electricity, gas, cable television, telephone, etc.) will be provided through connections to the existing lines located along Victory Road. All proposed utility connections will be located underground.

G. Solid Waste Plan

Solid waste generated by the proposed development will be collected and transported to an approved landfill for disposal. The Township of Howell, in conjunction with Monmouth County, has developed a recycling program that requires the recycling of aluminum cans, glass bottles and jars, plastic bottles, steel cans, newspaper, corrugated cardboard, and mixed paper.

III. PROJECT ALTERNATIVES

A. No-Build Alternative

The no-build alternative assumes no development of the site, which would then remain in its present undeveloped condition. This alternative does not satisfy the intended purpose for the site under the Township of Howell's Land Use Ordinance. The site is privately owned, and subject to applicable laws and regulations, and can be developed. The No-Project alternative would result in a loss in tax revenues and infrastructure improvements to the Township of Howell. Therefore, this alternative was rejected because it does not allow a reasonable use of the site and does not contribute to temporary and permanent jobs in the Township of Howell.

B. Alternative Uses

The project as designed is in conformance with the SED zoning district of the Township of Howell. Warehousing is a permitted use in the SED Zone. The proposed project meets the bulk requirements of the SED Zone. For details, please refer to the site plans as prepared by Bohler (2022).

The Township of Howell "Master Plan Reexamination Report" (November 18, 2019) indicates that a new goal of the Township is "to encourage new businesses and industries to locate along the Township's highway corridors, which will grow the economy of Howell, and provide new services and potential employment opportunities for residents" (Township of Howell, 2019).

The proposed project aligns with the Township goal noted above in providing for warehouse development on a site that is in close proximity to one of the Township's main highway corridors, Interstate 195, and will provide temporary and permanent jobs for Township residents. The site is situated within the SED Zone, and warehousing is a permitted use making the proposed project consistent with the Township's Land Use Ordinance. Various concepts were evaluated; the culmination of those evaluations is the proposed development, which is consistent with the Township's "Master Plan Reexamination Report" and the Township's Land Use Ordinance.

IV. INVENTORY OF EXISTING NATURAL RESOURCES

A thorough inventory of environmental conditions is a fundamental prerequisite to an understanding of a land tract's ecological and cultural history, current condition, and suitability for alternative future uses. The inventory of existing environmental conditions in this chapter is divided into systematic and logical subsections that treat each aspect of the site and vicinity in detail, and collectively define the constraints to future land use.

A. Geology

The portions of New Jersey that have similar sequences of rock types, geological structures, and geological history have been characterized as Physiographic Provinces - major areas of the state that have experienced specific geological histories and that have similar characteristics at present. From northwest to southeast across the State, the major physiographic provinces are: Appalachian Ridge and Valley, Highlands, Piedmont, and Coastal Plain. Each of these physiographic provinces has regional subdivisions, and each is also a continuation of larger regions in the northeastern United States (Widmer, 1964; Robichaud and Buell, 1973).

The Township of Howell is situated within the Coastal Plain Physiographic Province of New Jersey. The Coastal Plain Province consists of unconsolidated sedimentary formations from 90 to 10 million years old such as sands, clays, and marls. The Coastal Plain Province is divided into Inner and Outer sections. The Township of Howell is within the Outer Coastal Plain (Township of Howell, 2021a).

Based on review of Figure 4.4 in the Township of Howell's Environmental Resource Inventory (2021), the site is mapped as Upper Stream Terrace Deposits, which consists of yellow, reddish yellow, or yellowish brown sand and pebble gravel, minor silt and cobble gravel (Township of Howell, 2021a). According to Table 4.2 in the Township of Howell's Environmental Resource Inventory (2021), the Upper Stream Terrace Deposits form nonglacial stream terraces 20 to 50 feet above the modern floodplain. Topographic position and weathering characteristics are similar to Illinoian glaciofluvial deposits. Terraces grade to, or are overlapped by Cape May Formation, unit 2 (Township of Howell, 2021a).

Below the surficial deposits, the site mapped within the Lower Member of Kirkwood Formation based on review of Figure 4.1 in the Township of Howell's Environmental Resource Inventory (2021) (Township of Howell, 2021a). The Lower Member of Kirkwood Formation consists of quartz sand and clay. Specifically, the upper sand layer is comprised of very fine to fine grained quartz sand that is cross-bedded, laminated or massive. The sand is typically orange,

yellow, or gray, and overlies dark-gray or brown clay-silt. Beneath the upper sand layer is a lower clay silt layer. The contact of the upper sand and lower clay silt layers is the source of numerous springs that feed headwaters of tributaries (Township of Howell, 2021a).

B. Topography

The topography of a site or area is a description of the variation in elevation of the land surface with horizontal distance; topography is generally described by contour maps where points of equal elevation are connected by smooth contours. The surficial topography of a site or area reflects the underlying geology as altered by geomorphological processes; the surficial topography, in turn, directly influences the drainage patterns, watercourses, soils, and biological communities evolving on the particular site.

The site is relatively flat to gently sloping with elevations ranging from approximately 72 feet in the east corner of the site to 78 feet in the southwest portion of the site.

C. Soils

Soils are formed through the interaction of a variety of physical, chemical, and biological factors that include climate, parent material, topography, biological activities, and time. The degree to which any or all of these factors affect the local soil characteristics is quite variable, generally leading to the formation of a mosaic of soil types in any particular locality. The United States Department of Agriculture (USDA) has, through the Soil Conservation Service (SCS), mapped soils in detail; for New Jersey, the results of these soil surveys are issued for each county.

According to the Monmouth County Soil Survey (SCS, 1989, Sheets 51, 52, 56, and 57) as prepared by the USDA SCS (Figure 3), three soil units representing three soil series occur on the site: Atsion sand (At); Evesboro sand, 2 to 5 percent slopes (EvB); and Lakehurst sand, 0 to 2 percent slopes (LaA). Table 1 lists the soil characteristics, limitations, and suitabilities. A brief description of each soil per the SCS is provided as follows:

Atsion sand (At) – The Atsion series consists of poorly drained soils on upland flats. These soils formed in acid, sandy, Coastal Plain sediments. This is a nearly level, poorly drained soil in depressional areas and on broad flats. Permeability is moderately rapid or rapid in the subsoil and rapid in the substratum. The available water capacity is low. The apparent seasonal high water table is between the surface and a depth of 1 foot from November to June. Atsion soils are listed as a Group 2 New Jersey Hydric Soil. New Jersey Group 2 hydric soils display consistent hydric conditions in most places and require additional verification in the field to determine whether the soil at the site exhibits hydric conditions (Tiner, 1985). Atsion sand is the

**Table 1:
Soil Characteristics, Limitations, and Suitabilities**

Parameter	Atsion (At)	Evesboro (EvB)	Lakehurst (LaA)
Texture	Sand	Sand	Sand
Slope (%)	Nearly level	2 – 5	0 – 2
Depth to Bedrock (ft.)	>5.0	>5.0	>5.0
Depth to Seasonal High Water Table (ft.)	0 – 1	>6.0	1.5 – 3.5
Permeability (in./hr.)	0.2 – 20	6.0 – 20	6.0 – 20
Available Water Capacity (in./in. soil)	0.03 – 0.20	0.04 – 0.10	0.04 – 0.10
pH	3.6 – 5.0	3.6 – 5.0	3.6 – 5.0
Erosion Hazard - Water	Slight	Slight	Slight
Erosion Hazard - Wind	Slight	Severe	Severe
Limitations for Small Commercial Buildings	Severe: wetness	Slight	Moderate: wetness
Limitations for Local Roads and Streets	Severe: wetness	Slight	Moderate: wetness

Source: SCS, 1989

most common soil series in the Township of Howell, covering approximately 18 percent of the Township's land (Township of Howell, 2021a).

Evesboro Series (EvB) - The Evesboro series consists of excessively drained soils on uplands. These soils formed in acid, sandy, Coastal Plain sediments. Permeability is rapid in the subsoil and the substratum. The available water capacity is low. The depth to seasonal high water table is greater than 6 feet. Ruoff is very slow. Evesboro soils are not listed in a hydric soil group by the SCS (Tiner, 1985). The Evesboro series covers approximately 17 percent of the Township's land (Township of Howell, 2021a).

Lakehurst sand (LaA) – These soils are deep, nearly level and well drained or somewhat poorly drained. They occur on irregular-shaped divides and terraces and are in association with Atsion soils. Although the surface layer typically consists of about three inches of black sand, organic matter content is low. Permeability is rapid and available water capacity is low. The seasonal high water table is at a depth between 1.5 and 3.5 feet. Lakehurst soils are not listed in a hydric soil group by the SCS (Tiner, 1985). Lakehurst series covers approximately 7.4 percent of the Township's land (Township of Howell, 2021a).

Melick-Tully & Associates (February 18, 2022) excavated 36 test pits and 5 test borings in January and February 2022 within the site. The 36 test pits were completed to depths ranging from 5 to 17 feet below grade, and the 5 test borings were completed to depths ranging from 24 to 76 feet below grade. Topsoil was encountered in all of the explorations ranging from 4 to 15 inches thick. The topsoil was underlain by native soils which typically consisted of loamy sand, sandy loam, sandy clay loam, loam, and silt loam to maximum depths explored approximately 5 to 17 feet below grade in the test pits. The upper 4 feet of the majority of test pits consisted of sandy loam and loam (Melick-Tully & Associates, February 18, 2022).

D. Ground Water Quantity and Quality

Ground water is all water within the soil and subsurface strata that is not at the surface of the land. It includes water that is within the earth that supplies wells and springs. Ground water resources are often functionally linked to overlying land areas and surface water bodies; ground water is often recharged through "outcrop" areas at the land surface and ground water discharges ("seeps") may contribute to base flows of streams and rivers.

The ground water yields of any particular geological formation are a function of the porosity and permeability of the material comprising the formation (consolidated rock or unconsolidated deposits). Porosity describes the water-containing spaces between individual mineral grains, while permeability is the ease or difficulty with which water is transmitted through interconnecting spaces

in the formation. Formations lacking open spaces between the mineral grains have both low porosity and low permeability. Weathering and cracking of the parent bedrock can induce secondary porosity in the formation; water can accumulate and move through these fractures in the primary rock formation.

The Township of Howell obtains its water from six aquifer systems including Kirkwood-Cohansey, Englishtown, Mount Laurel-Wenonah, Potomac-Raritan-Magothy, upper Potomac-Raritan-Magothy and Vincentown. Based on review of Figure 6.2 in the Township of Howell's Environmental Resource Inventory (2021), the Kirkwood-Cohansey aquifer system outcrops in the majority of the Township. The Potomac-Raritan-Magothy aquifer does not outcrop in Howell Township but supplies a portion of the Township's public water (Township of Howell, 2021a).

The site is underlain by the Kirkwood-Cohansey aquifer system (Township of Howell, 2021a). The Kirkwood-Cohansey aquifer system consists of sand and gravel with lenses of silt and clay. Water is fresh, acidic, highly corrosive and is low in dissolved solids. Less corrosive water is common in confined aquifers. Iron and manganese levels are locally elevated. Salinity may be elevated in confined parts near coastal areas (G.C. Herman et al., 1998). Iron and manganese are naturally occurring minerals. As discussed in Section II.D. of this EIR, the proposed project will be on a public water supply and there will be no need to treat or manage the water from a regulatory or public health perspective. According to Table 6.1 in the Township of Howell's Environmental Resource Inventory (2021), the Kirkwood-Cohansey aquifer system is given an aquifer rank of B to A, where ground water wells provide a median yield from 250 gallons per minute to greater than 500 gallons per minute (Township of Howell, 2021a). The portion of the Kirkwood-Cohansey aquifer system on the site was given an aquifer rank of B (NJDEP, Last Updated August 4, 2021).

The estimated average annual subsurface recharge rates within the Township of Howell range from 0 to 17 inches per year (excluding surface water, wetlands, and hydric soils), and 0 to 14 inches per year during drought (Township of Howell, 2021a). Based on review of Figure 6.4 in the Township of Howell's Environmental Resource Inventory (2021), the western and northeastern portions of the site are within a recharge rate of 12 to 14 inches per year during drought. The remainder of the site is mapped within a recharge rate of 0 to 2 inches per year during drought (Township of Howell, 2021a).

The NJDEP has mapped well head protection areas for public community and non-community supply wells in New Jersey. Well head protection areas are modeled around a well and delineates the horizontal extent of groundwater captured by the well pumping at a rate over a certain

period of time (NJDEP, Last Updated August 4, 2021). Based on review of NJ-GeoWeb, there are no community or non-community well head protection areas mapped on or in the immediate vicinity of the site. The nearest well head protection area is a non-community well head protection area, which is located approximately 1,000 feet southwest of the site (NJDEP, Last Updated August 4, 2021). Based on review of Figure 6.5 in the Township of Howell's Environmental Resource Inventory (2021), the nearest public community well, the Winding Brook MHP System 1, is located approximately 1.1 miles south of the site (Township of Howell, 2021a).

Melick-Tully & Associates (February 18, 2022) excavated 36 test pits and 5 test borings in January and February 2022 within the site. The 36 test pits were completed to depths ranging from 5 to 17 feet below grade, and the 5 test borings were completed to depths ranging from 24 to 76 feet below grade. Of the 41 test pits and borings, 22 explorations encountered ground water at depths of approximately 6 feet to 15 feet below grade. Mottling and/or gray low chroma soils, which is indicative of seasonally saturated conditions were observed in most of the test pits at depths of 9 to 83 inches below grade (Melick-Tully & Associates, February 18, 2022). Melick-Tully & Associates believe the mottling and low chroma gray colored soil levels are representative of the estimated seasonal high ground water levels (Melick-Tully & Associates, February 18, 2022). Hydrologic Soil Group (HSG) "D" conditions were observed in 19 of the 36 test pits performed. Therefore, Melick-Tully & Associates believe portions of the site can be reclassified based on the explorations and laboratory testing performed to date, most extensively in the northern and eastern portions of the site, adjacent to the mapped wetlands (Melick-Tully & Associates, February 18, 2022).

E. Surface Water Quantity and Quality

Surface waters include lakes, rivers, ponds, and streams - water bodies at the surface of the land. These waters serve as valuable habitats for aquatic organisms; collect, store and distribute water from rainfall; and serve as important aesthetic and recreational features.

Overland runoff from the majority of the site is generally directed north towards the off-site Squankum Brook, which is mapped approximately 900 feet to the north of the site. Squankum Brook has been classified by the NJDEP as FW2-NT C1 (non-trout, category 1) water (NJDEP, 2020). Overland runoff from the southwestern and southeastern corners of the site is generally directed southeast towards the off-site unnamed tributary of Muddy Ford Brook, which is mapped approximately 1,900 feet to the southeast of the site. The NJDEP has classified Muddy Ford Brook and its unnamed tributaries as FW2-TM C1 (trout maintenance) waters (NJDEP, 2020). This corresponds to Table 7.3 in the Township of Howell's Environmental Resource Inventory (2021), Surface Water Quality Standards Classification (Township of Howell, 2021a).

The NJDEP (June 24, 2021) published a “DRAFT 2018/2020 New Jersey Integrated Water Quality Assessment Report (Integrated Report)”, which is intended to provide an effective tool for maintaining high quality waters and improving the quality of waters that do not attain their designated uses. The Integrated Report describes attainment of the designated uses specified in New Jersey's Surface Water Quality Standards (N.J.A.C. 7:9B), which include: aquatic life (general), aquatic life (trout), recreation, public water supply, fish consumption, and shellfish consumption (NJDEP, June 24, 2021). The Integrated Report includes management strategies, including Total Maximum Daily Loads (TMDLs), under development to achieve surface water quality standards and attain the designated uses of the waters (NJDEP, June 24, 2021). TMDLs represent the assimilative or carrying capacity of the receiving water taking into consideration point and nonpoint sources of pollution, natural background, and surface water withdrawals (NJDEP, June 24, 2021).

The NJDEP assesses each applicable designated use for all of the State’s 293 subwatersheds (assessment units), to determine whether each subwatershed is “fully supporting” the use, “not supporting” the use, or if insufficient information is available to assess the use. A subwatershed is “fully supporting” a designated use only if data for the minimum suite of parameters are available and there are no exceedances of the applicable criteria for each parameter in the suite. If data are available for only some of the minimum suite of parameters, the use is not assessed due to insufficient information. If any one parameter associated with a designated use exceeds the applicable criteria, then the subwatershed is “not supporting” for the designated use.

The majority of the site is within the Manasquan R (74d07m30s to Squankum gage) assessment unit (NJDEP, June 24, 2021). This assessment unit had “insufficient data” for Fish Consumption (NJDEP, June 24, 2021). This assessment unit was “not supporting” for Aquatic Life (General), Aquatic Life (Trout), Water Supply, and Primary Recreation for “non-attainment” of biological parameters, turbidity, total phosphorus, temperature, arsenic, and *Escherichia coli* (*E. coli*) (NJDEP, June 24, 2021). Based on review of Table 7.8 in the Township of Howell’s Environmental Resource Inventory (2021), the designated use for the Manasquan R (74d07m30s to Squankum gage) assessment unit is recreation. This assessment unit requires a 92 percent reduction in *E. coli* to restore recreational use (Township of Howell, 2021a).

The southern portion of the site is within the Muddy Ford Brook assessment unit (NJDEP, June 24, 2021). This assessment was “fully support” for Aquatic Life (General) and Aquatic Life (Trout) and had “insufficient data” for Fish Consumption (NJDEP, June 24, 2021). This assessment unit was “not supporting” of Water Supply and Primary Recreation for “non-attainment” of arsenic and *E. coli* (NJDEP, June 24, 2021). Based on review of Table 7.8 in the Township of Howell’s

Environmental Resource Inventory (2021), the designated use for the Muddy Ford Brook assessment unit is recreation. This assessment unit requires a 90 percent reduction in *E. coli* to restore recreational use (Township of Howell, 2021a).

By definition, FW-2 waters are suitable for public potable water supply after required treatment. This classification requires that waters be acceptable for primary contact recreation, industrial and agricultural use, and maintenance and migration of the established biota. The Non-Trout (NT) suffix indicates that the waters do not possess the properties suitable for the maintenance of trout species, i.e., high dissolved oxygen levels, relatively low summer temperatures, and low pollutant loadings. However, more tolerant fish species, particularly warm-water species, may flourish in such waters. The Trout Maintenance (TM) suffix indicates that the waters possess the properties suitable for the maintenance of trout species throughout the year. The Category One (C1) designation indicates waters that are protected from measurable changes in their water quality characteristics because of their clarity, color, scenic setting, aesthetic value, exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resource (NJDEP, 2020).

The two assessment units discussed above that encompass the site are located within the Monmouth (WMA 12) and Barnegat Bay (WMA13) Watershed Management Areas (WMA) (NJDEP, Last Updated August 4, 2021). The Monmouth Watershed Management Area encompasses the majority of the Township of Howell, with the southern portion of the Township located within the Barnegat Bay Watershed Management Area (Township of Howell, 2021a). Three watersheds of the WMA12 are located within the Township of Howell including the Manasquan River watershed, the Navesink River watershed, and the Shark River watershed. The majority of the site is located within the Manasquan River watershed, which is the largest watershed in the Township of Howell, draining approximately 63 percent of the Township's land (Township of Howell, 2021a). The southern portion of the site is located within the Metedeconk River watershed, which drains approximately 33 percent of the Township's land (Township of Howell, 2021a).

F. Vegetation

Vegetation is the plant life or the total plant cover that is found in a specific area, whether indigenous or introduced by humans. The Coastal Plain Physiographic Province of New Jersey, which includes the Inner and Outer Coastal Plains is characterized by broad areas of relatively uniform elevation, with only occasional topographic relief (Robichaud and Buell, 1973). This low degree of habitat diversity results in broad distributions of a limited number of major vegetative communities, rather unlike the fine-scale heterogeneity found in the more topographically diverse

physiographic provinces in northern New Jersey. The general types of terrestrial plant habitats described by Robichaud and Buell for the Outer Coastal Plain include salt water marshes, fresh water marshes, bogs, swamps and floodplains, not excessively drained upland flats, excessively drained upland flats, and sand dunes.

The Natural Heritage Program (NHP) of the NJDEP Office of Natural Lands Management identifies the state's most significant natural areas through a comprehensive inventory of rare plant and animal species and representative ecological communities (NHP, 2021). Through this program, Natural Heritage Priority Sites were identified which include critically important areas to conserve New Jersey's biological diversity, with particular emphasis on rare plant species and ecological communities. Based on review of Figure 8.3 in the Township of Howell's Environmental Resource Inventory (2021), there are no Natural Heritage Priority Sites on or in the immediate vicinity of the site. The nearest Natural Heritage Priority Site, the Manasquan Reservoir Woods, is located approximately 2.1 miles north of the site (Township of Howell, 2021a).

In addition to Natural Heritage Priority Sites, the NHP Database includes Natural Heritage Grid Maps, which provide a general portrayal of the geographic location of rare plant species and rare ecological communities for New Jersey, without providing sensitive detailed location information. Each grid that is mapped is classified into one of three categories: 'S', which indicates the location of the rare plant and/or ecological community is precisely known within the grid; 'M', which indicates the location of the rare plant and/or ecological community is only known to within 1.5 miles; or 'BOTH', which indicates the grid includes locations of rare plants and/or ecological communities that are precisely known and less precise occurrences are found (NJDEP, Last Updated August 4, 2021). Based on review of Figure 8.5 in the Township of Howell's Environmental Resource Inventory (2021), there are no Natural Heritage Grid Maps on or in the immediate vicinity of the site. The nearest Natural Heritage Grid Map, ID 15391, is located approximately 0.4 mile southeast of the site (Township of Howell, 2021a).

EcolSciences performed field investigations on the dates and times presented in Table 2 below to document vegetation communities on the site and record observed wildlife. The field conditions during the investigations are indicated Table 2 below:

**Table 2:
Field Investigations**

Date	Times	Temperature (°F)	Cloud Cover/ Precipitation	Relative Humidity (%)	Wind Speed (mph)
February 22, 2022	1:00 pm – 3:00 pm	54 - 58	Cloudy to Light Rain	87 - 93	9 - 14
February 23, 2022	1:30 pm – 4:00 pm	65 - 68	Cloudy to Fair	44 - 68	13 - 17

Based upon species composition, soils, and apparent hydrology noted during EcolSciences’ field investigations, three vegetative communities were identified within the site: upland woodland, upland field, and palustrine forested (PFO) wetland. Each community is briefly described below.

Upland Woodland – This community encompasses the majority portion of the site. The central and southwestern portions are more successional in nature. The southeastern portion is more dominated by evergreen species while the remaining portions is more deciduous in nature. Canopy vegetation includes sassafras, willow oak, black walnut, sweetgum, northern red oak, black oak, white oak, black cherry, blackgum, mulberry, pitch pine, red maple, tree-of-heaven. The woody understory commonly includes autumn olive, catalpa, hackberry, silver maple, eastern cottonwood, eastern red cedar, American holly, greenbrier, highbush blueberry, black huckleberry, wineberry, Japanese barberry, lowbush blueberry, dangleberry, and fox grape. The herbaceous layer commonly includes switchgrass, broom-sedge, microstegium, and striped wintergreen.

Upland Field – This community encompasses a narrow strip along the western site boundary. Ground cover is dominated by switchgrass with some broom-sedge.

Palustrine Forested (PFO) Wetland – This community is located in small pockets in the northeastern and southeastern portions of the site. Canopy vegetation includes pitch pine, red maple, silver maple, blackgum, swamp white oak, sweetgum, and willow oak. The woody understory commonly includes highbush blueberry, grey birch, sweet pepperbush, dangleberry, Japanese honeysuckle, greenbrier, and American holly. Ground covers includes stout woodreed, microstegium, and soft rush.

G. Wildlife

The utility of an area as wildlife habitat depends on many factors. All wildlife species require food, water, cover, and space. The relative abundance or lack of these resources in relation to each species' particular requirements will, in part, determine the species composition and distribution of a particular area. In addition, the types of vegetative communities present, the size, shape, and

complexity of the habitat(s), and the surrounding land uses will further interact to determine the success of various wildlife species at the location being considered. Some wildlife species have demonstrated great adaptability and tolerance to the human presence; others are less able to tolerate such activities and are displaced to more suitable habitats, if such are available and accessible.

Starting in July 2002, the NHP of the NJDEP Office of Natural Lands Management adopted use of the Landscape Project to supplement threatened and endangered species data requests. The Landscape Project was developed by the NJDEP, Division of Fish & Wildlife, Endangered & Nongame Species Program (ENSP). It is a wildlife habitat-mapping program that is used to identify and map critical habitats for endangered, threatened, and special concern species. This approach takes documented records of threatened and endangered wildlife and, based on a species-specific model or “occurrence area”, maps areas of suitable habitat contiguous to the record as critical wildlife habitat. Each critical habitat patch appears as a shaded color from light to dark (5 Ranks) indicating its relative priority ranking. Rank 1 is the lowest priority ranking, while Rank 5 is the highest priority ranking. Rank 1 meets the minimum area requirement, but no data exists for the presence of priority species (New Jersey Division of Fish and Wildlife, 2017). This is the NJDEP’s lowest priority ranking and is defined as areas meeting the minimum size requirements but with no documented sightings of threatened or endangered species. Rank 2 contains records for priority species, which are species of special concern. Ranks 3, 4, and 5 indicate that the identified land cover type has been identified as providing habitat for State threatened (Rank 3), State endangered (Rank 4), or Federally threatened or endangered (Rank 5) species.

According to the NJDEP’s Landscape Project (Version 3.3), the site is mapped as Rank 3 habitats (Figure 4). The Rank 3 habitats contain occurrences of the State-threatened Pine Barrens treefrog (*Hyla andersonii*). One of the Rank 3 habitats also includes a foraging occurrence of the special concern great blue heron (*Ardea herodias*) (Figure 4). This corresponds to the response received from the Natural Heritage Program (NHP) on February 9, 2022 regarding habitat and documented occurrences of rare wildlife species on the site (NHP File No. 22-4007422-24014). The NHP response letter is provided in Attachment B.

Pine Barrens treefrogs generally have been reported to breed in seepage bogs, cranberry bogs, small and ephemeral ponds, streamlets, Atlantic white cedar (*Chamaecyparis thyoides*) swamps, and pitch pine (*Pinus rigida*) lowlands (Means and Longden 1976; Hulmes et al 1979; Cely and Sorrow Jr. 1986 as cited in NJDEP, January 2013). Because breeding commences later in the season (May-June), Pine Barrens treefrogs typically make use of sites in which ponded hydrologic conditions persist through August thereby allowing time for metamorphosis of larva (NJDEP, January 2013).

The NJDEP's Landscape Project (Version 3.3) has mapped an off-site potential vernal pool approximately 128 feet to the south of the site, with associated vernal habitat mapped on-site (Figure 4). Vernal habitats are typically ephemeral wetlands that are seasonally ponded and which provide breeding and other habitats for various species of reptiles and amphibians. The majority of the site is mapped within a vernal habitat area, which are areas that contain pools that have been field-verified by the NJDEP and have been determined to meet both the physical and biological characteristics of a vernal habitat in accordance with N.J.A.C. 7:7A-1.4 (NJDEP, Last Updated August 4, 2021). All areas mapped as "vernal habitat areas" are derived from a point location estimated to be the center of an individual vernal pool and include all areas within 300 meters of the point as shown on Figure 4. The 300-meter area buffer is for planning purposes and represents an area where the vernal species may disperse post-breeding. The 300-meter buffer is not a NJDEP regulated area and its presence does not preclude development activities.

A Letter of Interpretation (LOI) Line Verification was issued by the NJDEP on September 12, 2018, which verified the limits of wetland and transition areas on the site (File No. 1319-18-0011.1) (Attachment B). According to this LOI, two isolated wetlands are located in the north portion of the site along Victory Road (WA- and WB-wetlands). A third isolated wetland is located in the southeast portion of the site and continues off-site to the southeast (WC-wetland). In addition, two adjacent wetlands are located to the east and south of the site (WD- and WE-wetlands, respectively). The WA- and WD-wetlands were classified as intermediate resource value with a 50-foot transition area. The WB-, WC- and WE-wetlands were classified as exceptional resource value with a 150-foot transition area (File No. 1319-18-0011.1). The exceptional resource value wetlands on and adjacent to the site were classified as such due to the documented suitable habitat for Pine Barrens treefrog.

A Pine Barrens treefrog habitat assessment was conducted for the site in April, May and June of 2019 by Eastern States Environmental Associates, Inc. of Kunkletown, Pennsylvania (Eastern States, June 21, 2019) to determine if the wetlands classified as exceptional resource value on and adjacent to the site offer suitable habitat for Pine Barrens treefrog. Eastern States concluded that the isolated wetland in the southeast portion of the site (WC-wetland), and the adjacent wetland to the south of the site (WE-wetland) could be used by Pine Barrens treefrog due to the size and characteristics of the wetlands (Eastern States, June 21, 2019). However, the isolated wetland in the north portion of the site initially classified as exceptional resource value (WB-wetland) does not possess any vegetational, structural or hydrological characteristics preferred by the Pine Barrens treefrog nor any characteristics compatible with vernal habitat (Eastern States, June 21, 2019). Based on the results of the Pine Barrens treefrog habitat assessment (Eastern States, June 21, 2019), the LOI Line Verification was revised for the site on November 26, 2019 to reflect that the WB-wetland

initially classified as exceptional resource value with a 150-foot transition area, is reclassified as intermediate resource value with a 50-foot transition area. The initial and revised LOI for the site are provided in Attachment B.

During EcolSciences' field investigations in February 2022, the following species were observed by sight, call, tracks, or by other signs: white-tailed deer, eastern coyote, green frog, Canada goose (fly over), wild turkey, black vulture (fly over), turkey vulture (fly over), killdeer, ring-billed gull (fly over), mourning dove, red-bellied woodpecker, downy woodpecker, common raven, Carolina chickadee, tufted titmouse, white-breasted nuthatch, eastern bluebird, northern mockingbird, European starling, white-throated sparrow, dark-eyed junco, northern cardinal, and house finch.

H. Wetlands

Wetlands are lands where water saturation is the dominant factor determining the nature of soil development and the types of plants and animal communities living in the soil and on its surface. Wetlands are transitional areas between terrestrial and aquatic systems, and are unique biological habitats of socioeconomic value. Wetlands moderate extremes in water flow, aid in the natural purification of water, and may be areas of groundwater recharge. According to regulations promulgated by the United States Army Corps of Engineers (COE) and the United States Environmental Protection Agency (EPA) (33 CFR Section 323.2 and 40 CFR Section 230.2, respectively) and pursuant to the New Jersey Freshwater Wetlands Protection Act (1987), wetlands are those areas that are inundated or saturated with surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

As discussed previously, the limits of freshwater wetlands were delineated on the site and verified by the NJDEP through an issuance of a LOI Line Verification (File No. 1319-18-0011.1) on September 12, 2018 (Attachment B). The LOI classified the WB-, WC- and WE-wetlands as exceptional resource value and the WA- and WD-wetlands as intermediate resource value. Exceptional resource value wetlands have a standard 150-foot transition area and intermediate resource value wetlands have a standard 50-foot transition area. The LOI also stated that “there are wetlands on the site that potentially meet the definition of ‘vernal habitat’ as found at N.J.A.C. 7:7A-1.4.” Ms. Taryn Pittfield of the NJDEP sent an email on October 15, 2018 which identified the WA-, WB-, and WC-wetlands as isolated (Attachment B). The LOI was revised on November 26, 2019 to reclassify the WB-wetland from exceptional to intermediate resource value (Attachment B). The on-site wetlands and transition areas are depicted on the site plans prepared by Bohler (2022).

I. Aquatic Biota

Aquatic biota comprise various macroinvertebrates including insects (largely immature forms), worms, mollusks (snails, clams), and crustaceans (scuds, shrimp, water fleas etc.) generally found within freshwater and estuarine environments. Macroinvertebrate species play an integral role in the aquatic food web and their presence and relative abundance is governed by environmental conditions and by the pollution tolerance of the respective species. The overall community thus is holistically reflective of conditions in its environment and can be used as an indicator of the water or habitat quality of a waterbody (NJDEP, December 2012). The NJDEP (December 2012) conducts biological monitoring studies of the state's waterbodies and ranks water quality for these sites using the Rapid Bioassessment Protocol II method devised by the EPA. The Ambient Biomonitoring Network (AMNET) is one of the major ongoing monitoring programs (NJDEP, December 2012).

Based upon NJ-GeoWeb, the nearest AMNET station (AN0497) along Squankum Brook is approximately 1.9 miles downstream from the site (NJDEP, Last Updated August 4, 2021). During the latest round of sampling (fifth round), this station was found to have a good Coastal Plain Macroinvertebrate Index (CPMI) with optimal habitat analysis (NJDEP, Last Updated August 4, 2021). An earlier study was also performed in 2010-2011 and comparisons were made between the most recent sampling (NJDEP, December 2012). For this sampling station, the CPMI remained at good between these two sampling periods, but the habitat analysis improved from suboptimal to optimal. This corresponds with Table 7.5 in the Township of Howell's Environmental Resource Inventory (2021), Macroinvertebrate and Habitat Scores (Township of Howell, 2021a).

Based upon NJ-GeoWeb, the nearest AMNET station (AN0505) along Muddy Ford Brook is approximately 2.9 miles downstream from the site (NJDEP, Last Updated August 4, 2021). During the latest round of sampling (fifth round), this station was found to have an excellent CPMI with optimal habitat analysis (NJDEP, Last Updated August 4, 2021). An earlier study was also performed in 2010-2011 and comparisons were made between the most recent sampling (NJDEP, December 2012). For this sampling station, the CPMI remained excellent between these two sampling periods, but the habitat analysis improved from suboptimal to optimal. This corresponds with Table 7.5 in the Township of Howell's Environmental Resource Inventory (2021), Macroinvertebrate and Habitat Scores (Township of Howell, 2021a).

The CPMI is used for low gradient streams and the result of this index is considered reflective of the water and/or habitat quality the monitoring site. The CPMI was developed using guidelines outlined in the Rapid Bioassessment Protocol II (NJDEP, December 2012). An excellent CPMI result indicates that the monitoring site has minimal changes in structure of biological community and

minimal changes in ecosystem function. Virtually all native taxa are maintained with some changes to biomass and/or abundance; ecosystem functions are fully maintained within the range of natural variability (NJDEP, December 2012). A good CPMI result indicates that the monitoring site has some evident changes in structure of the biotic community and minimal changes in ecosystem function. Some changes in structure due to loss of some rare native taxa; shifts in relative abundance of taxa but sensitive-ubiquitous taxa are common and abundant; ecosystem functions are fully maintained (NJDEP, December 2012). The four categories of the habitat analysis include optimal, suboptimal, marginal, and poor. A variety of habitat parameters are considered when scoring the monitoring site's habitat analysis including epifaunal substrate/available cover, pool substrate characterization, pool variability, sediment deposition, channel flow status, channel alteration, channel sinuosity, bank stability, bank vegetation protection, and riparian vegetative zone width (NJDEP, December 2012).

The NJDEP does not provide a monitoring station for "Fish Index of Biotic Integrity" anywhere downstream of the site (NJDEP, Last Updated August 4, 2021). As discussed in Section IV.E. of this EIR, overland runoff from the majority of the site is generally directed north towards the off-site Squankum Brook, which is mapped approximately 900 feet to the north of the site. Squankum Brook has been classified by the NJDEP as FW2-NT C1 water (NJDEP, 2020). Overland runoff from the southwestern and southeastern corners of the site is generally directed southeast towards the off-site unnamed tributary of Muddy Ford Brook, which is mapped approximately 1,900 feet to the southeast of the site. The NJDEP has classified Muddy Ford Brook and its unnamed tributaries as FW2-TM C1 waters (NJDEP, 2020). The Non-Trout (NT) suffix indicates that the waters do not possess the properties suitable for the maintenance of trout species, i.e., high dissolved oxygen levels, relatively low summer temperatures, and low pollutant loadings (NJDEP, 2020). However, more tolerant fish species, particularly warm-water species, may flourish in such waters. The Trout Maintenance (TM) suffix indicates that the waters possess the properties suitable for the maintenance of trout species throughout the year (NJDEP, 2020).

There are no streams or other open water habitats on the site that could offer potential suitable habitat for aquatic biota.

J. Floodways and Floodplains

The area inundated by the floodwaters of a river or stream is termed the floodplain. Within the floodplain can be found several subdivisions: the channel, where normal, non-floodplain flow is confined; the floodway, or terrestrial areas on the margins of the channel that show permanent terracing effects of repeated flooding; and the flood fringe, or areas landward of the floodway that

may be inundated during more severe (and less frequent) storms. Taken together, these areas constitute the flood hazard area around a river or stream.

Overland runoff from the majority of the site is generally directed north towards the off-site Squankum Brook, which is mapped approximately 900 feet to the north of the site (NJDEP, Last Updated August 4, 2021). Overland runoff from the southwestern and southeastern corners of the site is generally directed southeast towards the off-site unnamed tributary of Muddy Ford Brook, which is mapped approximately 1,900 feet to the southeast of the site (NJDEP, Last Updated August 4, 2021). According to FEMA mapping (Community Panel No. 34025C0320F, effective September 25, 2009), the site is mapped within areas of minimal flood hazard (Zone X).

In addition to regulating activities within floodways and floodplains, the Flood Hazard Area (FHA) Control Act Rules (N.J.A.C. 7:13 et seq.) also protect a riparian zone adjacent to all regulated waters. The riparian zones are 50, 150 or 300 feet in width along each side of regulated surface waters throughout the State. The riparian zone width depends on the environmental resources being protected, with the most protective 300-ft riparian zone applicable to waters designated as Category 1 (C1) and certain upstream tributaries. Waters supporting trout, or habitats of threatened or endangered species critically dependent on regulated waters for survival receive a 150-ft riparian zone. Regulated waters not identified above would have a 50-foot riparian zone.

There are no FHA regulated waters on or within 300 feet of the site.

K. Air Quality

The Federal and State environmental regulatory agencies have established permissible concentrations, termed the National Ambient Air Quality Standards (NAAQS), for six principal pollutants including carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution, and sulfur dioxide. These standards have been shown to reduce to an acceptable level the risk of health effects to vulnerable human populations, primarily the young, the elderly, and those with respiratory ailments. Primary standards define air quality levels intended to protect the public health including “sensitive” populations such as asthmatics, children, and the elderly. The secondary standards define levels of air quality intended to protect the public welfare including protection against decreased visibility and damage to animals, crops, vegetation, and buildings (EPA, 2021).

The NJDEP annual air quality reports summarize the air quality monitoring data for that particular year in New Jersey. The State of New Jersey has been monitoring air quality since 1965. The most recent NJDEP Air Quality Summary Report available is for the year 2020. Based on the

2020 annual air quality report, the entire state of New Jersey is in non-attainment for the ozone NAAQS. New Jersey's northern non-attainment area is classified as "moderate" for the 0.08 parts per million (ppm) and 0.07 ppm 8-hour ozone standards and "serious" for the 0.075 ppm 8-hour ozone standard. A "serious" area has a design value of 0.093 up to but not including 0.105 ppm (EPA, 2018). New Jersey was in attainment in 2020 for the remaining five principal pollutants including PM, nitrogen dioxide, sulfur dioxide, carbon monoxide, and lead (NJDEP, November 23, 2021).

The Air Quality Index (AQI) is a national air quality rating system based on the NAAQS. An index value of 100 is equal to the primary, or health-based, NAAQS for each pollutant. This allows for a comparison of each of the pollutants used in the AQI. These pollutants are ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide. In the vicinity of the site, the Rutgers University station had one day in 2020 where the AQI reached the "Unhealthy for Sensitive Groups" ("USG") threshold due to ozone (NJDEP, November 23, 2021). In 2020, no stations in New Jersey had a AQI that reached "Unhealthy" ("UG") (NJDEP, November 23, 2021). The USG threshold means that members of sensitive groups may experience health effects and that the general public is not likely to be affected. The UG threshold means that everyone may begin to experience health effects and that members of sensitive groups may experience more serious health effects.

The NJDEP annual air quality reports also provide information on longer-term trends in the state, providing summary data for all monitoring locations from 1965 to the latest year reported. Examination of those data indicates that New Jersey has shown a somewhat erratic downward trend in the ozone standard and is getting close to meeting the ozone NAAQS. There has been a steady decline in overall particulate matter (PM)_{2.5}, which is now in compliance with the NAAQS. A sharp increase and subsequent decrease in sulfur dioxide concentrations in New Jersey occurred in 2013 as a result of a coal-burning facility across the Delaware River in Pennsylvania. The facility has since ceased operations under a court agreement, and sulfur dioxide levels in New Jersey have returned to meeting the NAAQS for sulfur dioxide. The State of New Jersey has long been in compliance with the NAAQS for the remaining three principal pollutants including nitrogen dioxide, carbon monoxide, and lead (NJDEP, November 23, 2021).

The Monmouth University, Colliers Mills, Toms River, Cattus Island, and Rutgers University air quality monitoring station are located in the general vicinity of the site. The Monmouth University and Colliers Mills stations only measure ozone; the Toms River station only measures particulates; and the Cattus Island station only measures acid deposition. The Rutgers University station monitors nitrogen oxides (NO_x), ozone, particulates, photochemical assessment monitoring (PAMs), toxics, mercury, and weather conditions. The summary data included in the 2020 report indicates no

contravention of standards for nitrogen dioxide, sulfur dioxide, and carbon monoxide (NJDEP, November 23, 2021). According to the Township of Howell's Environmental Resource Inventory (2021), no stationary sources within the Township report any emissions that exceed threshold values for carbon monoxide (CO), sulfur dioxide (SO₂), ammonia (NH₃), total suspended particulate matter (TSP), respirable particulate matter (PM₁₀ and PM_{2.5}), lead (Pb), volatile organic compounds (VOC), oxides of nitrogen (NO_x), carbon dioxide (CO₂), methane (CH₄) and the 36 toxic air pollutants (TAPs) pursuant to the NJDEP's Emission Statement Rule (N.J.A.C. 7:27-21) (Township of Howell, 2021a).

These positive trends in air quality have been occurring despite significant population increases in the central and southern regions of the state, and the concomitant increase in vehicular traffic associated with population growth. These countervailing trends appear to be the result of more effective emissions controls on vehicle exhausts and on industrial emissions, the net result of which is a decline in overall air loadings since air monitoring began in 1965 as summarized in the NJDEP report for 2020.

L. Sound Characteristics and Levels

Sound is conducted through air as a series of pressure waves having kinetic energy. The kinetic energy of these sound waves can be quantified in decibels - scalar units that are geometrically related to the energy of the sound at the receptor. A doubling in the sound energy will yield an increase of 6 dB. The decibel (dBA) scale ranges from 0 for the threshold of perception of sound to approximately 130 dBA for the threshold of pain at the ear; a quiet residential street may have noises in the 55 to 60 dBA range, while heavy street traffic generates noises in the 85 to 95 dBA range (EPA, 1976). The "A" suffix means that the sound energy characteristics have been weighted to emphasize the upper audible frequency ranges (A-weighting).

The site is located in a suburban area primarily surrounded by sparse residential, industrial, and commercial uses. The site is undeveloped land. The site is bordered to the north by Victory Road. Sounds generated by traffic on Victory Road likely are the predominant sounds in the northern portion of the site. During peak hours, traffic along Victory Road could be expected to generate sound levels of 75-80 dBA at points approximately 25 feet from the roadway (EPA, 1976). When road traffic is minimal, sound levels are likely to be typical of a normal suburban residential area, in the range of 53-57 dBA (EPA, 1976).

M. Land Use

The development of a site is in many cases a major alteration of the features of a property. The extent to which such change in land use is significant depends in part on the existing land use(s) on the site and in surrounding areas, and on the zoning constraints selected for the land by the governing municipality.

The site is undeveloped and characterized by upland woodland, upland field, and wetlands. The site is bordered to the north by Victory Road and industrial development beyond; to the east and south by woodlands; and to the west by an overhead electrical line and Conrail railroad.

N. Aesthetics

The aesthetic quality of a particular area is a general representation of how the area is perceived by humans. Literally, it is how the sensory information provided by an area is interpreted. Pleasing visual, auditory, and olfactory stimuli will combine to provide a perception of high aesthetic appeal. Offensive sights, sounds or odors will yield the opposite impression. Aesthetics, of course, vary from observer to observer; generally, though, rural and natural landscapes offer higher aesthetic appeal than do urban, highly modified landscapes.

The site could be considered aesthetically pleasing to persons passing by along Victory Road or on adjacent properties due to the undeveloped upland woodland, upland field, and wetland that characterizes the site.

O. Historic and Cultural Resources

Historic and cultural resources are man-made or man-modified features of the environment, including objects, structures, site and districts deemed to be of cultural significance. Such resources may be pre-historic or historic in age and are often worthy of preservation to provide present and future generations with a sense of the peoples who once lived and worked in a particular locality.

The site is undeveloped and characterized by upland woodland, upland field, and wetlands. The New Jersey and National Registers of Historic Places (NJDEP, 1995, last updated November 8, 2021) does not list any registered historic or eligible for listing resources on the site. Based on a review of the GIS layers “NJDEP Historic Districts, Properties, and Site Grid Map of New Jersey” (NJDEP, NHR, HPO, 2021) and Figure 10.1 in the Township of Howell’s Environmental Resource Inventory (Township of Howell, 2021a), there are no historic districts, historic properties, or historic archaeological site grids on the site. However, the “New Jersey Southern Railroad Historic District” is mapped just to the west of the site (Figure 5). The “New Jersey Southern Railroad Historic District”

is a National Register Eligible resource and was given an opinion of eligibility by the State Historic Preservation Officer in June 2008 (NJDEP, 1995, last updated November 8, 2021; Township of Howell, 2021a).

P. Demography

The demographic characteristics of a municipality define the characteristics of the human population living in this municipality - the population size, rate and direction of change in size, age structure, etc. These characteristics provide a perspective for assessing the degree to which a proposed development will affect the municipality.

According to the 2020 Census, the Township of Howell had a population of 53,537 people, a 4.8% increase over the 2000 census population of 51,075 (State of New Jersey Department of Labor and Workforce Development, 2021). This translates into a 0.5% annual growth rate in population, larger than the Monmouth County annual growth rate of 0.2% (State of New Jersey Department of Labor and Workforce Development, 2021).

V. ASSESSMENT OF ENVIRONMENTAL IMPACT

This chapter addresses the potential impacts to the environmental resources of the site and surrounding areas that could result from the proposed development. Potential impacts are first discussed generally, then according to the specific topics set forth in the preceding chapter that inventoried environmental characteristics of the site. The incorporation of mitigation measures during construction and operational phases of the proposed project are cited here in the context of the potential impacts; reference is made again to these mitigating measures in the following chapter.

In general, the principal environmental impacts associated with the construction phase of such a project result from disturbances to soils and vegetation. In the absence of appropriate control measures, clearing of vegetated tracts of land for construction and access to construction sites could reduce the productivity of the soil and create unsightly conditions and fugitive dust. Precipitation falling on disturbed areas could tend to erode fine soil particles and, in the absence of appropriate controls, increase loadings to areas receiving stormwater runoff. As will be detailed below, these potential adverse effects will be minimized by adherence to the Soil Erosion and Sediment Control Plan, to be approved by the Freehold District of the Soil Conservation Service.

The principal environmental impact associated with the proposed project would be the change in land use and the direct and indirect influences on the surrounding natural communities associated with the use of the site as a warehouse development. Construction of the development will convert approximately 13± acres of undeveloped land characterized as upland woodlands, upland field, and wetland to warehouse use.

Potential impacts on specific natural or human resources are discussed in the following sections.

A. Geology

Potential impacts to the project site's geological integrity are typically related to the location and extent of bedrock disturbance resulting from the construction phase. The construction of the project will occur in primarily unconsolidated sandy sediments. Thus, no significant impacts to the site's geological integrity are anticipated from the construction of the proposed development.

B. Topography

Potential impacts to the topography of the site are related to the extent of excavation and/or filling required to achieve the desired topography for construction of the warehouse development. The topography within the area of proposed development is of relatively flat to gently sloping. As

indicated on the grading plan, some modifications to the existing topography are proposed. Cutting and grading will be required at the proposed access driveways, building, parking areas, and stormwater management system. Throughout the site, soil erosion and sediment control measures will minimize soil loss and erosion wherever grading is proposed.

C. Soils

In the absence of appropriate control measures, construction activities may result in both short-term and long-term impacts related to soil loss. Removal of topsoil and organic layers could reduce the productivity of the soils, remove ground cover vegetation, and create unsightly conditions. During construction, the potential for soil disturbance will be limited to the area surrounding the proposed buildings, driveways, parking areas, and stormwater management system. During the entire construction period, soil loss and associated adverse impacts will be minimized by strict adherence to the measures specified in the Soil Erosion and Sediment Control Plan, to be approved by the Freehold Soil Conservation District.

These soil erosion measures include the use of stabilized construction entrance made up of clean stone at the proposed driveways, installation of inlet filters, installation of tree protection fences where necessary, and installation of silt fences along the limits of disturbance. Immediately following rough grading, all disturbed soils will be protected from erosion and soil loss by temporary seeding and mulching. Permanent vegetation will be established as soon as possible after final grading, as specified in the site plans. In areas where grading is necessary, rapid stabilization of all disturbed soil areas will minimize adverse effects related to soil loss or erosion. For a complete description of the soil erosion and sediment control measures, please refer to the site plans prepared by Bohler (2022).

D. Ground Water Quantity and Quality

Construction of the proposed development is not expected to have an adverse impact on the ground water resources of the site and surrounding area. No ground water withdrawal or wastewater disposal is proposed within the site, and no private wells will be used to supply potable water for the project. Potable water for the proposed development will be provided by New Jersey American Water Company. The daily water demand from the development will be approximately 2,625 gpd (Bohler, 2022). There will be no need to treat or manage the water from a regulatory or public health perspective.

Wastewater generated by the development, estimated to be 1,700 gpd, will be conveyed to the Manasquan River Regional Sewage Authority and the OCUA sewage treatment plant for treatment

(Bohler, 2022). This off-site treatment of wastewater by a regional municipal facility will eliminate the potential for contamination of ground water by wastewater effluent.

There will be an increase in impervious surfaces as a result of the proposed development. The stormwater management system has been designed to be in compliance with the requirements of the NJDEP's Stormwater Management Rules (N.J.A.C. 7:8) for ground water recharge. Therefore, ground water recharge is provided.

As discussed in Section IV.E above, there are no community or non-community well head protection areas mapped on or in the immediate vicinity of the site. Therefore, impacts to water supply wells are not anticipated.

E. Surface Water Quantity and Quality

The construction of the proposed warehouse development is expected to have a minimal impact to the surface water resources on and in the vicinity of the site. Potential short-term impacts to surface water quality are generally associated with soil loss, erosion, and sedimentation during construction activities. As previously described in Section C (Soils) of this chapter, soil disturbance will be largely confined to areas surrounding the proposed building, driveways, parking areas, and stormwater management system. Any adverse impacts will be minimized by the installation and maintenance of proven soil erosion and sediment control measures presented in the plans. These measures will retain disturbed soil sediment within the areas of construction and will mitigate the potential for sediment being transported off-site.

Stormwater from the developed portions of the site will be collected by a proposed stormwater management system. This system will consist of a series of inlets, manholes and subsurface piping that will convey stormwater to two infiltration basins and porous pavement proposed on the site. In addition, stormwater on the site will be bypassed to the existing drainage system along Victory Road via overland sheet flow. The stormwater management system has been designed to be in compliance with the requirements of the NJDEP's Stormwater Management Rules (N.J.A.C. 7:8) for stormwater quantity reductions, water quality, groundwater recharge, soil erosion and sediment control, and low impact development. For specific details regarding the proposed stormwater management system, refer to the Stormwater Management Report prepared for the project by Bohler of Warren, New Jersey (Bohler) dated February 2022.

F. Vegetation

Construction will require removal of existing vegetation from the majority of the site, affecting approximately 13± acres of upland woodland, upland field, and wetlands. A landscaping plan will be implemented to enhance the aesthetic features of the development. The landscaping plan includes deciduous trees, evergreen trees, ornamental trees, deciduous shrubs, evergreen shrubs, ground cover, perennials and ornamental grass. For specific details regarding the proposed landscaping, refer to the site plans prepared by Bohler (2022).

Because the proposed project requires tree removal in conjunction with a site plan approval from the Township of Howell, a Woodlands Management Plan is required in accordance with Article XXII of the Township code (Township of Howell, 2021b). The proposed Woodlands Management Plan has been provided in the site plans prepared by Bohler (2022). Following approval of the Woodlands Management Plan by the Township, an application for a Tree Removal Permit will be submitted prior to any construction. Any tree replacement required that cannot be provided on-site will be compensated for via payment into the Township Tree Fund by the applicant.

As discussed in Section IV.G of this EIR, there are no Natural Heritage Priority Sites or Natural Heritage Grid Maps on or in the immediate vicinity of the site that would suggest rare plants may occur on the site. No threatened or endangered plant species were observed during EcolSciences' field investigations in February 2022. Therefore, impacts to threatened or endangered plant species are not anticipated.

G. Wildlife

Noise, heavy equipment, and human activity during the construction phase of the project will cause most mobile wildlife species to move from the site into adjacent undeveloped areas. The project will disturb approximately 13± acres of the 19.9±-acre site consisting of undeveloped land characterized as upland woodland, upland field, and wetlands. This area will be developed with a warehouse development. A landscaping plan will be implemented to maintain aesthetics and provide soil stabilization throughout the site. The landscaping plan includes a mixture of deciduous trees, evergreen trees, ornamental trees, deciduous shrubs, evergreen shrubs, ground cover, perennials and ornamental grass. These landscaped areas will offer habitat to species tolerant of human disturbance. The proposed project will keep approximately 6.9 acres of undeveloped upland forest, upland field, and wetlands, which will continue to offer wildlife habitat.

No impacts to threatened or endangered wildlife species are anticipated. No threatened or endangered wildlife species were observed on the site during EcolSciences' field investigations conducted in February 2022. Impacts to the State-threatened Pine Barrens treefrog and State special

concern great blue heron documented on and in the immediate vicinity of the site are not anticipated. The isolated wetlands (WA- and WB-wetlands) proposed to be filled in the north portion of the site were classified by the NJDEP as intermediate resource value wetlands through the revised LOI issued on November 26, 2019 (File No. 1319-18-0011.1), indicating that they do not offer suitable habitat for the State-threatened Pine Barrens treefrog. A portion of the transition area of an off-site exceptional resource value wetland (WE-wetland) is proposed to be impacted. Although this wetland was determined to potentially be used by Pine Barrens treefrog by Eastern States during their 2019 habitat assessment (Eastern States, June 21, 2019), the last observation year for the Pine Barrens treefrog on and in the vicinity of the site was 1984 (NJDEP, Last Updated August 4, 2021). Therefore, the proposed impacts to the transition area of the WE-wetland are not anticipated to impact the Pine Barrens treefrog. Foraging habitat for the State special concern great blue heron documented on-site continues off-site to the south where it will continue to offer suitable habitat.

The majority of the on-site Landscape Project-mapped 300-meter buffer on off-site potential vernal habitats is proposed to be developed. This buffer is not a NJDEP regulated area and does not preclude development.

H. Wetlands

Encroachments into the on-site wetlands and wetland transition areas will be required for the proposed project. Therefore, an application for a Freshwater Wetlands General Permit 6 and Transition Area Averaging Plan Waiver will be submitted to the NJDEP for the proposed impacts. A General Permit 6 authorizes regulated activities in freshwater wetlands that are not part of a surface water tributary system discharging into an inland lake or pond, or a river or stream, provided the proposed activities meet the conditions applicable to all general permits and the General Permit 6 requirements. A Transition Area Averaging Plan Waiver modifies the overall shape of a transition area without reducing its total square footage. The General Permit 6 and TAW Averaging Plan will be obtained prior to project development.

A complete list of anticipated permits and/or approvals for the project is provided in Section IX of this EIR.

I. Aquatic Biota

Soil erosion and sediment controls will be in place during construction to prevent siltation and sedimentation from reaching the off-site streams. There are no on-site streams or other open waters that could provide potential suitable habitat for aquatic biota.

As mentioned in Section E of this chapter (Surface Water Quantity and Quality), stormwater from the developed portions of the site will be collected by a series of inlets, manholes and subsurface piping that will convey stormwater to two infiltration basins and porous pavement proposed on the site. In addition, stormwater on the site will be bypassed to the existing drainage system along Victory Road via overland sheet flow. This system has been designed to detain stormwater such that sediment and associated pollutants will be removed from the stormwater and will not be released to the off-site streams. This system is also designed to release stormwater at a controlled rate.

J. Floodways and Floodplains

No disturbances are proposed to floodways, floodplains, or riparian zones.

K. Air Quality

Short-term air quality impacts during construction are related to production of fugitive dust and generation of emissions from exhausts of construction vehicles. Mitigating measures, including dust control practices and the use on construction equipment of efficient air pollution control devices meeting applicable State/Federal specifications, will minimize adverse effects on local air quality.

Long-term air quality impacts will be related primarily to vehicle exhaust emissions, primarily carbon monoxide (CO), hydrocarbons, and nitrogen oxides (NO_x). However, the magnitude of the environmental effects attributable to the vehicle traffic associated with the proposed project should not affect regional air quality.

L. Sound Characteristics and Levels

Short-term generation of noise levels elevated over existing ambient levels will be generated during the construction of the proposed development. Sound levels generated during the construction phase can be expected in the range of 72 to 94 dBA at a distance of 50 feet from construction equipment, based upon the use of best available technology for noise reduction (EPA, 1976). The construction equipment included in this range consists of backhoes, concrete mixers, pavers, and trucks. To minimize adverse impacts to ambient noise levels during the construction period, construction equipment will only be operated during construction periods permitted by local law.

During the operational phase of the project, the principal sources of sound will be vehicular traffic. It is expected that the principal sources of noise in the area will continue to be traffic along Victory Road. The project will comply with the Township's requirements related to noise.

M. Land Use

The proposed development will result in the conversion of the majority of the presently undeveloped site into warehouse development. The project as designed is in conformance with the SED Zone of the Township of Howell.

N. Aesthetics

The portion of the site proposed for development is currently undeveloped land characterized as upland woodland, upland field, and wetland. A landscaping plan will be implemented to enhance the aesthetic features of the development. The landscaping plan includes a mixture of deciduous trees, evergreen trees, ornamental trees, deciduous shrubs, evergreen shrubs, ground cover, perennials and ornamental grass.

O. Historic and Cultural Resources

The proposed project is not expected to adversely impact any known cultural or historical resources. There does not appear to be any historical or cultural resources mapped on the site as discussed in Section IV.O of this EIR. The proposed project will not occur within the adjacent eligible “New Jersey Southern Railroad Historic District”.

P. Demography

The proposed warehouse development should have a nominal effect on the demography of the Township of Howell. The proposed project will contribute to temporary and permanent jobs in the Township of Howell, however, this increase in job availability is not anticipated to have a significant impact on the Township’s population.

VI. STEPS TO MINIMIZE ENVIRONMENTAL IMPACTS

A number of potential impacts associated with construction and operation of the proposed project were identified in Chapter V. Environmental protective measures that can minimize or eliminate environmental impacts are summarized below. Some have already been included in the site plans; others will be implemented during the construction phases. Many of the measures identified below have already been discussed in the preceding chapter, in the context of the particular environmental features in which they are identified.

A. Soils and Surface Water Resources

- Existing topography will be maintained to the greatest extent possible in the site planning to minimize the amount of grading required.
- Crushed stone-tracking pads will be installed at the site exit with Victory Road to reduce tracking of sediment onto adjacent roadways during construction activities.
- Silt fences will be erected around and/or down slope of disturbed areas to prevent sediment from being transported off-site.
- Upon completion of final grading, all disturbed areas will receive a final seeding and mulching in accordance with the Soil Erosion and Sediment Control Plan.
- All side slopes shall be protected from erosion by top soiling, seeding, and mulching as soon as possible after final grading.
- All soil erosion and sediment control measures shall be kept in place until construction is complete and/or the disturbed area is stabilized.
- All work will be done in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey.
- The stormwater management basins will be maintained free of debris and sediment that would interfere with the effective operation of these facilities.

B. Air Quality

- Construction vehicles that are to operate upon the public highways of the State of New Jersey will comply with the regulations as required by N.J.A.C. 7:27-14 and 15.
- Disposal of incinerable wastes by open burning will not be permitted.
- Exhaust systems and emission control devices on all construction machinery will be maintained in good operating condition.
- Vehicles transporting fill, dirt, or other materials will be covered with canvas or similar material.

C. Sound Levels

- To minimize noise generated by construction equipment, mufflers or similar noise abatement devices will be in good operating condition on all construction machinery.
- Silencers, shields, or enclosures will be used around all stationary noise-generating equipment.
- Operation of machinery will be limited to work periods permitted by local law.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The major irreversible and irretrievable commitment of resources will be the conversion of 13± acres of undeveloped land characterized as upland woodland, upland field, and wetland to warehouse use, consistent with Township zoning. A discussion of a no-action alternative is provided in Section II of this EIR.

VIII. UNAVOIDABLE IMPACTS

The applicant and its engineers have proposed and planned a project that will be compatible with the surrounding land uses in the Township of Howell. No project can be built and operated without generating some degree of adverse impact on some aspect of the natural or man-made environment. As discussed in the preceding chapter, impacts have been minimized to the extent possible by sound design decisions in the planning stages of the project. Moreover, compliance with State permit and Township ordinance conditions for regulated activities will protect the site's natural resources in the project vicinity. This chapter identifies the probable adverse environmental impacts of the proposed project. The unavoidable environmental impacts resulting from construction and operation of the proposed project are anticipated to be:

- Development of an undeveloped site characterized as upland woodland, upland field, and wetland to warehouse use and the associated loss of wildlife habitat.
- Increases in impervious surfaces.
- Increases in loadings of common constituents in stormwater runoff.

In general, the principal short-term environmental impacts associated with the construction phase of such a project result from temporary disturbances to soils and from the clearing of vegetation. In the absence of appropriate control measures, clearing of vegetated tracts of land for construction and access to construction sites could reduce the productivity of the soil and create unsightly conditions and fugitive dust. Precipitation falling on disturbed areas could tend to erode fine soil particles and, in the absence of appropriate controls, increase loadings to areas receiving stormwater runoff. These potential adverse effects will be managed by adherence to the Soil Erosion and Sediment Control Plan, as approved by the Freehold Soil Conservation District.

The principal long-term impact associated with the project is the commitment of natural resources resulting from the change in land use. The construction of the project will convert approximately 13± acres of undeveloped land characterized as upland woodland, upland field, and wetland to warehouse development consistent with Township zoning. The mitigating measures described in the preceding chapters will serve to minimize the potential impacts to natural resources in the site and surrounding area.

The long-term benefits of the project are related to improving the economy of the Township of Howell through the provision of new jobs and increased tax revenues to support public services.

IX. LIST OF LICENSES, PERMITS AND OTHER APPROVALS

The following constitutes a list of licenses, permits and approvals required for the proposed project:

**Table 3:
List of Licenses, Permits, or Other Approvals Needed**

Granting Authority	License, Permit, or Approval	Status
Township of Howell Planning Board	Preliminary & Final Major Site Plan Application	Subject of this application
Monmouth County Planning Board	Preliminary & Final Major Site Plan Application	To be submitted
Freehold Soil Conservation District	Soil Erosion and Sediment Control Plan Certification	To be submitted
NJDEP Division of Land Resource Protection	Letter of Interpretation-Line Verification	Issued 9/12/2018, Revised 11/26/2019 (File No. 1319-18-0011.1)
	Freshwater Wetlands General Permit 6 and Transition Area Averaging Plan Waiver	To be submitted
NJDEP Division of Water Quality	National Pollutant Discharge Elimination System (NPDES) General Permit 5G3 No. NJG0088323 Stormwater Discharge Associated with Construction Activity	To be submitted
	Treatment Works Approval (Sewer Extension)	To be submitted
NJDEP Bureau of Safe Drinking Water	Water Main Extension Permit	To be submitted

X. REFERENCES

Bohler. 2022. Personal Communication.

Bohler. February 28, 2022. Preliminary & Final Major Site Plan for AAVRHW Property LLC, Proposed Warehouse, Block 41, Lot 17, Victory Road, Township of Howell, Monmouth County, New Jersey.

Bohler. February 2022. Stormwater Management Report. AAVRHW Property, LLC. Block 41; Lot 17, Victory Road, Township of Howell, Monmouth County, New Jersey.

Eastern States Environmental Associates, Inc. June 21, 2019. Critical Wildlife Habitat Evaluation. Pine Barrens Treefrog Habitat Assessment. Block 41 – Lot 17. Howell Township, Monmouth County, New Jersey.

Federal Emergency Management Agency (FEMA). Effective September 25, 2009. Flood Insurance Rate Map. Monmouth County, New Jersey. All Jurisdictions. Community Panel No. 34025C0320F.

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Melick-Tully & Associates. February 18, 2022. Preliminary Subsurface Investigation/Hydrologic Soil Group Evaluation – Proposed Warehouse Development (Victory Road), Bohler Engineering, Howell Township, Monmouth County, New Jersey.

New Jersey Department of Environmental Protection (NJDEP). 1995, last updated November 8, 2021. New Jersey and National Registers of Historic Places http://www.state.nj.us/dep/hpo/1identify/nrsr_lists.htm

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NJDEP. January 2013. Torok, Larry. The Division of Land Use Regulation. Protocols for the Establishment of Exceptional Resource Value Wetlands Pursuant to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) based on Documentation of State or Federal Endangered or Threatened Species.

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NJDEP, Division of Water Monitoring and Standards. 2020. Bureau of Freshwater & Biological Monitoring. Publications. <https://www.nj.gov/dep/wms/bfbm/publications.html>

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- NJDEP, Natural and Historic Resources (NHR), Historic Preservation Office (HPO).** 2020. NJDEP Historic Districts, Properties, and Site Grid Map of New Jersey.
- NJDEP.** Last Amended October 5, 2021. Freshwater Wetlands Protection Act Rules. N.J.A.C. 7:7A.
- NJDEP.** November 23, 2021. 2020 New Jersey Air Quality Report.
- NJDEP.** June 24, 2021. DRAFT 2018/2020 New Jersey Integrated Water Quality Assessment Report (Integrated Report). <https://njdep.maps.arcgis.com/apps/MapSeries/index.html?appid=b5d39074f9ab424689caa8ec387dcef7>
- NJDEP.** Last Amended October 5, 2021. Flood Hazard Area Control Act Rules. N.J.A.C. 7:13.
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- New Jersey Division of Fish and Wildlife.** 2017. New Jersey Landscape Project, Version 3.3. New Jersey Department of Environmental Protection, Division of Fish and Wildlife, Endangered and Nongame Species Program. pp. 33.
- New Jersey Natural Heritage Program (NHP).** 2021. Office of Natural Lands Management (ONLM). The Natural Heritage Database. <https://www.nj.gov/dep/parksandforests/natural/heritage/#nhdb>
- New Jersey State Planning Commission.** 2001. New Jersey State Development and Redevelopment Plan.
- Robichaud, B., and M. F. Buell.** 1973. Vegetation of New Jersey: A Study of Landscape Diversity. Rutgers University Press, New Brunswick, New Jersey.
- State of New Jersey, Department of Labor and Workforce Development.** 2021. New Jersey State Data Center. 2020 Redistricting Data. New Jersey Population by County: 2020 and 2010. <https://nj.gov/labor/lpa/census/2020/cntydata20.html>
- Tiner, Ralph W.** July 1985. Wetlands of New Jersey. U.S. Fish and Wildlife Service, Region 5, Habitat Resources, One Gateway Center, Newton Corner, MA.
- Township of Howell.** August 2016. Zoning Map. <http://www.twp.howell.nj.us/452/Township-Maps>

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- Township of Howell.** November 18, 2019. Master Plan Reexamination Report. Prepared by CME Associates of Howell, New Jersey. <https://www.twp.howell.nj.us/ArchiveCenter/ViewFile/Item/486>
- Township of Howell.** 2021a. February 2021. Environmental Resource Inventory for Howell Township. Monmouth County, NJ. Prepared by Kratzer Environmental Services. <https://www.twp.howell.nj.us/ArchiveCenter/ViewFile/Item/554>
- Township of Howell.** 2021b. Township Code. <https://ecode360.com/HO2064>
- United States Environmental Protection Agency (EPA).** 1976. Direct Environmental Factors at Municipal Wastewater Treatment Works. EPA-430/9-76-003.
- United States EPA.** 2018. Ozone Designation and Classification Information. <https://www.epa.gov/green-book/ozone-designation-and-classification-information>
- United States EPA.** 2021. NAAQS Table. <https://www.epa.gov/criteria-air-pollutants/naaqs-table>
- United States Soil Conservation Service (SCS).** 1989. Soil Survey of Monmouth County.
- Widmer, K.** 1964. The Geology and Geography of New Jersey. D. Van Nostrand Company, Inc., Princeton, New Jersey.

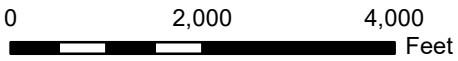
ATTACHMENT A

Figures

- Figure 1: USGS Site Location
- Figure 2: 2020 Aerial Imagery
- Figure 3: SCS Soils Mapping
- Figure 4: Landscape Project
- Figure 5: Historic Resources

EcolSciences, Inc.

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SITE LOCATION

State Plane Coordinates (New Jersey NAD 83)
580,774' E; 476,725' N

FIGURE 1: USGS SITE LOCATION

Block 41, Lot 17
Township of Howell
Monmouth County, New Jersey

USGS The National Map, 2022, Farmingdale, NJ and Lakewood, NJ Quadrangles.

EcolSciences, Inc.
Environmental Management & Regulatory Compliance

Date: 2/22/22

Scale 1:24,000



0 500 1,000
Feet


 Approximate Site Boundary

FIGURE 2: 2020 AERIAL IMAGERY

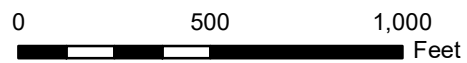
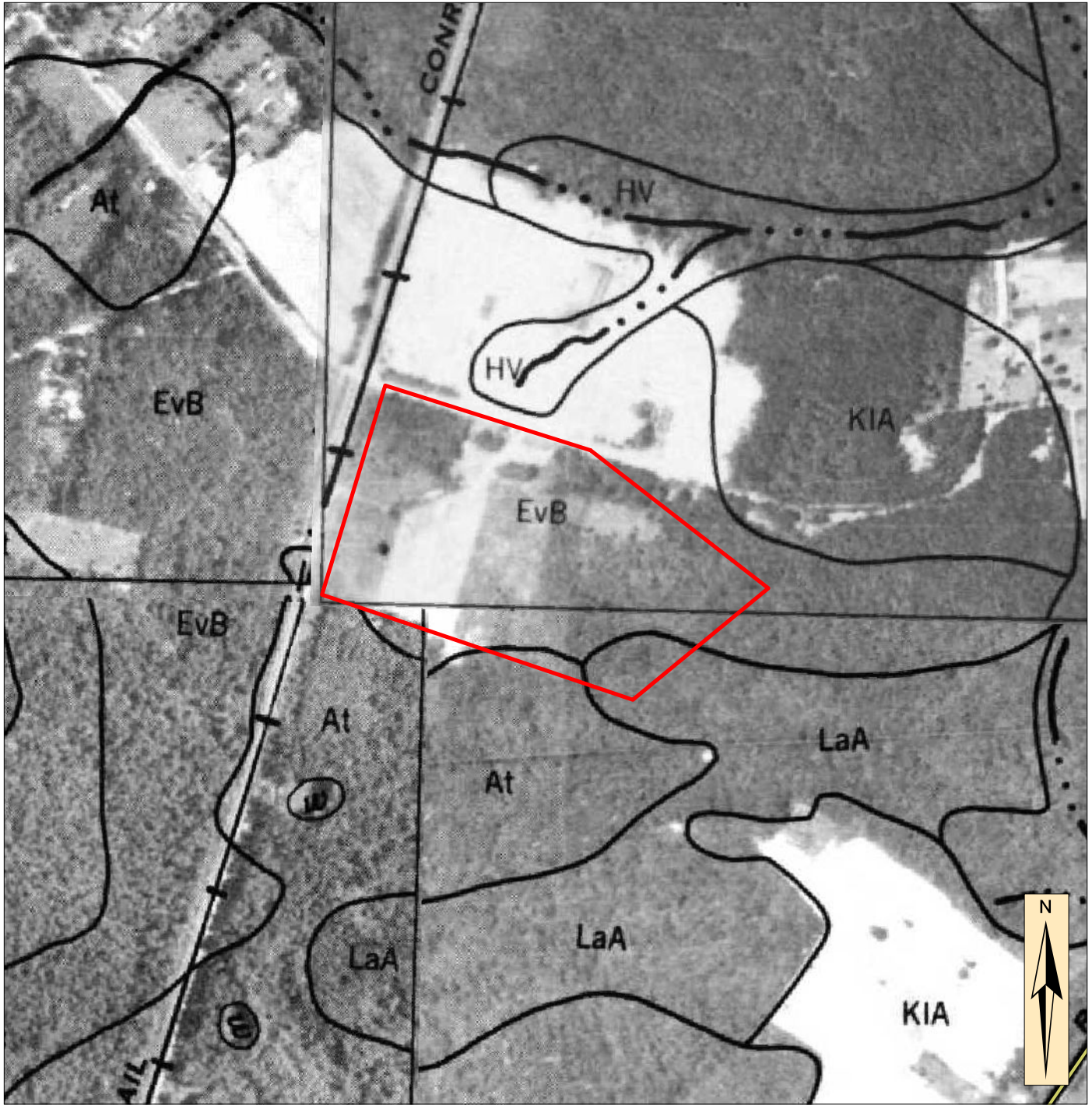
Block 41, Lot 17
Township of Howell
Monmouth County, New Jersey

Source: NJOIT, OGIS. 2021. NJ 2020 High Resolution Orthophotography.

EcolSciences, Inc.
Environmental Management & Regulatory Compliance

Date: 2/22/22

Scale 1:6,000



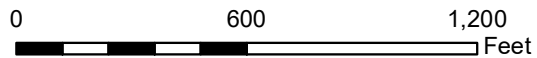
Approximate Site Boundary

FIGURE 3: SCS SOILS MAPPING	
Block 41, Lot 17 Township of Howell Monmouth County, New Jersey	
Source: USDA. SCS. 1989. Soil Survey of Monmouth County, New Jersey (Sheets 51, 52, 56, and 57)	
EcolSciences, Inc.	Date: 2/22/22
Environmental Management & Regulatory Compliance	Scale 1:6,000



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Approximate site boundary



Species-Based Habitat

RANK

- Rank 1 - Habitat specific requirements
- Rank 2 - Special Concern
- Rank 3 - State Threatened
- Rank 4 - State Endangered
- Rank 5 - Federal Listed

Vernal Pools

VERNAL POOL STATUS

- Vernal pool location
- Potential vernal pool location

Vernal Habitat

VERNAL HABITAT TYPE

- Potential vernal habitat area
- Vernal habitat area

FIGURE 4: LANDSCAPE PROJECT

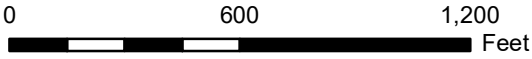
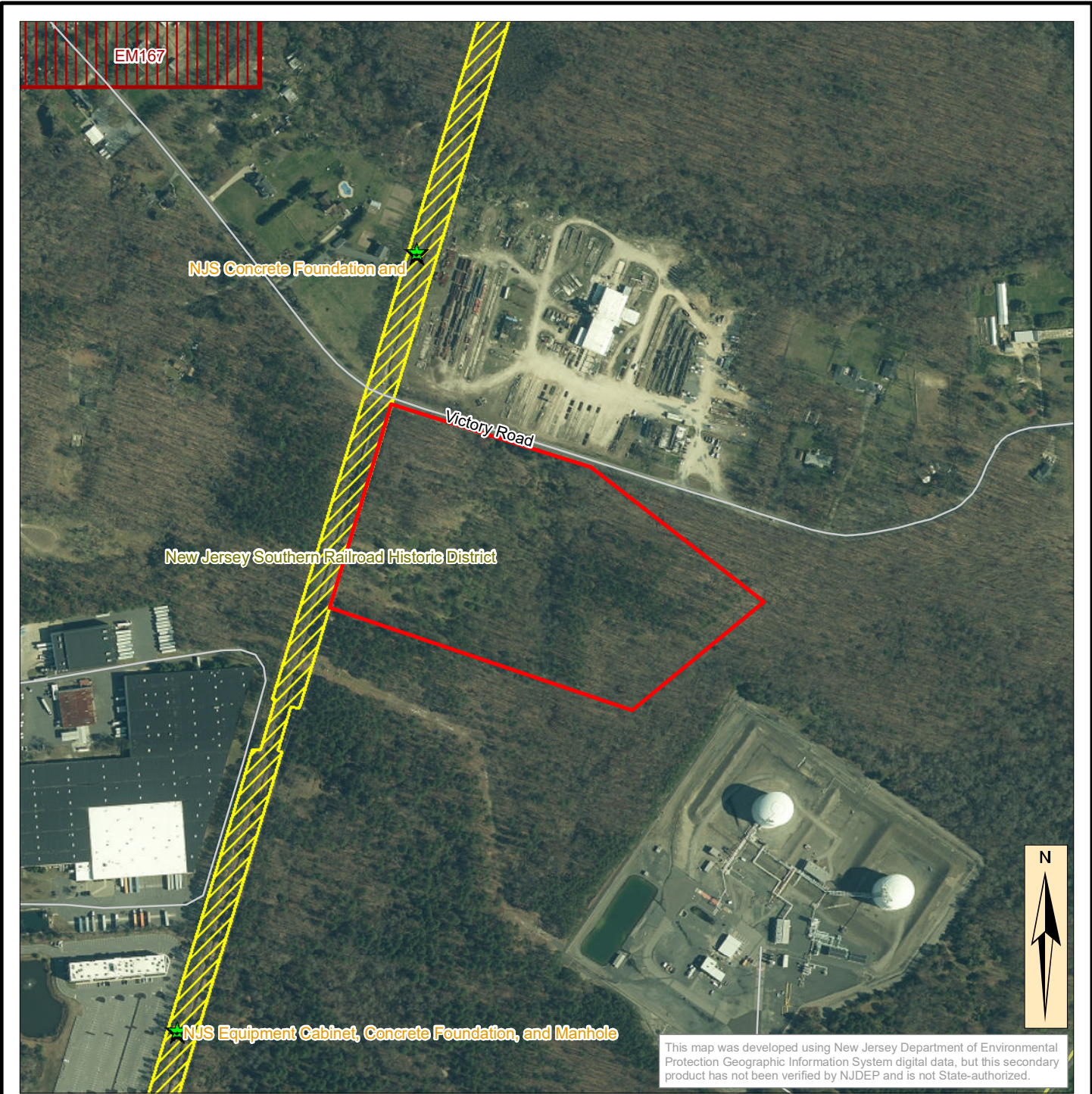
Block 41, Lot 17
Township of Howell
Monmouth County, New Jersey

Sources: NJDEP, DFW, ENSP. 2017. New Jersey's Landscape Project (Version 3.3). NJOIT, OGIS. 2021. NJ 2020 High Resolution Orthophotography.

EcolSciences, Inc.
Environmental Management & Regulatory Compliance

Date: 2/22/22

Scale 1:6,000



-  Approximate Site Boundary
-  Historic Property Features
-  Historic Properties
-  Archaeological Site Grid
-  Historic Districts

FIGURE 5: HISTORIC RESOURCES	
Block 41, Lot 17 Township of Howell Monmouth County, New Jersey	
Sources: NJDEP, NHR, HPO. 2021. NJDEP Historic Property Features, Properties, Districts, and Site Grid Map of NJ. NJOIT, OGIS. 2021. NJ 2020 High Resolution Orthophotography.	
EcolSciences, Inc. Environmental Management & Regulatory Compliance	Date: 2/22/22 Scale 1:6,000

ATTACHMENT B

Pertinent Correspondence

EcolSciences, Inc.

Environmental Management & Regulatory Compliance



State of New Jersey

MAIL CODE 501-04

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF PARKS & FORESTRY

NEW JERSEY FOREST SERVICE

OFFICE OF NATURAL LANDS MANAGEMENT

P.O. BOX 420

TRENTON, NJ 08625-0420

Tel. (609) 984-1339 Fax (609) 984-0427

PHILIP D. MURPHY

Governor

SHEILA Y. OLIVER

Lt. Governor

SHAWN M. LATOURETTE

Commissioner

February 9, 2022

Rachel Fisler
Bohler Engineering NJ, LLC
30 Independence Blvd., Suite 200
Warren, NJ 07059

Re: Warehouse - Victory Road
Block(s) - 41, Lot(s) - 17
Howell Township, Monmouth County

Dear Ms. Fisler:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the map(s) submitted with the Natural Heritage Data Request Form into our GIS. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the immediate vicinity of the site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/countylist.html>. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from http://www.state.nj.us/dep/parksandforests/natural/heritage/nhpcodes_2010.pdf.

Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project Version 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive web application at the following URL,

NHP File No. 22-4007422-24014

<https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7>, or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at <http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html>.

PLEASE SEE 'CAUTIONS AND RESTRICTIONS ON NHP DATA', which can be downloaded from <http://www.state.nj.us/dep/parksandforests/natural/heritage/newcaution2008.pdf>.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,



Robert J. Cartica
Administrator

c: NHP File No. 22-4007422-24014

Table 1: On Site Data Request Search Results (6 Possible Reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites On Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3	Yes	1 page(s) included
5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

**Rare Wildlife Species or Wildlife Habitat on the
Project Site Based on Search of
Landscape Project 3.3 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Amphibia</i>								
	Pine Barrens Treefrog	Hyla andersonii	Occupied Habitat	3	NA	State Threatened	G4	S2
	Pine Barrens Treefrog	Hyla andersonii	Vernal Pool Breeding	3	NA	State Threatened	G4	S2
<i>Aves</i>								
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N

**Vernal Pool Habitat on the
Project Site Based on Search of
Landscape Project 3.3**

Vernal Pool Habitat Type	Vernal Pool Habitat ID
Vernal habitat area	2821
Total number of records:	1

Table 2: Vicinity Data Request Search Results (6 possible reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within the Immediate Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.3	Yes	1 page(s) included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

**Rare Wildlife Species or Wildlife Habitat Within the
Immediate Vicinity of the Project Site Based on Search of
Landscape Project 3.3 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Amphibia</i>								
	Pine Barrens Treefrog	Hyla andersonii	Occupied Habitat	3	NA	State Threatened	G4	S2
	Pine Barrens Treefrog	Hyla andersonii	Vernal Pool Breeding	3	NA	State Threatened	G4	S2
<i>Aves</i>								
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N

**Vernal Pool Habitat
In the Immediate Vicinity of
Project Site Based on Search of
Landscape Project 3.3**

Vernal Pool Habitat Type

Vernal Pool Habitat ID

Vernal habitat area	2821
Potential vernal habitat area	1420
Total number of records:	2



State of New Jersey

PHILIP D. MURPHY
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION

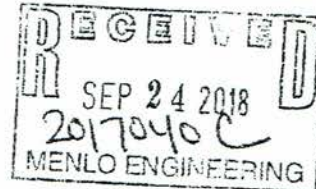
CATHERINE R. McCABE
Commissioner

SHEILA Y. OLIVER
Lt. Governor

Division of Land Use Regulation
Mail Code 501-02A
P.O. Box 420
Trenton, New Jersey 08625-0420
www.nj.gov/dep/landuse

SEP 12 2018

Gary Vialonga
c/o Stavola Realty Company
620 Tinton Avenue
Building B, Suite 200
Tinton Falls, NJ 07724



RE: Freshwater Wetlands Letter of Interpretation: Line Verification
File No.: 1319-18-0011.1
Activity Number: FWW180001
Applicant: Stavola Realty Company
Block(s) and Lot(s): [41, 17]
Howell Township, Monmouth County

Dear Mr. Vialonga:

This letter is in response to your request for a Letter of Interpretation to have Division of Land Use Regulation (Division) staff verify the boundary of the freshwater wetlands and/or State open waters on the referenced property.

In accordance with agreements between the State of New Jersey Department of Environmental Protection (NJDEP), the U.S. Army Corps of Engineers (USACOE) Philadelphia and New York Districts, and the U.S. Environmental Protection Agency (USEPA), the NJDEP is the lead agency for establishing the extent of State and Federally regulated wetlands and waters. The USEPA and/or USACOE retain the right to reevaluate and modify the jurisdictional determination at any time should the information prove to be incomplete or inaccurate

Based upon the information submitted, and upon a site inspection conducted by Division staff on July 10, 2018, the Division has determined that the wetlands and waters boundary line(s) as shown on the plan map entitled: "STAVOLA - PARCEL 31, TOWNSHIP OF HOWELL, MONMOUTH COUNTY, NEW JERSEY, WETLANDS MAP, BLOCK 41 LOT 17, TAX MAP SHEET: 19.90 ACRES", consisting of 1 sheet, dated May 16, 2018, last revised August 13, 2018, and prepared by Menlo Engineering Associates, Inc., is accurate as shown.

The freshwater wetlands and waters boundary line(s), as determined in this letter, must be shown on any future site development plans. The line(s) should be labeled with the above file number and the following note:

"Freshwater Wetlands/Waters Boundary Line as verified by NJDEP"

Wetlands Resource Value Classification ("RVC")

In addition, the Division has determined that the resource value and the standard transition area or buffer required adjacent to the delineated wetlands are as follows:

Exceptional: Flag point WB-0 through WB-11, flag point WC-0 through flag point WC-13, and flag point WE-0 through flag point WE-5 [**150 foot wetland buffer**]

Intermediate: Flag point WA-0 through flag point WA-6, and flag point WD-0 through flag point WD- 3. [**50 foot wetland buffer**]

In addition, there are wetlands on the subject site which potentially meet the definition of a "vernal habitat" as found at N.J.A.C. 7:7A-1.4. These determinations may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-7), the types of Statewide General Permits available for the wetlands portion of this property (see N.J.A.C. 7:7A-5) and the modification available through a transition area waiver (see N.J.A.C. 7:7A-6). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

RVC may affect requirements for wetland and/or transition area permitting. This classification may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-9 and 10), the types of Statewide General Permits available for the property (see N.J.A.C. 7:7A-5 and 7) and any modification available through a transition area waiver (see N.J.A.C. 7:7A-8). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

Wetlands resource value classification is based on the best information available to the Division. The classification is subject to reevaluation at any time if additional or updated information is made available, including, but not limited to, information supplied by the applicant.

Under N.J.S.A. 13:9B-7a(2), if the Division has classified a wetland as exceptional resource value, based on a finding that the wetland is documented habitat for threatened and endangered species that remains suitable for use for breeding, resting or feeding by such species, an applicant may request a change in this classification. Such requests for a classification change must demonstrate that the habitat is no longer suitable for the documented species because there has been a change in the suitability of this habitat. Requests for resource value classification changes and associated documentation should be submitted to the Division at the address at the top of this letter.

General Information

Pursuant to the Freshwater Wetlands Protection Act Rules, you are entitled to rely upon this jurisdictional determination for a period of five years from the date of this letter unless it is determined that the letter is based on inaccurate or incomplete information. Should additional information be disclosed or discovered, the Division reserves the right to void the original letter of interpretation and issue a revised letter of interpretation.

Regulated activities proposed within a wetland, wetland transition area or water area, as defined by N.J.A.C. 7:7A-2.2 and 2.3 of the Freshwater Wetlands Protection Act rules, require a permit from this office unless specifically exempted at N.J.A.C. 7:7A-2.4. The approved plan and supporting jurisdictional limit information are now part of the Division's public records.

Please be advised that any surface water features on the site or adjacent to the site may possess flood hazard areas and/or riparian zones and development within these areas may be subject to the Flood Hazard Area Control Act rules at N.J.A.C. 7:13. The Division can verify the extent of flood hazard areas and/or riparian zones through a flood hazard area verification under the application procedures set forth at N.J.A.C. 7:13-5.1.

This letter in no way legalizes any fill which may have been placed, or other regulated activities which may have occurred on-site. This determination of jurisdiction extent or presence does not make a finding that wetlands or water areas are "isolated" or part of a surface water tributary system unless specifically called out in this letter as such. Furthermore, obtaining this determination does not affect your responsibility to obtain any local, State, or Federal permits which may be required.

Recording

Within 90 calendar days of the date of this letter, the applicant shall submit the following information to the clerk of each county in which the site is located, and shall send proof to the Division that this information is recorded on the deed of each lot referenced in the letter of interpretation:

1. The Department file number for the letter of interpretation;
2. The approval and expiration date of the letter of interpretation;
3. A metes and bounds description of the wetland boundary approved under the letter of interpretation;
4. The width and location of any transition area approved under the letter of interpretation; and
5. The following statement: "The State of New Jersey has determined that all or a portion of this lot lies in a freshwater wetland and/or transition area. Certain activities in wetlands and transition areas are regulated by the New Jersey Department of Environmental Protection and some activities may be prohibited on this site or may first require a freshwater wetland permit. Contact the Division of Land Use Regulation at (609) 292-0060 or <http://www.nj.gov/dep/landuse> for more information prior to any construction onsite."

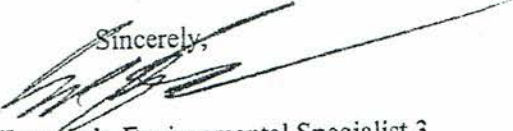
Failure to have this information recorded in the deed of each lot and/or to submit proof of recording to the Division constitutes a violation of the Freshwater Wetlands Protection Act rules and may result in suspension or termination of the letter of interpretation and/or subject the applicant to enforcement action pursuant to N.J.A.C. 7:7A-22.

Appeal Process

In accordance with N.J.A.C. 7:7A-21, any person who is aggrieved by this decision may request a hearing within 30 days of the date the decision is published in the DEP Bulletin by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing Requests, Mail Code 401-04L, P.O. Box 402, 401 East State Street, 7th Floor, Trenton, NJ 08625-0402. This request must include a completed copy of the Administrative Hearing Request Checklist found at www.state.nj.us/dep/landuse/forms. Hearing requests received after 30 days of publication notice may be denied. The DEP Bulletin is available on the Department's website at www.state.nj.us/dep/bulletin. In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website www.nj.gov/dep/odr for more information on this process.

Please contact Taryn Pittfield of our staff by e-mail at taryn.pittfield@dep.nj.gov or by phone at (609) 984-1386 should you have any questions regarding this letter. Be sure to indicate the Department's file number in all communication.

Sincerely,

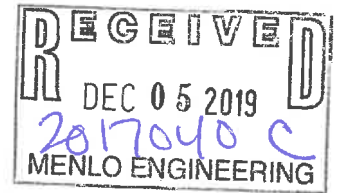


Robert B. Kozachek, Environmental Specialist 3
Division of Land Use Regulation

cc: Municipal Clerk
Municipal Construction Official
Agent (original)



State of New Jersey



PHILIP D. MURPHY
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION

CATHERINE R. McCABE
Commissioner

SHEILA Y. OLIVER
Lt. Governor

Division of Land Use Regulation
Mail Code 501-02A
P.O. Box 420
Trenton, New Jersey 08625-0420
www.nj.gov/dep/landuse

Gary Vialonga
c/o Stavola Realty Company
620 Tinton Avenue
Building B, Suite 200
Tinton Falls, NJ 07724

NOV 26 2019

RE: Freshwater Wetlands Letter of Interpretation: Line Verification
File No.: 1319-18-0011.1
Activity Number: FWW180001
Applicant: Stavola Realty Company
Block(s) and Lot(s): [41, 17]
Howell Township, Monmouth County

Dear Mr. Vialonga:

This is a REVISED Letter of Interpretation to modify one of the wetlands Resource Class Value designation on the approved Verification issued by the Department on September 12, 2018. This revision shall supersede the original Verification and the September 11, 2023 expiration date remains unchanged.

This letter is in response to your request for a Letter of Interpretation to have Division of Land Use Regulation (Division) staff verify the boundary of the freshwater wetlands and/or State open waters on the referenced property.

In accordance with agreements between the State of New Jersey Department of Environmental Protection (NJDEP), the U.S. Army Corps of Engineers (USACOE) Philadelphia and New York Districts, and the U.S. Environmental Protection Agency (USEPA), the NJDEP is the lead agency for establishing the extent of State and Federally regulated wetlands and waters. The USEPA and/or USACOE retain the right to reevaluate and modify the jurisdictional determination at any time should the information prove to be incomplete or inaccurate

Based upon the information submitted, and upon a site inspection conducted by Division staff on July 10, 2018, the Division has determined that the wetlands and waters boundary line(s) as shown on the plan map entitled: "STAVOLA – PARCEL 31, TOWNSHIP OF HOWELL, MONMOUTH COUNTY, NEW JERSEY, WETLANDS MAP, BLOCK 41 LOT 17, TAX MAP SHEET: 19.90 ACRES", consisting of 1 sheet, dated May 16, 2018, last revised August 13, 2018, and prepared by Menlo Engineering Associates, Inc., is accurate as shown.

The freshwater wetlands and waters boundary line(s), as determined in this letter, must be shown on any future site development plans. The line(s) should be labeled with the above file number and the following note:

“Freshwater Wetlands/Waters Boundary Line as verified by NJDEP”

Wetlands Resource Value Classification (“RVC”)

In addition, the Division has determined that the resource value and the standard transition area or buffer required adjacent to the delineated wetlands are as follows:

Exceptional: Flag point WC-0 through flag point WC-13, and flag point WE-0 through flag point WE-5
[150 foot wetland buffer]

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[50 foot wetland buffer]

In addition, there are wetlands on the subject site which potentially meet the definition of a “vernal habitat” as found at N.J.A.C. 7:7A-1.4. These determinations may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-7), the types of Statewide General Permits available for the wetlands portion of this property (see N.J.A.C. 7:7A-5) and the modification available through a transition area waiver (see N.J.A.C. 7:7A-6). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

RVC may affect requirements for wetland and/or transition area permitting. This classification may affect the requirements for an Individual Wetlands Permit (see N.J.A.C. 7:7A-9 and 10), the types of Statewide General Permits available for the property (see N.J.A.C. 7:7A-5 and 7) and any modification available through a transition area waiver (see N.J.A.C. 7:7A-8). Please refer to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.) and implementing rules for additional information.

Wetlands resource value classification is based on the best information available to the Division. The classification is subject to reevaluation at any time if additional or updated information is made available, including, but not limited to, information supplied by the applicant.

Under N.J.S.A. 13:9B-7a(2), if the Division has classified a wetland as exceptional resource value, based on a finding that the wetland is documented habitat for threatened and endangered species that remains suitable for use for breeding, resting or feeding by such species, an applicant may request a change in this classification. Such requests for a classification change must demonstrate that the habitat is no longer suitable for the documented species because there has been a change in the suitability of this habitat. Requests for resource value classification changes and associated documentation should be submitted to the Division at the address at the top of this letter.

General Information

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Regulated activities proposed within a wetland, wetland transition area or water area, as defined by N.J.A.C. 7:7A-2.2 and 2.3 of the Freshwater Wetlands Protection Act rules, require a permit from this office unless specifically exempted at N.J.A.C. 7:7A-2.4. The approved plan and supporting jurisdictional limit information are now part of the Division's public records.

Please be advised that any surface water features on the site or adjacent to the site may possess flood hazard areas and/or riparian zones and development within these areas may be subject to the Flood Hazard Area Control Act rules at N.J.A.C. 7:13. The Division can verify the extent of flood hazard areas and/or riparian zones through a flood hazard area verification under the application procedures set forth at N.J.A.C. 7:13-5.1.

This letter in no way legalizes any fill which may have been placed, or other regulated activities which may have occurred on-site. This determination of jurisdiction extent or presence does not make a finding that wetlands or water areas are "isolated" or part of a surface water tributary system unless specifically called out in this letter as such. Furthermore, obtaining this determination does not affect your responsibility to obtain any local, State, or Federal permits which may be required.

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Failure to have this information recorded in the deed of each lot and/or to submit proof of recording to the Division constitutes a violation of the Freshwater Wetlands Protection Act rules and may result in suspension or termination of the letter of interpretation and/or subject the applicant to enforcement action pursuant to N.J.A.C. 7:7A-22.

Appeal Process

In accordance with N.J.A.C. 7:7A-21, any person who is aggrieved by this decision may request a hearing within 30 days of the date the decision is published in the DEP Bulletin by writing to: New Jersey Department of Environmental Protection, Office of Legal Affairs, Attention: Adjudicatory Hearing Requests, Mail Code 401-04L, P.O. Box 402, 401 East State Street, 7th Floor, Trenton, NJ 08625-0402. This request must include a completed copy of the Administrative Hearing Request Checklist found at

www.state.nj.us/dep/landuse/forms. Hearing requests received after 30 days of publication notice may be denied. The DEP Bulletin is available on the Department's website at www.state.nj.us/dep/bulletin. In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website www.nj.gov/dep/odr for more information on this process.

Please contact Taryn Pittfield of our staff by e-mail at taryn.pittfield@dep.nj.gov or by phone at (609) 984-1386 should you have any questions regarding this letter. Be sure to indicate the Department's file number in all communication.

Sincerely,



Ryan J. Anderson, Manager
Division of Land Use Regulation

cc: Municipal Clerk
Municipal Construction Official
Agent (original)

CONRAIL - NEW JERSEY SOUTHERN BRANCH

VICTORY ROAD

BLOCK 41
LOT 17
866,967 sq.ft.
19.90 acres

390.92'

LOT 19
N02°45' - 11.28' S 94° 24' 41.16" E 116.5' (SEE DEED REC #A)
N16°53' 46" E 716.30'

N122°17' 19" W 1122.08'
N16° 5' 0" E 18.0' AND 18.0' (SEE DEED REC #A)
N1/2 NEW JERSEY NATURAL GAS COMPANY

LOT 18
N1/2 NEW JERSEY NATURAL GAS COMPANY

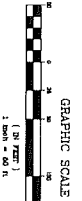
S172°37' 24" E 895.18'
N1/2 NEW JERSEY NATURAL GAS COMPANY

LOT 12
N1/2 NEW JERSEY NATURAL GAS COMPANY

S172°22' 58" E 716.91'
N1/2 NEW JERSEY NATURAL GAS COMPANY

SEE DEED RECORDS FOR THE LOCATION OF THE CONRAIL TRACKS AND THE LOCATION OF THE VICTORY ROAD RIGHT-OF-WAY.

REFERENCES:
1. DEED RECORDS FOR BLOCK 41, LOT 17 PREPARED BY CONRAIL.
2. DEED RECORDS FOR BLOCK 41, LOT 18 PREPARED BY CONRAIL.



MEMO ENGINEERING ASSOCIATES, INC.
250 CLIFTON AVENUE, SUITE 200
CLIFTON, NJ 07011
PHONE: (732) 846-8455
FAX: (732) 846-4439

STAVOLA - PARCEL 31
TOWNSHIP OF HOWELL, MONMOUTH COUNTY, NEW JERSEY
WETLANDS MAP

DATE OF FIELD SURVEY: 12/15/2018
DATE OF MAP SHEET: 1/10/2019
SCALE: 1" = 200'
SHEET NO. 1 OF 1

BLOCK 41
LOT 17
19.90 ACRES

DATE OF FIELD SURVEY: 12/15/2018
DATE OF MAP SHEET: 1/10/2019
SCALE: 1" = 200'
SHEET NO. 1 OF 1

THIS DRAWING IS FOR PLANNING PURPOSES ONLY. IT IS NOT TO BE USED FOR CONSTRUCTION. THIS DRAWING HAS BEEN CHECKED AND DATED.

NO.	DESCRIPTION	DATE
1	PRELIMINARY	12/15/2018
2	FINAL	1/10/2019

PROJECT: STAVOLA - PARCEL 31
CLIENT: MEMO ENGINEERING ASSOCIATES, INC.
PROJECT NO.: 18-001
SHEET NO.: 1 OF 1

Krista Ruh

From: Ken Grisewood
Sent: Monday, October 15, 2018 12:03 PM
To: Krista Ruh
Subject: 2017040-Victory Road DLUR: 1319-18-0011.1

Krista:
Please file this and attach it to the LOI as issued. We are going to note them on the filed plan.
Ken

From: Pittfield, Taryn <Taryn.Pittfield@dep.nj.gov>
Sent: Monday, October 15, 2018 11:33 AM
To: Ken Grisewood <KGRISEWOOD@menloeng.com>
Subject: 1319-18-0011.1

Good morning Ken,
Regarding our conversation on October 11, 2018 and information provided to the Department, in reference to the isolation request of the Stavola- Parcel 31, we have the following Department determination:

1. Wetlands WA-0 through WA-6 **is considered isolated**
2. Wetlands WC-0 through WC-13 **is considered isolated**
3. Wetlands WB-0 through WB-11 **is considered isolated**
4. No isolation determination was requested for offsite freshwater wetlands identified within the LOI and therefore the Department did not investigate these areas for this request

However, should additional information be presented to the Division regarding any of the isolation determinations referenced 1 through 3 above we reserved the right to change the isolation designation to "Part of surface water tributary system" as defined at N.J.A.C. 7:7A-1.3 un the Freshwater Wetland Protection Act Rules (N.J.A.C.7A).

Any discrepancy with the exceptional resource value classification designation on the issued LOI, should be discussed with the Department's Threatened & Endangered species unit for guidance on additional concerns. Please contact Sally Florio, Sally.Florio@dep.nj.gov, with these issues.

Should you have additional questions or concerns please contact me at taryn.pittfield@dep.nj.gov or at (609)-984-1386.

Best,

Taryn

Taryn Pittfield

NJ Department of Environmental Protection
Division of Land Use Regulation
501 East State St., 2nd Floor
P.O. Box 420, Mail Code 501-02A
Trenton, NJ 08625

Taryn.Pittfield@dep.nj.gov



ATTACHMENT C

Qualifications of Preparers

EcolSciences, Inc.

Environmental Management & Regulatory Compliance

THOMAS M. AUFFENORDE

- EDUCATION:** *M.S., 1982, Botany
Ohio University
B.S., 1980, Biology
University of Alabama in Huntsville*
- AREAS OF EXPERTISE:** *Wetlands Identification, Ecology and Mitigation
Environmental Analysis and Impact Assessment
Environmental Compliance - Construction
Threatened and Endangered Species
Stormwater Pollution Prevention Plan (SWPPP) Compliance*
- PROFESSIONAL AFFILIATIONS:** *Society of Wetland Scientists*
- PROFESSIONAL CERTIFICATIONS:** *USEPA Wetland Delineation Methodology
Certified Stormwater Pollution Prevention Plan (SWPPP) Preparer
Certified Compliance Inspector of Stormwater*

EXPERIENCE:

Mr. Auffenorde is a Vice President and has been employed at EcolSciences, Inc. since 1986. He has directed or participated in over 1,500 construction-related environmental studies for a wide range of clients including the development, legal, engineering and financial professions, as well as local, state and federal government agencies. During his employment with EcolSciences, Inc., his responsibilities have included construction-related wetland regulatory analysis and compliance, environmental impact assessment, Stormwater Pollution Prevention Plan (SWPPP) preparation and compliance, and threatened / endangered species studies. Mr. Auffenorde's project experience also includes extensive client contact, project management, and expert testimony pursuant to the municipal development approval process. Mr. Auffenorde has also been accepted as an expert in wetland regulatory compliance in New Jersey Superior Court. A summary of Mr. Auffenorde's relevant project experience includes:

Environmental Compliance - Construction

Reviewed hundreds of construction site plans for environmental compliance including preparation, submittal, and follow-up on State and Federal wetland permitting. Prepared hundreds of Environmental Impact Statements for the New Jersey municipal development approval process. Involved in the preparation of SWPP Plans and provided construction oversight of SWPPP compliance

- Provided SWPPP compliance oversight for a major utility on a 2-year 44-mile electric transmission line upgrade project in northern New Jersey.
- Active in preparation of SWPP Plans and in an oversight capacity on SWPPP compliance for residential and commercial construction projects



Wetland Studies

Directed and participated in more than 1,000 field studies in NJ, NY and PA for wetland regulatory compliance. Representative experience includes:

- The evaluation of more than 5,000 acres in the New Jersey Highlands.
- The evaluation of more than 2,000 acres in the complex red-shale soils of the New Jersey Piedmont.
- The evaluation of more than 1,000 acres in the sandy soils of the New Jersey Coastal Plain.
- The design and implementation of water table/soil saturation monitoring programs to determine the presence or absence of wetland hydrology in drained organic and mineral soils.

Wetlands Mitigation

Participated in the design, implementation, and monitoring of wetlands mitigation projects pursuant to regulatory violations and to compensate for wetland losses from approved wetland fills. Representative project experiences include:

- Design and coordination with state environmental agency personnel for a 20-acre wetlands restoration/enhancement project required pursuant to a settlement agreement involving wetland disturbances in Mt. Olive, New Jersey. The project involves hydrologic manipulation, extensive wetland plantings, and enhancement of wildlife habitat.
- Design, implementation, monitoring and coordination with state environmental agency personnel of a one acre wetlands restoration project pursuant to authorized wetland disturbances for clean-up of hazardous materials, Holmdel, New Jersey. Project is in the monitoring phase.
- Design, implementation, monitoring and coordination with state environmental agency personnel of a 2-acre wetlands creation project pursuant to authorized wetland fills for a Toys "R" Us warehouse, Mt. Olive, New Jersey. Project is in the monitoring phase.
- Design, implementation and coordination with state environmental agency personnel of a 3-acre wetlands restoration project for Exxon Research and Engineering Company, Florham Park, New Jersey. Project has received agency approval.
- Preparation and implementation of a one acre wetland creation project pursuant to authorized wetland fills for a residential development in Roxbury, New Jersey. Project has received agency approval.



Corridor/Utility Experience

- Designed, directed and participated in ecological studies, regulatory assessment and regulatory compliance for more than 200 linear miles of road corridors, gas and electric transmission right of ways and sewer and water alignments. Studies have been performed for the New Jersey DOT, Public Service Electric and Gas, Jersey Central Power and Light, New Jersey Natural Gas, and numerous local governments.
- Conducted and/or managed comprehensive investigations of regulated wetlands/waters and threatened and endangered species for the Public Service Electric and Gas 44-mile Susquehanna – Roseland electric transmission line upgrade project. Provided regulatory support for environmental permitting. Managed environmental compliance during construction, interfacing with management for the oversight contractor and construction contractor. Duties included troubleshooting soil erosion and sediment control discharge issues, installation of functional wildlife crossings, working with contractors to minimize environmental impacts of construction, and design reviews of plan changes for environmental compliance and minimization of impacts.
- Investigation of Public Service Electric and Gas electric transmission lines for wetlands/waters and threatened or endangered species for vegetation maintenance activities. Worked collaboratively in the field with vegetation maintenance contractors and PSE&G right-of-way managers to ensure compliance with environmental permits and to minimize environmental impacts.

Threatened and Endangered Species Studies

Active in the design and implementation of numerous field studies for rare plant and animal species including, but not limited to: Bog Turtle, Wood Turtle, Pine Barrens Treefrog, Northern Pine Snake, Barred Owl, Coopers Hawk, Grasshopper Sparrow, Savannah Sparrow, Swamp Pink, Knieskern's Beaked Rush, and the plants listed in the Pinelands Comprehensive Management Plan.

- Performed an evaluation of eight NJ Superfund sites to determine the potential occurrence of the federally threatened plant species, Swamp Pink and Knieskern's Beaked-rush, for the USEPA.
- Participated in the design and implementation of a comprehensive threatened and endangered plant and animal studies on numerous large and small holdings in southern New Jersey and southern New York. Conducted field surveys for target Federal and State listed species identified by regulatory agencies, including the New Jersey Pinelands Commission, leading the botanical survey and plant identification efforts. Applied the timed-meander search technique for threatened and endangered plant species. A partial list of species surveyed for include: Swamp Pink, Knieskern's Beaked-rush, Spreading Globeflower, Sickle-leaved Golden Aster, Pine Barrens Reedgrass, Southern Twayblade, Little Ladies Tresses, Broom Crowberry, Yellow Asphodel, Curly Grass Fern, Fairy Wand, Hookers Orchid, Puttyroot, and Globe-flowered Ludwigia.



Avifaunal Studies

- Intensive avifaunal field and literature studies associated with the preparation and implementation of a Bird Deterrent Plan required by the Federal Aviation Administration for a proposed ash-bypass landfill in Onondaga County, NY.
- Wintering/migratory bird field studies for the proposed redevelopment of Flushing Airport by the NY City Economic Development Corporation (formerly Ports and Trade).
- Assessment of the vegetation and surrounding landscape characteristics of long-eared owl (*Asio otus*) winter roosts in central New Jersey.

Commercial/Industrial/Residential Studies

- Wetlands delineation, impact assessment and mitigation for more than 1000 commercial, industrial and residential development projects in NJ, NY and PA for use in site planning, U.S. Army Corps of Engineers 404 permit acquisition, and acquisition of State wetland permits.
- Preparation of municipal EIS's for major developments in New Jersey for use in planning board submissions. Major issues commonly include wetlands, endangered or threatened species, stormwater drainage and floodplains.
- Expert testimony on wetlands delineation, regulatory compliance and environmental impact analysis.

Special Environmental Studies

A wide range of ecological studies have been conducted for various private clients, the USEPA and other government agencies. Representative studies include:

- An evaluation of the impacts of peat extraction on the functions and values of peatlands in the Pocono Mountain area of Pennsylvania for the USEPA, Region III.
- Conducted field studies, prepared the report and presented the results of the study at a public meeting for the Advance Identification of Wetlands along Moshannon Creek near Philipsburg, PA for the USEPA, Region III.
- Conducted field studies and prepared a report for the Advance Identification of Wetlands in Silkman's Swamp near Scranton, PA for the USEPA, Region III.
- Prepared a sampling plan, established permanent quadrats and prepared a report for the first year in a NJDEP-mandated 20-year study of the effects of the removal of groundwater upon the existing plant communities of Budd Lake Bog due to the construction of sanitary sewerage



facilities. Budd Lake Bog is known to harbor several species of rare plants and is the northernmost occurrence of the Federally-threatened plant, Swamp Pink.

PUBLICATIONS:

Moskowitz, D.P. and T.M. Auffenorde. 2003. Bird Use of Two Simulated-Tree Cellular Towers in New Jersey. *Records of New Jersey Birds* 28(4): 88-91.

Moskowitz, D.P. and T.M. Auffenorde. 2000. Persistence of Skunk Cabbage (*Symplocarpus foetidus*) in a Drained Wetland. *Wetland Journal* 12(3): 23-29.

Moskowitz, D., T. Auffenorde and M. Kovacs. 1997. Vegetation and surrounding landscape characteristics of long-eared owl (*Asio otus*) winter roosts in central New Jersey. *Records of New Jersey Birds* 23(1): 2-6.

Auffenorde, T.M. and W.A. Wistendahl. 1985. The composition, structure and phenology of the vegetation at the O. E. Anderson Compass-Plant Prairie in unglaciated southeastern Ohio. *Ohio Journal of Science* 85:50-59.

Auffenorde, T. M. 1983. Demography and persistence of *Silphium laciniatum* at the O. E. Anderson Compass-Plant Prairie in southeastern Ohio. *Proceedings of the Eighth North American Prairie Conference*, R. Brewer (ed.), Department of Biology, Western Michigan University, p. 30-32.



KARIN TEKEL, PWS

EDUCATION:

*M.S. Hydrologic Sciences, June 2001
University of California, Davis, California*

*B.S. Environmental Science, May 1997
Rutgers University, New Brunswick, New Jersey*

*B.S. Natural Resource Management, May 1997
Rutgers University, New Brunswick, New Jersey*

AREAS OF EXPERTISE:

*Environmental Impact Statement
Regulatory Analysis and Compliance
Wetland Delineation and Permitting
Threatened and Endangered Species Surveys
Ecological Field Studies and Habitat Assessment
Geographic Information Systems (GIS)*

CERTIFICATIONS:

*Professional Wetland Scientist (Society of Wetland Scientists) #1621
Wetland Delineation Certificate – Rutgers University OCPE
NJDEP’s Flood Hazard Area Certification Program – Montclair State
University
Recognized Qualified Bog Turtle Surveyor in New Jersey (USFWS)
Recognized Qualified Bog Turtle Surveyor in Hudson River/
Housatonic Recovery Unit in New York, Massachusetts, and
Connecticut (USFWS)*

PROFESSIONAL ASSOCIATIONS:

Member of Society of Wetland Scientists since 2001

EXPERIENCE:

Ms. Tekel is an Assistant Vice President with EcolSciences, Inc. Her responsibilities include: the delineation of wetlands based on the Federal Manual for Identifying and Delineating Jurisdictional Wetlands, the preparation of applications for Letters of Interpretation, Transition Area Waivers, General Permits, and Individual Permits in accordance with the New Jersey Freshwater Wetlands Protection Act, Flood Hazard Area Control Act, Coastal Zone Management Rules, the implementation and documentation of wildlife and botanical habitat assessments and species surveys, and the use of Geographic Information Systems (GIS) in its capacity as an instrument of environmental analysis.

Prior to joining EcolSciences, Inc., Ms. Tekel was employed as a Research Assistant at the Water Resources Center of the University of California in conjunction with obtaining a Master of Science in Hydrologic Sciences. A summary of Ms. Tekel relevant experience includes:



Wetland Delineations

- Conducted wetland delineations using the Federal Manual three-parameter approach using vegetation, soils, and hydrology.
- Assisted in the wetland delineation on a 243-acre property in the Township of Lafayette, New Jersey.
- Led a wetland delineation on a 274-acre property in the Township of Andover, New Jersey.
- Assisted in the wetland delineation for a 1,510±-acre Duke Farms property in New Jersey.

Permitting

- Prepared and obtained New Jersey Department of Environmental Protection (NJDEP) Freshwater Wetlands and Waterfront Development Permits and U.S. Army Corps of Engineers (USACE) Nationwide Permits for the closure of three abandoned landfills and the construction on the landfill cap of over 1,000,000 square feet of state-of-the-art warehousing. The waterfront development permits ultimately authorized filling below mean high water for the landfill closure and the development of the project on the landfill cap.
- Prepared and obtained over 500 applications for Letters of Interpretation, General Permits, Transition Area Waivers, and Individual Permits pursuant to the NJDEP Freshwater Wetlands Protection Act.
- Prepared and obtained NJDEP Freshwater Wetlands and Coastal Area Facility Review Act (CAFRA) Permit for a 10-acre property in the City of Pleasantville, New Jersey. The project involves the construction of multi-family residential units divided on the site of the former Pleasantville High School, which has since been demolished. All of the required permits were obtained for the project.
- Prepared and obtained NJDEP Highlands Preservation Area Resource Area Determinations for two properties in the Township of Roxbury, New Jersey.
- Prepared and obtained Highlands Exemptions for proposed single-family residences in the Highlands Preservation Area.
- Prepared Joint Applications for USACE Section 404 Permit and Pennsylvania Water Obstruction and Encroachment Permit for sites in Pennsylvania.
- Prepared Wetlands Individual Permit application for a major residential development on ±100 acres of a former golf course spanning two towns in Bergen County, New Jersey. The development plan includes the remediation of pesticide contaminated soils through blending. Also prepared Flood Hazard Area Permit supporting documentation, which included information concerning the restoration of a stream corridor, and prepared municipal Environmental Impact Statements for submission to the two towns. The permits were obtained and the project has begun construction.



- Prepared Freshwater Wetlands and CAFRA permit applications, with supporting documentation, for the expansion of several sand mines on ±1,000 acres in Cumberland County, New Jersey. The permits were obtained, and the expansions are ongoing.
- Prepared Waterfront Development and Freshwater Wetlands permit applications, with supporting documentation, for the construction of a hotel on an existing shopping center site in Hudson County, New Jersey. Public access, threatened and endangered species, and stormwater management were of primary concern. The permits were obtained.
- Prepared and obtained Flood Hazard Area Verifications, Individual Permits, and Hardship Exceptions pursuant to the NJDEP Flood Hazard Area Control Act Rules. Evaluated properties for riparian zone widths.
- Evaluated properties for environmental sensitive areas and prepared Habitat Suitability Determinations for possible inclusion in the sewer service areas in New Jersey.

Corridor/Utility Experience

- Prepared necessary permitting for a petroleum product pipeline relocation underneath the Arthur Kill and Newark Bay and adjacent uplands and wetlands. Applications were submitted to the USACE, New York State Department of Environmental Conservation, New York State Department of State, New York State Office of General Services, NJDEP, and New Jersey Bureau of Tidelands. Issues addressed within the application support documents included impacts to essential fish habitat, freshwater and tidal wetlands, and navigation. All of the required permits were obtained for the project and the project was completed.
- Designed, directed, and participated in wetland delineations, ecological studies, regulatory assessment and regulatory compliance for several proposed underground oil pipelines, upgrade/replacement to electric transmission rights of ways (ROW), and sanitary sewer alignments, and their associated access roads throughout New Jersey.
- Managed complex electronic transmission ROW upgrade projects from planning to construction stages. This included the leading of large-scale field efforts including wetland delineations, threatened and endangered wildlife and plant assessments and surveys, vernal habitat assessments and surveys, and pre-construction monitoring. Worked with project teams to minimize disturbances to regulated areas, managed permitting efforts when needed, and negotiated with NJDEP to solve permitting concerns.
- Monitoring of construction and/or maintenance activities within environmentally sensitive areas along various overhead electric transmission and gas pipeline ROWs. Tasks include delineating and monitoring regulated activities within environmentally sensitive areas for the purposes of natural resources protection (wetlands, waters, and threatened and endangered species), soil and sediment erosion control, access road maintenance and repair, and ROW vegetation maintenance, including herbicide application, mowing, hand-cutting, and tree-cutting.



Wetland/Riparian Zone Mitigation

- Assisted in the preparation of a riparian zone and freshwater wetlands mitigation plan for remediation and subsequent redevelopment within regulated areas for a site in the Borough of Upper Saddle River, New Jersey.
- Conducted multi-year monitoring of remediated and restored wetlands and transition areas pursuant to an approved NJDEP Freshwater Wetlands General Permit Number 4 for a site in Hanover Township, New Jersey. The monitoring includes the evaluation of wetlands hydrology and hydric soils.
- Prepared a transition area restoration planting plan pursuant to a NJDEP Special Activity Waiver for a site in Denville Township, New Jersey.
- Conducted multi-year monitoring of wetlands habitat restoration project. This included the establishment and surveys of plant quadrats, supervision of planting of native shrubs and herbaceous species, and supervision of invasive species treatment and removal using herbicide and manual removal.

Municipal Environmental Impacts Statements

- Prepared over 100 Environmental Impact Statements and Assessments for residential, industrial, and commercial projects throughout New Jersey.
- Prepared an Environmental Impact Assessment for Virgin Spa at Natirar on a 90-acre property in the Borough of Peapack and Gladstone, New Jersey.
- Provided expert testimony concerning wetlands and flood hazard area issues at a municipal hearing for a preliminary and final site plan approval application for a site in Wayne Township, New Jersey.

Vernal Habitats

- Led over 200 vernal habitat assessments and surveys in accordance with survey protocols developed by the NJDEP. Pertinent information was gathered on hydrology, vegetation, observed reptile and amphibian species, and weather conditions.
- Assisted in the preparation of two vernal habitat creation plans, which involved the selection of suitable native vegetation and consultation with the project engineer concerning hydrologic budget, lining material, topographic contours, and construction methodology.

Avian Studies

- Led surveys for the State-endangered (breeding) Northern Goshawk (*Accipiter gentilis*), (breeding) Red-Shouldered Hawk (*Buteo lineatus*), State-threatened Barred Owl (*Strix varia*), special concern (breeding) Broad-Winged Hawk (*Buteo platypterus*), (breeding) Cooper's Hawk (*Accipiter cooperii*), and (breeding) Sharp-Shinned Hawk (*Accipiter striatus*) in New Jersey. Surveys included call surveys and nest/tree cavity searches.



- Led surveys for the State-endangered (breeding) Golden-Winged Warbler (*Vermivora chrysoptera*) in accordance with the Cornell Lab of Ornithology's Golden-Winged Warbler Atlas Project (1999-2005). Surveys included call surveys and habitat assessments.
- Led surveys for the State-threatened Red-Headed Woodpecker (*Melanerpes erythrocephalus*) in New Jersey. Surveys included call and cavity nest surveys.
- Assisted in grassland bird surveys for State-threatened Grasshopper Sparrow (*Ammodramus savannarum*), Savannah Sparrow (*Passerculus sandwichensis*), and Bobolink (*Dolichonyx oryzivorus*) in New Jersey.

Snake Studies

- Assisted in diurnal and nocturnal road cruising, grid searches, and drift fence trapping surveys for State-threatened Northern Pine Snake (*Pituophis melanoleucus melanoleucus*) for multiple properties in the Townships of Barnegat, Stafford, and Toms River New Jersey. The surveys were approved by the NJDEP and Pinelands Commission.
- Conducted radio telemetry for Northern Pine Snakes for multiple properties in the Townships of Stafford and Toms River, New Jersey.
- Assisted in grid searches and drift fence trapping for Northern Pine Snake and State-endangered Timber Rattlesnake (*Crotalus horridus*) on multiple properties in the Townships of Manchester and Stafford. The surveys were approved by the NJDEP and Pinelands Commission.
- Assisted in Timber Rattlesnake gestation surveys at two survey locations associated with an overhead electric transmission line in Morris and Sussex Counties, New Jersey.

Salamander Studies

- Conducted field surveys for the State-endangered Blue-Spotted Salamander (*Ambystoma laterale*) and State-Threatened Long-Tailed Salamander (*Eurycea longicauda longicauda*).
- Led Blue-Spotted Salamander surveys on multiple overhead electric transmission lines in Essex and Morris Counties, New Jersey.

Turtle Studies

- Led Phase I and Phase II Surveys for Federally-threatened and State-endangered Bog Turtle (*Glyptemys muhlenbergii*).
- Assisted in Phase III trapping and radio telemetry for Bog Turtle.
- Prepared over 25 Bog Turtle Phase II Survey Reports for many sites in New Jersey and York County, Pennsylvania.
- Prepared Bog Turtle Phase I Survey Reports for Pocono Manor Inn and Resort and Transcontinental Gas Pipeline Corporation ROW in Pennsylvania, and Tennessee Gas Pipeline ROW in New Jersey.



- Led Bog Turtle Phase I and Phase II surveys on multiple overhead electric transmission line upgrade projects or for routine maintenance for multiple sites in New Jersey.
- Conducted surveys for the State-threatened Wood Turtle (*Clemmys insculpta*) for several sites throughout New Jersey.
- Conducted a long-term Wood Turtle survey that involves radio telemetry of adults and hatchlings, hibernacula surveys, nesting surveys, and nest protection.

Rare Plant Studies

- Conducted several surveys for rare plants including the Federally-threatened and State-endangered Small Whorled Pogonia (*Isotria medeoloides*), Swamp Pink (*Helonias bullata*), and Knieskern's Beaked-Rush (*Rhynchospora knieskerni*), State-endangered Willow-Leaf Aster (*Symphyotrichum praealtum* var. *praealtum*), and Pinelands Commission-listed Little Ladies' Tresses (*Spiranthes tuberosa*).

University Research Studies

- Collected field observational data on individual wetland plant species pertaining to nutrient resorption.
- Conducted vegetation surveys for percent cover, biomass estimations, and community composition for inland Californian freshwater marshes.
- Performed streamflow measurements, groundwater, and infiltration analyses.
- Conducted mesocosm experiments to assess the response of selected wetland plant species (native and introduced) to nutrient enrichment and two different water levels.

PUBLICATIONS:

Rejmánková, Eliska and Karin Tekel. Start July 1, 1998. Technical Completion Report. Life History Strategies of California Native Plants: Implications for Wetland Creation and Restoration. University of California, Davis, Center for Water Resources. http://www.waterresources.ucr.edu/wrc/publications/rejmankova_W-907.pdf

Tekel, Karin Jean. 2001. Thesis (M.S.). The relationship between water quality and plant functional groups in freshwater wetlands. University of California, Davis.



DANIEL BRILL

- EDUCATION:** *B.A., 1996 – Environmental Studies
Richard Stockton College
Galloway, New Jersey*
- EMPLOYMENT:** *EcolSciences, Inc. (2001-present)*
- AREAS OF EXPERTISE:** *Threatened & Endangered Species Habitat Assessments and Surveys
Geographic Information Systems*
- PROFESSIONAL CERTIFICATIONS:** *Rutgers Cook College Office of Continuing Professional Education
- Professional Certificate Program in Geomatics
Birder Certification Online – Certification Level 3, Bird Conservation
Regions 28, 29 & 30 (www.birdercertification.org/)*

EXPERIENCE:

Mr. Brill is presently a Senior Environmental Scientist with EcolSciences, Inc. with over 17 years of experience with the company. His particular specialties are in threatened and endangered species studies and the use of Geographic Information Systems (GIS) software as an instrument of environmental analysis.

Mr. Brill has been a birder for over 25 years with 360 bird species observed in New Jersey. He is knowledgeable in their habitats, distribution, and seasonal occurrence. With regards to GIS, Mr. Brill is well-versed in the methodology and species models used to assemble the NJDEP Landscape Project critical habitat map from Versions 1.0 through 3.3.

Prior to his employment with EcolSciences, Mr. Brill was an educator at the Cattus Island Cooper Environmental Center with Ocean County Parks and Recreation and has volunteered with the New Jersey Department of Environmental Protection and New Jersey Audubon Society.

Selected Bird Studies

Contribute to the design, implementation, documentation, and analysis of habitat evaluations and surveys of endangered, threatened, special concern, and other birds. Such studies include:

- Lead Bald Eagle monitor 2012-2014 on a multi-year Public Service Electric & Gas (PSE&G) overhead transmission line right-of-way (ROW) construction project in northern New Jersey in accordance with United States Fish and Wildlife Service (USFWS) permit conditions. Three eagle territories in Morris County were in close proximity to construction activities that included intense helicopter use.
- Bald Eagle monitor 2014-2015 at Lake Tappan in Rockland County, New York. A proposed helicopter pad at a corporate facility would be located 1,200 feet from an active nest. EcolSciences prepared a Habitat Assessment Report concluding that measures such as minimizing flights for emergency purposes only and maintaining a 1,000-foot flight buffer from the nest at all times would likely not result in a “take” of Bald Eagle. Therefore, no permit was required from the New York Department of Environmental Conservation (NYSDEC) pursuant to the New York State Endangered Species Act.



EcolSciences, Inc.
Environmental Management & Regulatory Compliance

- Bald Eagle monitor 2014-2019 of a pair that nested on the site of a previously approved residential development at Lake Hopatcong. A take permit was obtained from USFWS. There was no lost productivity from this eagle pair as a result of the development, with young successfully fledged each year from both the on-site nest (even during land clearing and construction activities) and later a second nest less than one half mile away.
- Investigated a suspected alternate Bald Eagle nest located immediately adjacent to the site of a proposed residential development in Schuylkill Township, Pennsylvania. The nest was likely attributable to an eagle pair with an active nest located on the opposite side of a reservoir and in close proximity to an occupied office building. EcolSciences successfully convinced USFWS that the local eagle pair are acclimated to nearby human activity and that the proposed development would not negatively impact the potential future usage of the alternate nest nor the reservoir as foraging habitat. As such, the proposed development did not require an eagle take permit.
- Avian monitor April – July 2014 at a ROW construction project on the Raritan Estuary in Middlesex County as required in a NJDEP Waterfront Development Permit. Work activities approached multiple Osprey nests. Several other State-listed birds were observed in the work area including Black-crowned Night-heron, American Bittern, Bald Eagle, Northern Harrier, Least Tern, and Black Skimmer.
- Breeding bird survey of two dredge disposal areas totaling approximately 500 acres along the Delaware River. The survey was conducted to address a special condition of a NJ Department of Environmental Protection (NJDEP) issued Waterfront Development Permit limiting activities including the placement of dredged material inside the disposal areas March 15 through July 31 to avoid and minimize impacts to nesting birds and prevent impacts to nesting Bald Eagles. A small fraction of the 94 bird species identified during the survey likely nested within the disposal areas. Based on the survey results and site conditions within the disposal areas, EcolSciences determined a plan could be developed to eliminate the timing restrictions.
- Helped conduct a bird/radio tower collision study at five 300 to 400-foot high towers in the New Jersey Meadowlands during the spring and fall migrations in 2004. A total of 108 bird species were observed and feathers or other parts of twelve bird species were located beneath the towers or guy wires.
- Conducted a grassland bird survey on over 500 acres of hayfields surrounding a corporate facility in Hunterdon County. Three obligate grassland birds (Savannah Sparrow, Grasshopper Sparrow, and Bobolink) were found nesting here.
- Other avian studies of raptors such as Red-shouldered Hawk, Cooper’s hawk, and Barred Owl; grassland species including Upland Sandpiper, Horned Lark, and Vesper Sparrow; wading birds like Black-crowned Night-heron, Yellow-crowned Night-heron, and Great Blue Heron; secretive marsh birds such as Pied-billed Grebe, Virginia Rail, Sora, Common Gallinule, Least Bittern, and American Bittern; and other birds such as Red-headed Woodpecker and Golden-winged Warbler.

Geographic Information Systems

Almost all projects have a geographic component that can be expressed via maps. Geographic Information Systems software has been used to:

- Quickly determine and effectively communicate potential environmental constraints on a given site including critical wildlife habitat.



- Plot results of wildlife species surveys, establish and quantify critical nesting and foraging habitat according to peer-reviewed models, and develop species management strategies.
- Analyze land use/land cover change over time in areas with records of threatened and endangered birds such as Bald Eagle, Black-crowned Night-heron, Barred Owl, and Red-headed Woodpecker.

Other Applicable Experience

- Co-authored an Avian Survey Protocol for the PSE&G overhead transmission ROWs. The objective of the protocols is to provide a consistent framework in which to survey and evaluate habitat for birds addressed in the Utility ROW No Harm Best Management Practices (BMPs) developed by the NJ Endangered and Nongame Species Program (ENSP) ahead of scheduled vegetation maintenance activities. Data collected will be reviewed by PSE&G environmental managers, who will authorize relief from seasonal restrictions listed in the BMPs where warranted.
- Participated in a panel assembled by ENSP to assess or reassess the status of over 170 bird species occurring in New Jersey. This was accomplished via the Delphi Technique that entailed five rounds of voting and considered materials provided by ENSP and comments and expert opinions of panel members.
- Presented at the Endangered and Nongame Species Advisory Committee meeting September 21, 2010 as part of a gathering of various users of the NJDEP Landscape Project critical wildlife habitat map to discuss its application, strengths, limitations, and suggested improvements.
- Assisted the annual Sandy Hook Hawk Watch for New Jersey Audubon Society in spring of 2000 and 2001. Fifteen or more species of diurnal raptors can be expected at this location.
- Project assistance for Neotropical Passerine Critical Areas: Pinelands Survey (Landscape Project for Protection of Rare Species). The objective of this 1999 NJDEP-sponsored study was to determine the distribution, abundance, and habitat characteristics of neotropical birds and other observed species.
- Participation in the New Jersey Breeding Bird Atlas with data contributed towards *Birds of New Jersey* (Walsh, Elia, Kane, and Halliwell, 1999) published by the New Jersey Audubon Society. Work involved identifying and recording all breeding bird species and observed behaviors in predetermined survey blocks.
- Present volunteer monitor of a nesting pair of State-endangered Peregrine Falcons in New Brunswick.
- Submitted multiple ENSP Rare Wildlife Sighting Report forms documenting observations of endangered, threatened, and special concern birds.
- Frequent contributor to eBird, submitting multiple rare and unusual local records.
- Present coordinator of the Assunpink Christmas Bird Count (CBC). Participant in other CBCs.



JENNIFER R. POTRIKUS, PWS

EDUCATION: *M.S., 2015 – Conservation Biology
SUNY College of Environmental Sciences and Forestry, Syracuse, N.Y.
Thesis: Ecological and Genetic Assessments of the Invasive Potential of
Actinidia Arguta (Hardy Kiwi) in the Northeast United States*

*B.A., 2012 – Biological Science
Harpur College of Arts and Sciences,
Binghamton University, Binghamton, N.Y.*

**AREAS OF
EXPERTISE:**

*Regulatory Assessments and Constraints Analysis
Wetland Delineations & Regulatory Review
Threatened & Endangered Species Surveys*

**PROFESSIONAL
CERTIFICATIONS:**

*Professional Wetland Scientist (PWS) #3423 – Society of Wetland Scientists
Wetland Delineation Certificate – Rutgers University OCPE
OSHA 1910.120 40-hour HAZWOPER Training*

**PROFESSIONAL
ASSOCIATIONS:**

Member of the Society of Wetland Scientists

EXPERIENCE:

Ms. Potrikus is an Environmental Scientist with EcolSciences, Inc. and has more than 6 years of environmental experience. She has professional experience in wetland and stream delineations; threatened & endangered species surveys; environmental permitting, planning, and monitoring; and constraints analyses with a focus on renewable energy, electric generation, and natural gas projects. Additional experience includes construction oversight to ensure compliance with permit conditions, preparation of permit applications and GIS mapping. Ms. Potrikus has extensive experience with power utility clients and has expertise in local and state regulations in NY and NJ as well as federal regulations as they apply to electric generation and transmission projects.

Prior to joining EcolSciences, Inc., Ms. Potrikus was the technical project manager and point of contact for a utility client at an engineering and environmental consulting firm where she was responsible for assisting in the growth of the Siting, Licensing, and Permitting program. As a technical project manager, Ms. Potrikus was responsible for the development of ecology-related project scopes, schedules, budgets, and overall project direction to ensure successful environmental compliance. A summary of Ms. Potrikus' relevant experience includes:



EcolSciences, Inc.
Environmental Management and Regulatory Compliance

Wetland Delineations and Regulatory Compliance

- Conducted numerous wetland delineations based on the Federal Manual three-parameter approach using indicators of hydrophytic vegetation, hydric soils, and wetland hydrology.
- Preparation of Environmental Impact Statements, Letters of Interpretation, Transition Area Waivers, General / Individual Permits, CAFRA / Waterfront Development Permits, as various U.S. Army Corps permits for both development and utility projects throughout NJ.
- Preparation of Article VII and Article 10 applications for major utility projects, Freshwater Wetlands Permit (Article 24) and Protection of Waters Permit (Article 15) applications, and State Environmental Quality Review (SEQR) compliance for both development and utility projects throughout NY.

Threatened and Endangered Wildlife Species

- Performs avian habitat evaluations and/or species presence/absence surveys for the New Jersey State-threatened barred owl (*Strix varia*) and the New Jersey State-endangered, red-shouldered hawk (*Buteo lineatus*) along utility rights-of-way. Avian surveys included performing call surveys, nest searches, and assessing suitability of habitat for nesting and/or foraging.
- Conducted day and night surveys of vernal pools for an annual monitoring effort following installation of an underground gas line. Assessed for the presence of vernal-dependent species.

Construction/ROW Maintenance Monitoring

- Monitoring of construction and/or maintenance activities within environmentally sensitive areas along various overhead electric line ROWs to ensure compliance with permit conditions.
- Monitoring regulated activities within environmentally sensitive areas for the purposes of natural resources protection (wetlands, waters, and threatened and endangered species), soil and sediment erosion control, access road maintenance & repair, and ROW vegetation maintenance, including spraying, mowing, hand-cutting, and tree-cutting.

Geographic Information Systems

- Evaluates potential environmental constraints using land use/land cover, wetlands, vernal habitat, riparian zones, flood hazard area information, and NJDEP Landscape Project mapping for both development and utility projects.

