PREPARED FOR:

Borough of Bergenfield
198 North Washington Avenue
Bergenfield, NJ 07621

PREPARED BY:

T&M Associates
11 Tindall Road
Middletown, NJ 07748

Environmental Assessment

For Green Acres Program
Park Development Application

PAL Field Lighting Improvement Project Block 187 Lot 63 Borough of Bergenfield Bergen County, NJ

T&M PROJECT NO. BGFD-00027
February 2023

Ericka Naklicki, PWS
Group Manager

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Environmental Impact Assessment

Project Description

On behalf of the Borough of Bergenfield, T&M Associates is submitting the enclosed Environmental Impact Assessment pursuant to the Green Acres Program for Park Development grant application requirements for lighting improvements to Bergenfield's Police Athletic League (PAL) sports facility located at 90 Rivera Way, in the Borough of Bergenfield, Bergen County, New Jersey. The site is designated as Block 187, Lot 63. Specifically, the proposed project involves removing the 15 existing lighting poles and installing improved lighting structures. The location of the lighting poles can be viewed on the attached concept plan where they are located around the baseball field perimeters.

The objective of the project is to enhance the lighting capability within the PAL facility, which has not been upgraded in several years. Since the existing lighting fixtures are being removed and new ones installed, there is limited environmental impact to natural resources. It is important to note that the site has already been disturbed for the initial sports complex development and has been in use since before 2000's. There are currently no phases proposed for after the lighting improvements.

On January 24, 2023, T&M Associates conducted a field investigation to assess the overall site and any environmentally sensitive areas. Potential wetland habitat and site vegetation were investigated on site. Color photos can be viewed in the Attachment B. The investigation concluded that no wetlands are present on site and site vegetation is listed below. As such, the project will result in no impacts to environmentally sensitive areas.

Description of the Environment

Adjacent Land Uses

The PAL facility currently has 4 baseball/softball fields, bathrooms, a snack stand and an associated parking lot. The area is an urban land development surrounded by deciduous forest and beyond that is completely surrounded by residential housing on all sides. Metzler Brook, a FW2-NT/SE2 waterway, runs through the middle portion of the site. The site is extremely popular and sees seasonal peaks in the Spring-Fall.

Vegetation & Wildlife

Vegetation within the facility consists of a forested canopy around the property edges and some low-lying vegetation along Metzler Brook. The canopy consists primarily of Pin oak (*Quercus palustris*), Red Maple (*Acer rubrum*), Sweet Gum (*Liquidambar styraciflua*), Southern Red Oak (*Quercus falcata*), Silver Maple (*Acer saccharinum*), and Northern Red Oak (*Quercus rubra*). The understory consists primarily of Posion Ivy (*Toxicodendron radicans*), Side-oats Grama (*Bouteloua curtipendula*), Common Mugwort (*Artemisia vulgaris*), Wild Garlic (*Alliaria petiolate*), and Japanese Knotweed (*Reynoutria japonica*).

There are no threatened or endangered species or critical habitats listed onsite according to NJDEP Geoweb. The site is within the Piedmont Plans Landscape Region Area which depicts rank 1 species-based habitat for riparian corridor present along Metzler Brook. There are no wetlands or vernal pool habitat present on site.

Geology, Topography and Soils

The PAL facility is underlain by the Brunswick aquifer and is within the Hackensack and Pascack groundwater recharge areas. The bedrock geology consists of the Passaic Formation Sandstone and Siltstone facies (JTrps) which is heavily sandstone and siltstone.

The surface geology of the site is Rahway till (Qwtr) which is clayey silt to sandy silt with some to many pebbles and cobbles and few boulders; reddish brown, reddish yellow, yellowish brown, brown. This layer is as much as 100 feet thick, but generally less than 40 feet thick and was deposited directly from glacial ice during the late Wisconsinian glaciation.

The northern half of the site is classified as Udorthents (Udbu), organic substratum-Urban land complex, 0 to 8 percent slopes. The lower half of the site is classified as Dunellen loam (DuoB), 3 to 8 percent slopes. A small portion of the southeast corner of the site is classified as Udorthents (Udyu), wet substratum-Urban land complex.

Water Resources/Hydrology

As mentioned above, Metzler Brook runs along the northern half of the PAL facility. Metzler Brook is a freshwater non-trout saline estuarine 2. The entire area is within the Hackensack, Hudson and Pascack watershed area. The area is also within the Hacksnsack R (below/incl Hirschfield Bk) and Overpeck Creek sub-watershed. It should be noted there are no category 1 waters within the sub-watershed.

A portion of the site around Metzler's Brook is within a FEMA Flood Zone X, as verified on the flood insurance rate map for Bergen County Panel Number 211, Map Number 34003C0211H (Revised August 28, 2019). This zone has a 0.2% annual chance of flood hazard. All of the lighting fixtures will be stationed above the flood hazard elevation and in compliance with any Flood Hazard Regulations.

Historic/Archeological Resources

According to NJDEP Digital GIS Data, there are no historic properties within the site or surrounding area. There are also no historic districts or archeological historic grids associated with the site area.

Transportation/Access to Site

The PAL facility is most easily accessed by Rivera Way which is a side street off of Bogert Place. There is a parking lot within the facility and walking paths throughout for foot access. The NJ Transit Bus Line 166 runs below on E Main Street, which also offers public transportation close by.

Environmental Impact Analysis

Due to the nature of the site being previous disturbed for the construction of the PAL facility and the objective of replacing lighting fixtures, no major impacts are expected for the project. There are no negatively affected resources as a result of the proposed project and no significant impacts to any natural resources. A positive impact is improved lighting which will benefit users of the facility with improved safety, energy efficiency, reduced maintenance cost, and better lighting performance.

Adverse impacts to off-site properties are not anticipated as a result of this project. There will be no trees removed or vegetation disturbed for project completion. There is also no proposed cut of existing soil onsite or fill with new soil material.

Affected Resources and the Significance of Each Impact

The Bergenfield PAL sports facility is a major part of outdoor recreation for the Bergenfield Community. As stated on their website "The Bergenfield Police Athletic League is a volunteer run, non-profit community organization. This non-profit corporation is organized to foster and encourage in the youth of the community a spirit of teamwork, cooperation and good sportsmanship through athletic participation. Sports programs offered through the Bergenfield PAL are: Softball, Soccer, Indoor Soccer, Basketball, T-Ball, and Baseball."

Short-term and Long-term Project Impacts
There are no negative long-term impacts associated with the project. Installing new lighting structures are renovations that are necessary to ensure proper lighting functionality within the sports complex. As such, the lighting improvements will help the facility provide the best quality of lighting for teams and provide enhanced vision during darker hours. Other main benefits include energy efficiency, energy and maintenance savings as well as upkeep, and reducing electricity demand.

Anticipated Increase in Recreation and Overall Use
Overtime, the PAL facility is expected to see increased use, as NJ trends are on the rise for population and outdoor recreation. With an increasing demand for outdoor recreation and sporting facilities, the PAL complex will continue to be utilized by the growing public within Bergenfield and local municipalities. As such, it is inherent that the structures on site are updated periodically to ensure safety standards are met and prolonged use of the facility.

The PAL facility is largely enjoyed by Bergenfield residents. The main mission of the facility is being dedicated to providing quality sports programs to the children of Bergenfield and bringing the benefits of organized sports to the children.

Adjacent Environmental Features Affected
Metzler Brook, the associated riparian corridor, and the deciduous forest area are all adjacent environmental features to the project site. However, due to the previously disturbed nature of the site there are no anticipated impacts to these environmental features.

Permits Required for Project
There are no anticipated permits required for the proposed project.

Natural Heritage Data Request Form
The new light structures are situated on a previously developed site. There are no T&E species present on site according to NJDEP Digital GIS Data (Geoweb). As such, the proposed project is not anticipated to impact any threatened and endangered species and a Natural Heritage Data Request form was not required.

If/How the Project may be Impacted by Sea Level Rise
The project is not expected to be impacted by sea level rise. The project is not within a coastal zone area and there are no Tidelands Claim lines. Flooding and severe storm events are becoming more frequent in NJ and as such, the PAL facility may experience increased flooding conditions, especially around Metzler Brook. Around the Brook is a FEMA X flood zone, however, the lighting fixtures are high enough above ground, and buried low enough below ground to be structurally secure in case of a storm event and or flooding. .

Alternatives & Mitigation Measures
There are no proposed alternatives for the proposed project, as the lighting fixtures currently on site are outdated and inefficient. As such, the only alternative is a “no build” which would not address the need for improved lighting within the sports facility. As such, the proposed project is encouraged by both the Borough and the public.

Conclusion

Based on a review of the Green Acres Program for Park Development grant application requirements, the proposed project complies with regulations pertaining to lighting renovations at the PAL facility. As with

Attachment A: **Site Location Map**
USGS Topo Map
Soils Map
Tax Map
Landscape Map
FEMA Map

11 Tindall Road
Middletown, NJ 07748-2792
Phone: 732-671-6400
Fax: 732-671-7365

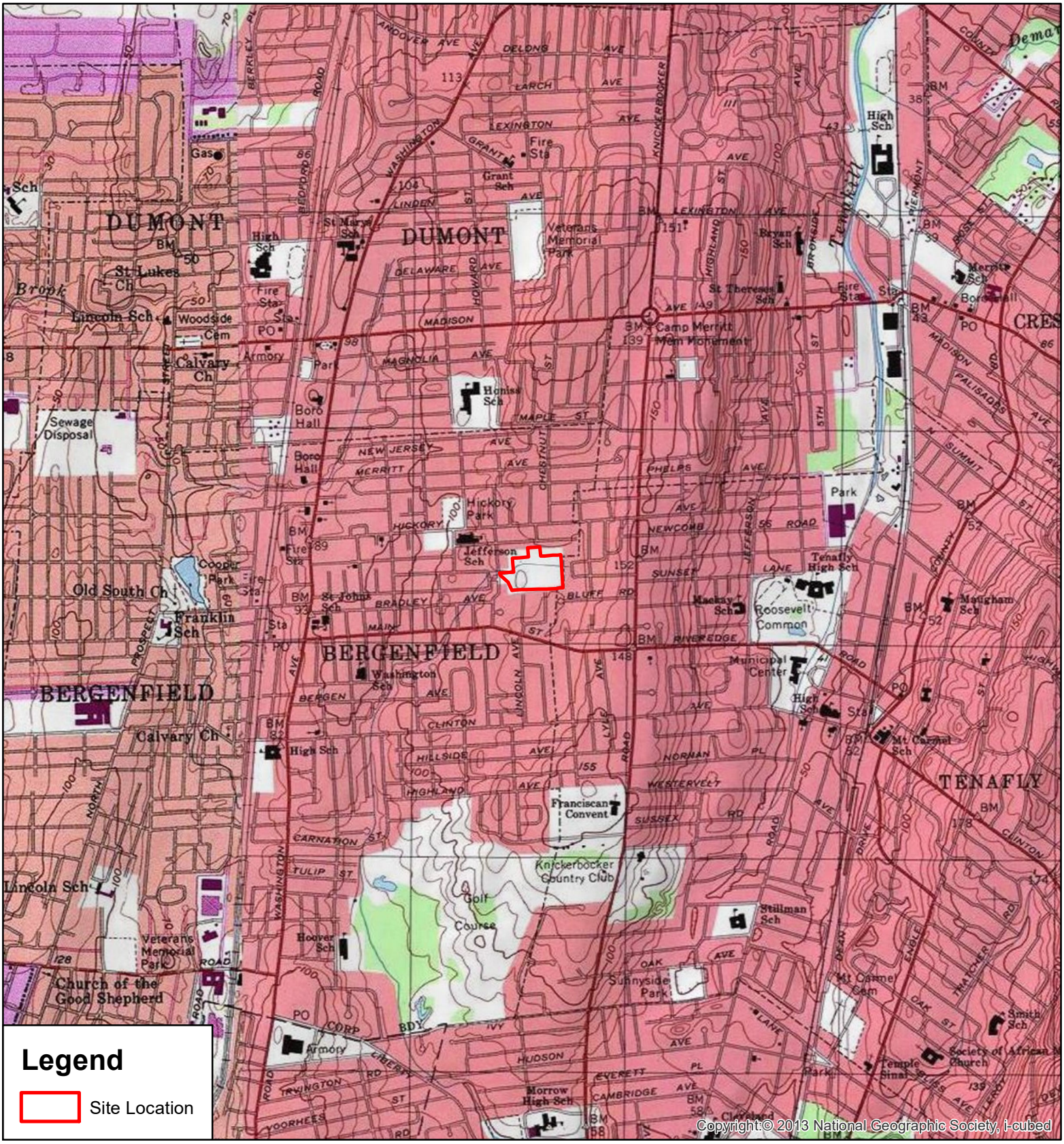
0 75 150 300 Feet

N

Site Location Map
PAL Fields Lighting Project
Block 187, Lot 63
Borough of Bergenfield
Bergen County, New Jersey

Prepared by: MNB 1/20/23
Source: USGS Topographic Maps, NW New Brunswick Quadrangle Map
File Path: G:\Projects\BGFD\00027\Permits\NJDEP\GREEN ACRES EIS\GIS\Site Location Map.mxd

NOTE: 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.



11 Tindall Road
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USGS Topo Map
PAL Fields Lighting Project
Block 187, Lot 63
Borough of Bergenfield
Bergen County, New Jersey

Prepared by: MNB 1/20/23
Source: USGS Topographic Maps, NW New Brunswick Quadrangle Map
File Path: G:\Projects\BGFD\00027\Permits\NJDEP\EIS\GIS\USGS Topo Map.mxd

NOTE: 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.

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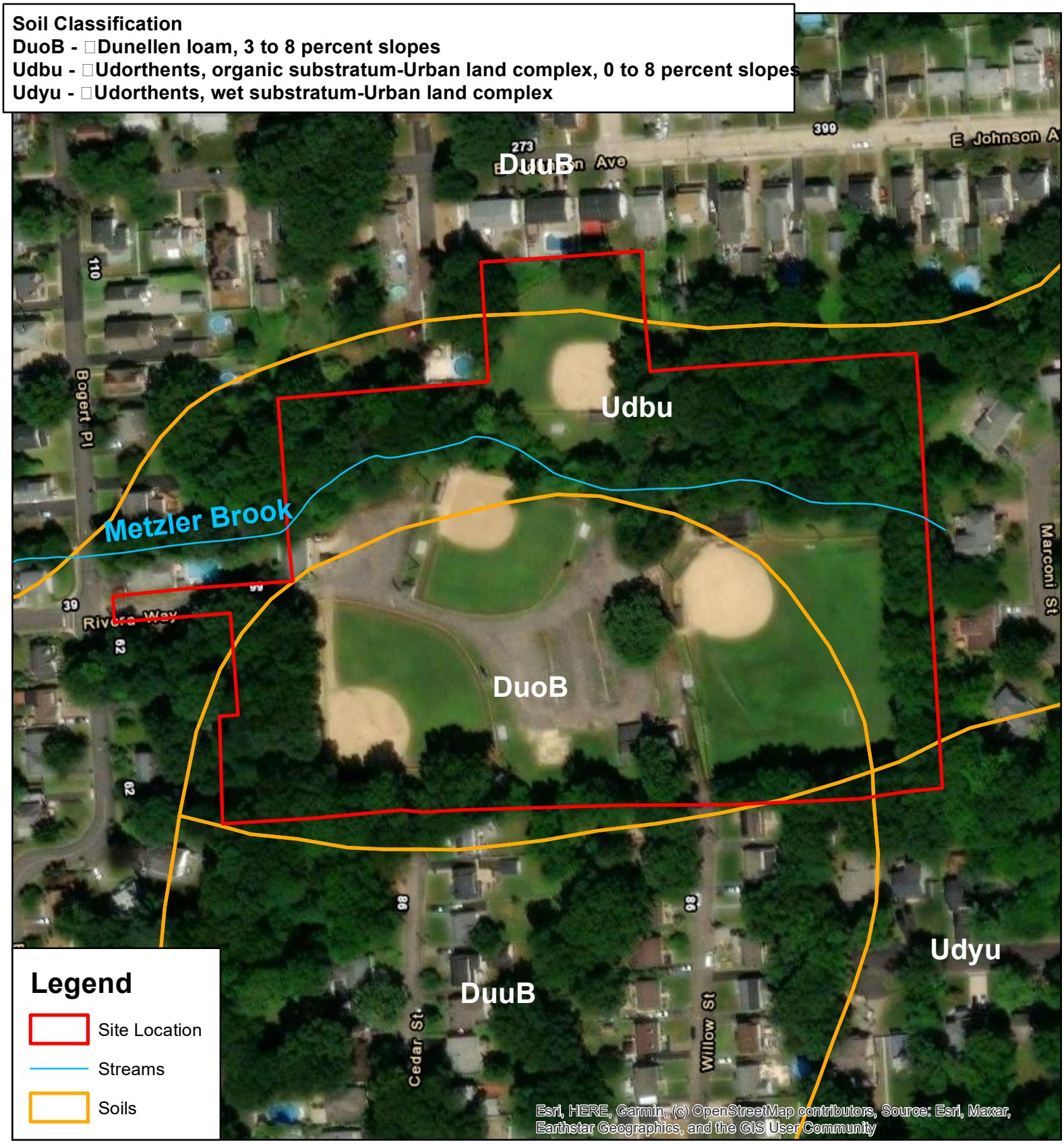
Tax Map
PAL Fields Lighting Project
Block 187, Lot 63
Borough of Bergenfield
Bergen County, New Jersey

Prepared by: MNB 1/20/23
Source: USGS Topographic Maps, NW New Brunswick Quadrangle Map
File Path: G:\Projects\BGFD\00027\Permits\NJDEP\GREEN ACRES EIS\GIS\Tax Map.mxd

NOTE: 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.

Soil Classification
DuoB - Dunellen loam, 3 to 8 percent slopes
Udbu - Udorthents, organic substratum-Urban land complex, 0 to 8 percent slopes
Udyu - Udorthents, wet substratum-Urban land complex



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Soils Map
PAL Fields Lighting Project
Block 187, Lot 63
Borough of Bergenfield
Bergen County, New Jersey

Prepared by: MNB 1/20/23
Source: USGS Topographic Maps, NW New Brunswick Quadrangle Map
File Path: G:\Projects\BGFD\00027\Permits\NJDEP\GREEN ACRES EIS\GIS\Soils.mxd

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Legend

- Site Location
- Rank 1 - Habitat specific requirements
- Streams

11 Tindall Road
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0 75 150 300 Feet

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Piedmont Plains Landscape Map
PAL Fields Lighting Project
Block 187, Lot 63
Borough of Bergenfield
Bergen County, New Jersey

Prepared by: MNB 1/20/23
Source: USGS Topographic Maps, NW New Brunswick Quadrangle Map
File Path: G:\Projects\BGFD\00027\Permits\NJDEP\GREEN ACRES EIS\GIS\Piedmont_Landscape.mxd

NOTE: 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.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was New Jersey State Plane 2900 zone. The **horizontal datum** was NAD 83. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by the State of New Jersey Office of Information Technology. This information was derived from digital orthophotos produced at a scale of 1:2400 with a 1-foot pixel resolution from photography dated 2012.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

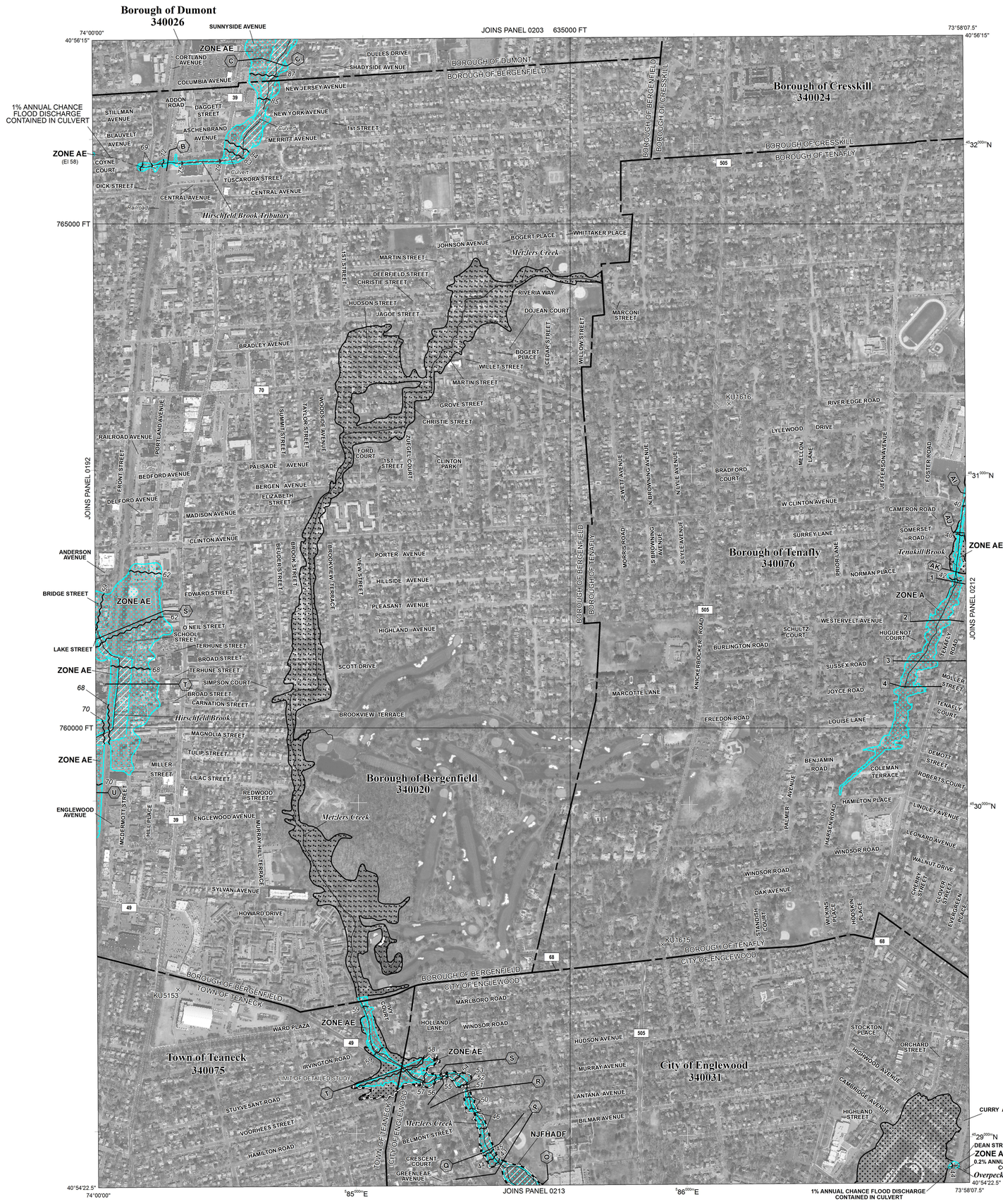
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the Map Service Center (MSC) website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have questions about this map, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at https://www.fema.gov/national-flood-insurance-program.

This digital FIRM was produced through a unique cooperative partnership between the New Jersey Department of Environmental Protection (NJDEP) and FEMA. As part of the effort, NJDEP has joined in a Cooperative Technical Partnership agreement to produce and maintain FEMA's digital FIRMS.

NJFHADF is equal to the 1-percent-annual chance flood plus an additional 25% in flow, and not to exceed the 0.2-percent-annual chance flood. NJFHADF boundary is to regulate disturbance to the land and vegetation within flood hazard area of a water body. This regulation is set forth by the State of New Jersey Flood Hazard Area Control Act Rules N.J.A.C. 7:13, and is administered by New Jersey Department of Environmental Protection (NJDEP).



LEGEND

▨	SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

▨	FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

⁙	OTHER FLOOD AREAS
ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
☐	OTHER AREAS
ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.
▧	COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
▧	OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

───	1% annual chance floodplain boundary
═■═■═	New Jersey Flood Hazard Area Design Flood (NJFHADF)
───	0.2% annual chance floodplain boundary
— — —	Floodway boundary
— — —	Zone D boundary
• • • • •	CBRS and OPA boundary
▨	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
▲──▲──▲	Limit of Moderate Wave Action
~~ 513 ~~~	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

Ⓐ────Ⓐ	Cross section line
3────3	Limited detail cross section line
㉓- - - -㉓	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
²⁴76⁰⁰⁰ᵐN	1000-meter Universal Transverse Mercator grid values, zone 18
600000 FT	5000-foot grid values: New Jersey State Plane coordinate system (FIPSZONE 2900), Transverse Mercator projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
● M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
September 20, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 30, 2005, August 28, 2019 - For Reason of Revision See Notice to Users in Flood Insurance Study Report

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

N

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0211H

FIRM
FLOOD INSURANCE RATE MAP

BERGEN COUNTY,
NEW JERSEY
(ALL JURISDICTIONS)

PANEL 211 OF 332

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BERGENFIELD, BOROUGH OF	340020	0211	H
CRESSKILL, BOROUGH OF	340024	0211	H
DUMONT, BOROUGH OF	340026	0211	H
ENGLEWOOD, CITY OF	340031	0211	H
TEANECK, TOWNSHIP OF	340075	0211	H
TENAFLY, BOROUGH OF	340076	0211	H

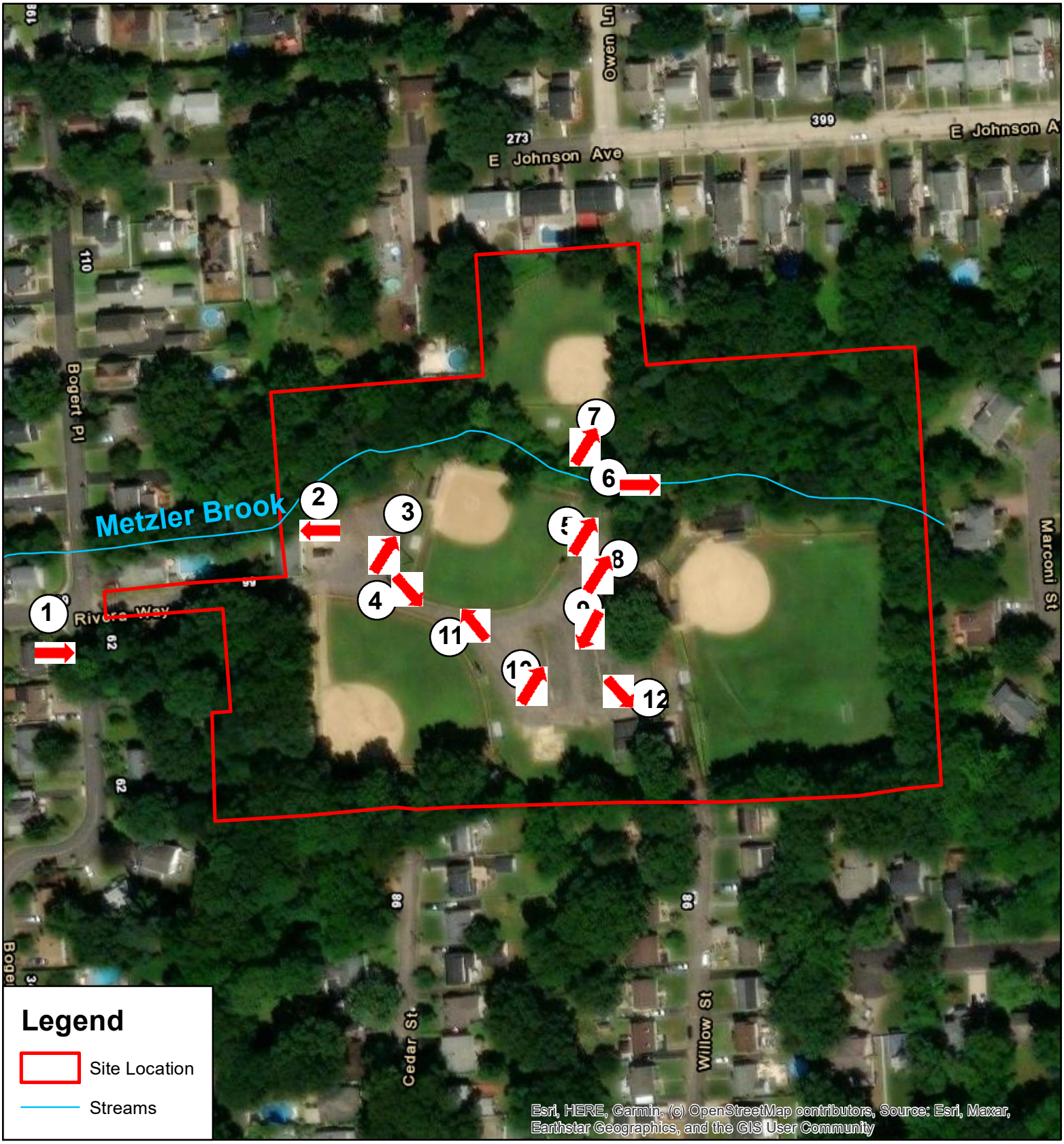
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
34003C0211H

MAP REVISED
AUGUST 28, 2019

Federal Emergency Management Agency

Attachment B: Color Photographs



11 Tindall Road
Middletown, NJ 07748-2792
Phone: 732-671-6400
Fax: 732-671-7365

0 75 150 300 Feet

N

Photo Location Map
PAL Fields Lighting Project
Block 187, Lot 63
Borough of Bergenfield
Bergen County, New Jersey

Prepared by: MNB 1/25/23
Source: USGS Topographic Maps, NW New Brunswick Quadrangle Map
File Path: G:\Projects\BGFD\00027\Permits\NJDEP\GREEN ACRES EIS\GIS\Photo Location.mxd

NOTE: 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.

Color Photos via Photo Location Map

1

2

3

4

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12

Attachment C: Qualifications of Preparer

Ericka**NAKLICKI**, PWS

Group Manager

Education

University of Vermont, BS Environmental Studies, 2001

Rutgers University, Wetlands Delineator Certification

Rutgers University, Threatened and Endangered Species in NJ

Rutgers University, Winter Vegetation Identification

Rutgers University, NJDEP Freshwater Wetlands Regulations Short Course

Rutgers University, NJDEP Coastal Wetlands Regulations Short Course

Professional Registrations / Affiliations

Professional Wetland Scientist (PWS) Certification #2938

Society of Women Environmental Professionals, NJ/Philadelphia Chapter

Society of Wetland Scientists (SWS)

40-Hour OSHA Hazwoper Certification

8-Hour OSHA Permit Required Confined Spaces

Years in the Industry

21

Areas of Expertise

Wetland Delineations, Geographic Information Systems (GIS), NJDEP Land Use Regulations, PADEP Wetland Regulations, USACE Permit Requirements, Pinelands Regulations, Public Outreach

Summary of Qualifications

Ms. Naklicki has 21 years of experience in the field of environmental consulting. She is certified as a Professional Wetland Scientist (PWS) by the Society of Wetland Scientists. Her areas of expertise include wetland delineations as well as the preparation of applications and final reports to the regulatory agencies. Her project duties include obtaining Freshwater and Coastal Wetland Permits, Letters of Interpretation, CAFRA and Waterfront Development Permits, Pinelands approvals and US Army Corps of Engineers permits. Ms. Naklicki also has experience with the Pennsylvania Department of Environmental Protection (PADEP) wetland permits. Additionally, she has written numerous Environmental Impact Statements and Baseline Ecological Evaluations that relate to a variety of projects.

In addition, she is experienced in the preparation of Geographical Information System (GIS) maps for various project types including wetlands, floodplains, threatened and endangered species, aquifer and land use maps. She also has experience using Global Positioning System (GPS) surveying equipment.

Ms. Naklicki has experience in vegetation analysis, habitat assessments and wetlands and stream analysis. She has performed numerous wetland delineations ranging from small to large properties up to 450 acres. She has conducted natural resource inventories and threatened and endangered species surveys for various projects. In addition, she has performed numerous tree surveys for various developments ranging from 2 to 300 acres. Ms. Naklicki uses Trimble® GPS while in the field to gather her data and locate the wetland flag locations. After the data is collected she works with the project engineers to prepare Permit Plans to demonstrate project compliance with the local, state, and federal land use regulations.

Ms. Naklicki has helped coordinate and attend numerous public information sessions and public hearings for several large projects including the NJTA's GSP Widening from Milepost 30 to 80 and the Carteret Ferry Terminal Project.

She is also experienced with species monitoring including Bald Eagle and Osprey. Ms. Naklicki has led and coordinated species management plans / efforts with the DEP and USFWS and has prepared numerous nest relocation plans and approvals with the NJDEP.

Key Projects

Carteret Ferry Terminal Design and Permitting, Carteret, NJ. Environmental Task Manager to work with the design team to obtain all NJDEP and ACOE Approvals, and a Wetlands Mitigation Plan for the design of the new Carteret Ferry Terminal project along the Arthur Kill in the Borough of Carteret. Design consists of a new bulkhead, loading pier, pedestrian shelters, commuter parking, pedestrian walkways, site lighting and landscaping. This plan includes improvements for a parking lot to accommodate between 350 and 400 vehicles; an access road; site for a future terminal building, shelters, benches and other amenities such as site lighting, walkways, benches, trash receptacles, shelters and landscaped areas.

FD Stonewater VA Facility, Toms River Township, Ocean County, NJ. Environmental Task Manager for the permitting coordination for the construction of a VA Facility in Toms River. Project included NJDEP CAFRA IP and offsite critical wildlife habitat mitigation.

Worked with client, engineers, and NJDEP to obtain, the required permits to comply with the NJDEP Coastal Zone Management Rules. The schedule was aggressive, and the project had to be expedited in order to meet tight deadlines. Project included the construction of a 37,685 SF Community Based Outpatient Clinic Building, 480 parking spaces, stormwater management facilities, landscaping, and lighting. The existing forested area to remain onsite had to be deed restricted and T&M had to work with the Township of Toms River to deed restrict an existing forested habitat in the Township in order to satisfy the Critical Wildlife Habitat Mitigation.

Highlands Rail Trail, Wanaque Borough, Passaic County, NJ. Environmental Task Manager for the permitting coordination for the NJDEP Permits and wetland/stream delineation for the construction of a 9,010-foot-long and 10-foot-wide porous pavement pedestrian trail with a footbridge in the Borough of Wanaque. The majority of the trail is situated along a former railway and existing watermain easement. Coordinated efforts between the client and the NJDEP Division of Land Resource Protection (Flood Hazard Area (FHA) Engineers and Freshwater Wetlands (FWW) Environmental) to address the permit requirements and design permit plans. Conducted numerous field and office meetings with the NJDEP to approve the permit plans and permit applications. Conducted numerous field meeting and office meetings with the Borough to discuss the plans and schedule.

Keansburg Beach Pavilion, Keansburg Borough, Monmouth County. Environmental Task Manager for the permitting coordination for the construction of a 1,296 SF concession stand and restroom building to connect to adjacent parking lot and public access to the beach in the Borough of Keansburg. Worked with the design engineers and the NJDEP to obtain the CAFRA Individual Permit and Green Acres authorization for the project activities.

Beach Replenishment and Restoration Project, Parkertown Beach and Mystic Beach, Little Egg Harbor Township, NJ. Environmental Scientist responsible for organizing the major permitting efforts for the shoreline restoration at two public beaches in the Township of Little Egg Harbor. The Permit applications included NJDEP Waterfront Development Permits, Freshwater Wetland Permits, Army Corps of Engineers and Tidelands Licenses. There were numerous interagency meetings and conversations with the NJDEP, ACOE, NMFS, and USFWS to design the project to be in compliance with the strict NJDEP Coastal Zone Management Rules and Army Corps of Engineers Rules. The project entailed the design of in-water structures to help with erosion control consisting of beach replenishment, breakwaters, stone jettys, and living shorelines. T&M worked with Stevens Institute of Technology to design the stone revetments and living shoreline.

Drainage Improvements to Lincoln, Harrison, Ballantine and Pelican Roads, Middletown Township, NJ. Environmental Scientist responsible for conducting the wetland and State open water delineations at each site. Once delineations were complete, coordinated with the NJDEP to obtaining all required NJDEP land use permits to implement the proposed drainage improvement projects at these locations.

Jersey City Canal Crossing Redevelopment, Jersey City Municipal Utilities Authority, Jersey City, Hudson County, NJ. Permit Task Manager for the proposed regulated activities including the pipe replacement and repair activities as part of the Jersey City Canal Crossing Redevelopment project. The primary goal of the project is to separate the antiquated combined stormwater and sewer pipes and replace with new separate pipes that have sanitary flow only and stormwater flow only. In the upland waterfront development, freshwater wetlands, and flood hazard area jurisdictions of the site, JCMUA has proposed to replace 1,000 LF of pipe and to repair 150 LF of 80" by 80" pipe within Liberty State Park and install a new 48" sanitary pipe below the basin between the NJ Transit and Conrail tracks. In the regulated Waterfront Development area, waterward of the MHWL, the applicant will replace the existing 80" X 80" outfall pipe chamber in-kind and repairing the headwall for the 96" X 84" pipes. The effort included wetland delineation and working with the design engineers to ensure the project complied with the NJDEP Regulations. The NJDEP Permits included Waterfront Development Individual Permit, Freshwater Wetlands General Permit, and Flood Hazard Area Permit. The project required coordinated effort with the NJDEP Office of Permitting & Project Navigation (OPPN), NJDEP Division of Land Resource Protection, NJ State Parks Department, and US Army Corps of Engineers since a pipe had to be replaced within Liberty State Park. Coordinated multiple meetings with the NJ State Parks Department to ensure the project complied with their requirements.

Dorbrook Park Mitigation Monitoring, County of Monmouth, Colts Neck, NJ. Environmental Task Manager worked with NJDEP Mitigation Unit and Monmouth County Department of Engineering to conduct two years of analyzing and monitoring the

Riparian Zone Mitigation project at Dorbrook Park. Conducted the field analysis using NJDEP mitigation survey protocols to determine the health of the vegetation planted the mitigation site. Additionally, prepared the riparian zone monitoring report and all associated documentation. Multiple field meetings were held with the client and the consultant that planted the trees onsite. The final analysis determined that the mitigation area greatly enhanced the riparian zone and surrounding environment aesthetically. The mitigation greatly improved an underutilized habitat to function as new habitat to support the bird and mammal species that thrive in riparian environments. All data collected in the field was analyzed in the report and sent to the NJDEP for review and approval. Upon submission of the final report, the NJDEP approved and closed out the mitigation project.

Swan Creek Flood Gate and Pump Station Resiliency Project, City of Lambertville, Hunterdon County, NJ. Environmental Scientist responsible for conducting due diligence and regulatory data review for flood control mitigation in the City of Lambertville. Worked with various State agencies and government representatives to review alternatives analysis on a future flood mitigation project. The city required an analysis of flood control alternatives to protect the City from flood hazards which have historically occurred in Swan Creek drainage basin and the City's historic district. Met several times with various agencies during the research and due diligence process to review resiliency improvements to the Swan Creek Drainage Basin.

Palmyra TAC-PAL Logistics Center, Palmyra Borough, Burlington County, NJ. Task Manager for the permitting coordination for the redevelopment of the former Tac-Pal Flea Market/Drive In Movie Theater and the adjacent Fillit Sand and Gravel Landfill in Palmyra, NJ as part of the Route 73 Redevelopment Project. The proposed development includes dredge material disposal, two warehouses, parking lots, roadway infrastructure, affordable housing, stormwater management features, pedestrian trails, and gazebos in public open space along the water. Worked with client, engineers, and NJDEP to obtain, the required permits to comply with the NJDEP and ACOE Regulations. The schedule was aggressive, and the project had to be expedited in order to meet tight deadlines. Since there was an active osprey nest onsite, the project included Osprey Nest monitoring in order to address NJDEP regulations. The effort had to be coordinated with multiple T&M employees for a three-month period until the osprey fledged the nest. Since the active nest was removed, the project also included Osprey nest mitigation to construct three nests adjacent to the site. The project also included vernal habitat enhancement proposal and plan. This effort included preparing a grading plan to ensure hydrology would be sufficient and planting native vegetation that would thrive in a vernal habitat. Lastly, the project also included Bald Eagle nest research and meetings to discuss the in-active bald eagle nest on the property. Coordinated multiple meetings with NJDEP, USFWS, and NJFWS along with environmental consultants in order to ensure the project complies with the Migratory Bird Act.

Overpeck Park Landfill, Teaneck, Bergen County, Teaneck, NJ. Environmental Scientist responsible to prepare and submit the interagency permit applications for the closure of the Overpeck park landfill and slope stabilization along Overpeck Creek. The permit applications included Army Corps of Engineers Permit Application and the NJDEP Freshwater Wetland General Permit No. 5, Coastal General Permit 15 and Waterfront Development Permit Application. The project also included the delineation of the wetlands located on the 51-acre parcel. Coordinated efforts between the client and the NJDEP and ACOE to address the permit review comments and to revise the permit plans in accordance with the regulations.

FY 2016-2017 Local Safety Engineering Assistance Program – Contract C, Morris and Monmouth County, NJ. Environmental Scientist for the preliminary and final design of roadway improvements a Monmouth County project administered by the North Jersey Transportation Planning Authority (NJTPA). Project C2 Stage Coach Road (CR 524) Phase 2 (Millstone and Upper Freehold Townships) includes roadway safety improvements and road realignment to correct substandard horizontal geometry on a high-risk rural roadway. Project tasks for all projects include field survey and basemapping; roadway geometric designs; ADA compliance; stormwater management; traffic engineering; roadway lighting; signing and striping; and community outreach. Responsible for performing the wetland delineation. Environmental permitting of the projects includes preparation of NJDEP Flood Hazard Area and Freshwater Wetlands permits for Stage Coach Road and CED preparation and Soil Conservation District permits for all three projects.

Berkeley Island Park Improvement Project, Berkeley Township, NJ. Environmental Scientist responsible for organizing the major permitting efforts for the improvements of an existing Ocean County Park located on Barnegat Bay and Cedar Creek that was destroyed by Superstorm Sandy and closed to the public since the storm. Permit applications included CAFRA IP, Waterfront Development IP, Army Corps of Engineer and Tidelands License. There were numerous interagency meetings and conversations with the NJDEP and ACOE to design the project to be in compliance with the strict NJDEP Coastal Zone Management Rules and Army Corps of Engineers Rules. The project entailed the design of in-water structures to help with erosion control consisting of beach replenishment, two breakwaters, a stone revetment, a stone jetty, bulkhead replacement and living shoreline. T&M worked with Stevens Institute of Technology and the NJDEP Division of Coastal Engineering to design the stone revetments and living shoreline. The upland work consisted of the construction of a 1,500 SF comfort station that included restrooms, locker rooms, first aid station and storage, the replacement of two gazebos and picnic pavilion, playground and splash pad, horseshoe pits, bocce courts, site lighting, walkways, low level landscaping, benches, parking area, bike racks, split rail fencing, bait cutting stations, flag pole area and entrance gate.

Roundabout Design at CR 8A (Locust Avenue/Valley Drive), CR 8B (Navesink Avenue) & Monmouth Avenue, Middletown Township, Monmouth County, NJ. Environmental Scientist for intersection and safety improvements associated with converting an existing stop-controlled intersection to a new roundabout. Performed wetland delineation for the project area. Work performed in conformance with MUTCD, TRB's Highway Capacity Manual (including LOS analysis), and Monmouth County standards.

Monmouth County Landfill, Tinton Falls, NJ. Environmental Scientist for the delineation of 300 acres of wooded wetlands. Prepared and submitted Letter of Interpretation (LOI) application to NJDEP. Worked with the client and NJDEP case manager to review the site and overall wetland delineation.

Intersection Improvements at Bordentown Road, Mansfield, Burlington County, NJ. Environmental Scientist for the final design of roadway improvements to Bordentown Road at intersections with Georgetown Road, Chesterfield Road and Schoolhouse Road. Conducted land surveys and environmental assessments related to the road improvements. Responsible for the design and layout of a single lane roundabout at the intersection of Bordentown Road with Georgetown Road, assisted by the TORUS roundabout design software.

Cloverdale Park, Barnegat Township, NJ. Prepared the Pinelands Public Development Permit Application for the redevelopment of an existing Ocean County park and cranberry bogs. Worked with the design engineers to design the project to meet the needs of the Pinelands Commission and the Ocean County Department of Parks and Recreation. The proposed project involved the redevelopment of an existing residence to be converted to a public restroom, construction of a visitor center, parking lots and other site improvements. Ericka coordinated all pre-application meetings, field work, onsite meetings with the client, permit preparation, permit submission and regulatory agency communication.

Red Bank Library Bulkhead Replacement and North Prospect Avenue Bulkhead Replacement, Red Bank, NJ. Environmental Scientist responsible to obtain the NJDEP Coastal General Permit No 14, ACOE SPGP19 and NJDEP Tidelands License for the replacement of the bulkheads along the Navesink River. Coordinated with the Borough and structural engineers to design the bulkheads on two different properties to maintain compliance with the NJDEP Coastal Zone Management Rules.

Red Bank Bellhaven Park, Borough of Red Bank, NJ. Worked with the Borough Engineer, Landscape Architects and LSRP to prepare and submit a combined NJDEP Permit application for Coastal GP 17, Freshwater Wetlands GP 17 and 4 and a Transition Area Waiver D Clause for the improvements to an underutilized public park located on the Swimming River in Red Bank. Improvements to the park included resurfacing an existing six-foot wide, 3,755 LF long gravel trail, a tot-lot with new playground equipment, 314 SF spray pad encircled by a six-foot wide concrete sidewalk, re-grading and elevation increase by 2-3 feet to meet the existing topography. New landscaping was provided throughout the project area and removal of the existing invasive vegetation. The project remained compliant with strict Coastal Zone Management Rules and Freshwater Wetland Rules. Conference calls with the NJDEP, pre-application meetings and

emails were organized to meet the Division of Land Use Regulations. Assisted the LSRP with additional permits required for the remediation activities needed for a portion of the site.

Sea Bright Beach Pavilion, Borough of Sea Bright, NJ. Organized efforts to obtain the CAFRA Individual Permit for the construction of a proposed two-story 76' by 70' beach pavilion on a portion of the public beach and parking lot. The new facility will be accessible by the boardwalk and ADA compliant ramps from both the beach and parking lot. Facility amenities will include a public library, beach office, community room, restrooms and outdoor showers, public gathering facility and lifeguard station headquarters for equipment and observation. The project will require close coordination with the NJDEP to remain in compliance with the Coastal Zone Management Rules that apply to impervious surface, parking, scenic resources and beaches.

Beach Access Plan, Monmouth Beach Borough, NJ. Worked with the Borough Engineer to design a Public Beach Access Plan to assure that the beach access was in compliance with the NJDEP Coastal Zone Management Rules. The access plan included researching the size of the beach during high tide and assessing the amount of people using the beach. In addition, the amount of parking spaces and the amount of access points to the beach had to be assessed. The report and all maps and plans had to be compiled into a report and submitted to the NJDEP for review and approval.

Teaneck Nature Preserve, Teaneck, NJ. Wetland Delineation and NJDEP Letter of Interpretation. Conducted wetland delineation at a disturbed site that is 55 acres in size. The site was a previously disturbed landfill that has been converted to a nature preserve. The site has been disturbed from past site activities which provided rough terrain and made the delineation more difficult. Subsequent to the delineation, the Freshwater Wetland Letter of Interpretation was prepared and submitted.

Geographic Information Systems (GIS). Environmental Constraints Analyses prepares Environmental Constraints Maps for a variety of projects for different departments at T&M. The GIS Maps are prepared using Arc GIS version 10.1. The GIS program contains NJDEP State GIS Data along with County and Municipal GIS Data. The data can be used when preparing proposals to get background information on a site. The data can be used for preliminary background work prior to conducting a site visit. In addition, the maps can be used in Environmental Assessment Reports and NJDEP Permit Applications.

Sanderson Parcel, Preliminary Assessment and Wetlands Delineation, Edison Township, NJ. Environmental Scientist for environmental investigation and consulting services for the Middlesex County Improvement Authority. Work included the oversite of staff which included a thorough onsite investigation and assessment of the environmental conditions in conformance with accepted ASTM Standard Practice for Environmental Site Assessment.

Tamarack Hollow Expansion, Phase I Site Assessment and Wetlands Delineation, East Brunswick/South Brunswick, NJ. Environmental Scientist for environmental investigation, wetland delineation and lot yield analysis for the Middlesex County Improvement Authority. Work included the oversite of staff which included a thorough onsite investigation and assessment of the environmental conditions in conformance with accepted ASTM Standard Practice for Environmental Site Assessment, Freshwater Wetlands Protection Act and East Brunswick and South Brunswick Land Use and Zoning Ordinances.

Ocean County Midstream Road Bridge Replacement, NJ. Prepared all of the combined interagency permits for the replacement of an Ocean County Bridge Spanning Beaverdam Creek in Brick Township. The permits included NJDEP CAFRA, Waterfront Development and Freshwater Wetlands General Permit No. 10. In addition, the project involved obtaining US Coast Guard Bridge Permit and USACE Nationwide Permit.

Noe Street Drainage Improvement Project, Carteret, NJ. Prepared NJDEP Waterfront Development Permit, Freshwater Wetlands Permit and Army Corps Nationwide Permit for the drainage improvements and proposed tide gate at Noes Creek in Carteret. Also worked with the landscape architects to prepare the Intertidal and Subtidal shallow and Riparian Buffer Mitigation and restoration plan. Worked closely with the NJDEP Division of Land Use Regulation in order to assure the project was designed in compliance with the NJDEP rules and also meet the goals of the project.

Monmouth County/County Route 3 Between County Road 527 and Kensington Drive/Woodland Circle, Manalapan, NJ. Environmental Scientist assisting with the permit applications for the concept development, preliminary engineering and roadway design alternative analyses for roadway improvements for CR3 (Main Street-Tennent Road) between CR527 (Millhurst Road) and Kensington/Woodland Circle. The project addresses traffic safety issues, capacity improvements, system linkage, geometric deficiencies, project transportation demands, environmental considerations for permitting, and traffic signal improvements and optimization along CR3. The project included environmental assessment and studies including cultural resource analysis; wetland delineation; and regulatory assessment.

Reconstruction of Readington Road (CR 637), Townships of Branchburg and Readington, NJ. Environmental Scientist for the final design efforts of approximately 5,500 feet of roadway widening and reconstruction including the replacement of two county bridge structures. Effort associated with the project includes preliminary and final roadway, structural and hydraulics and hydrology design, including an alternatives analysis. Conducted the wetland delineation and prepared the freshwater Wetlands Letter of Interpretation Application and worked with the NJDEP to obtain the approvals.

Carnegie Center West, Building 804, Boston Properties/NRG Energy, Princeton, NJ. Environmental Wetland Permitting for a project involving site plan design of a state-of-the-art office building site using a multitude of sustainable elements including 800kW solar arrays consisting of 13 solar ground-mounted parking canopies, 2 solar roof-mounted canopies, and 2 solar ground-mounted pergolas; 400kW natural-gas-fired CHP unit; Two 30,000 gallon underground rainwater storage system; 2 windmills; pedestrian sidewalks and bicycle paths; 4 bio-swales and a 0.70-acre wet pond; green roof; and electric vehicle charging stations. Scope includes surveying, General Development Plan (GPD) design, wetland delineations, Phase 1 investigations, environmental permitting, landscape architecture design, traffic engineering, site lighting design, LEED® consulting services, and construction management.

Solar Array, Southampton Township, NJ. Delineated 450 acres of agriculture wetlands. Prepared and submitted Letter of Interpretation (LOI) Application to the NJDEP. Worked with the NJDEP to obtain the LOI and conducted site meetings to discuss with the NJDEP Case Manager.

Monmouth County Landfill, Tinton Falls, NJ. Delineated 300 acres of wooded wetlands. Prepared and submitted Letter of Interpretation (LOI) Application to the NJDEP. Met with Client and NJDEP Case Manager to review the site and overall wetland delineation.

Sand Replenishment, Union Beach, NJ. Prepared NJDEP CAFRA and waterfront development permits for the placement of 6,000 CY of sand replenishment. In addition, prepared Army Corps of Engineers (ACOE) Permit Applications.

Benjamin Terry Bulkhead Replacement, Borough of Keyport, NJ. Prepared coastal general permit No.14 and ACOE permit for the replacement of 413 LF of timber bulkhead with new fiberglass bulkhead within 21-inches of the existing bulkhead.

Six Bulkhead Replacements and Pump Station, Sea Bright, NJ. Prepared the NJDEP CAFRA Individual Permit and Waterfront Development Permit for the replacement of 5 bulkheads, the construction of a new bulkhead and walkover access ramp and construction of a new pump station to aid in the restoration of a Town that was greatly impacted by flood waters during Superstorm Sandy. The project also involved obtaining an USACOE Nationwide Permit.

Beachwood Beach Groin, Beachwood Borough, NJ. Prepared the NJDEP Waterfront Development Permit and Coastal General Permit No. 6 and Army Corps of Engineers Permit. Worked with the Municipal engineers to design the project to meet the needs of the NJDEP and the Borough of Beachwood. The Borough of Beachwood proposed the construction of a groin to reduce erosion along the eastern shoreline of Beachwood Beach located along the Toms River. In addition, the project involved minor sand transfer from the lower portion of the beach to the eastern shoreline to provide additional beach area and to improve the eroded conditions of the beach. Ericka Coordinated all field work, permit preparation, permit submission and regulatory agency communication.

Little Egg Harbor Township, Ocean County, Iowa Court Living Shoreline Project. Environmental Tas Manager to work with design engineers, NJDEP, USFWS, ACOE to design a Living shoreline at the terminus of a cul-de-sac in Little Egg Harbor. Submitted NJDEP Waterfront Development Permit and Army Corps of Engineers Permit for the project. Worked with NFWF to ensure the design and schedule meets the requirements of the NFWF Funding and schedule. Numerous

meetings and conference calls were required to ensure the project was designed to comply with the various regulations and NFWF funding.

Tuckerton Borough, Ocean County, Living Shoreline (breakwater design). Worked with the design engineers, NJDEP and ACOE to design a breakwater to help restore an eroded shoreline along Green Street in Tuckerton. Prepared Waterfront Development Permit applications and Army Corps of Engineers Permits.

Howell Township, Monmouth County, Lake Aldrich Dredging Project. Conduct wetland delineation and prepare Freshwater Wetlands Individual Permit and Flood Hazard Area Individual Permit for dredging 57,000 CY of sediment from Aldrich Lake in Howell Township, Monmouth County. Work with the design engineer to develop permit plans and disposal site plans for dredge material disposal. Work with DEP to approve the permit plan and permit application. Meet with the Township to discuss the plans and schedule. Work with facility that would take the material to ensure the appropriate sediment samples were taken.

Little Egg Harbor, Ocean County, Rutgers Marine Field Station Boat Basin Dredge Project. Worked with the design engineers and Rutgers University to dredge 12,000 CY of sediment from their boat basin at the research facility on Barnegat Bay/Little Egg Harbor. T&M associates worked closely with Rutgers University to ensure proper dredge and disposal was conduct to comply with State and Federal Rules. Worked with NJDEP and ACOE and NMFS to ensure the dredge project will comply with the strict timing restrictions to protect a variety of aquatic species that inhabit Barnegat Bay. Conducted the Environmental Inspections during the dredge operations to ensure the contractor was dredging during the ebb tide, visited the site daily during the dredge operations to ensure compliance with the DEP/ACOE Rules. Attended numerous meetings with Rutgers, NJDEP and ACOE on the project.

Ocean Township (Ocean County) Lagoon Dredge Project. Prepared all NJDEP and Army Corps of Engineers Permit Applications for dredging 11,2080 CY of sediment from multiple lagoon areas within Ocean Township, Ocean County. Worked with the Township Engineer to ensure proper location for disposal. Worked with the NJDEP during the permit review process to ensure the project was designed to comply with the Coastal Zone Management Rules for Dredging tidal waterbodies.

Little Egg Harbor Lagoon Dredge Project. Prepared NJDEP Waterfront Development Permit and Army Corps of Engineers Permit Applications for dredging 75,400 CY of sediment from multiple lagoon areas within Little Egg Harbor, Ocean County. Worked with the Township Engineer to ensure proper location for disposal. Worked with the NJDEP during the permit review process to ensure the project was designed to comply with the Coastal Zone Management Rules for Dredging tidal waterbodies.

Melissa**BARNES**

Staff Environmental Scientist 2

Education

Susquehanna University, BS Earth and Environmental Sciences, 2019

Rutgers University, Wetlands Delineator Certification, 2022

Rutgers University, Wetlands Delineation for LSRPs

Rutgers University, Vegetation Identification: North, 2021

Rutgers University, Introduction to Wetland Identification, 2021

LSRPA, Due Diligence in New Jersey

Professional Registrations/ Affiliations

Society of Women Environmental Professionals, NJ/Philadelphia Chapter

NJ Licensed Site Remediation Remediating Professionals Association

Wetland Delineation Certificate – Rutgers University

40-hour OSHA Hazardous Waste Operations Training

Years in the Industry

3

Areas of Expertise

Environmental Engineering, Environmental Science, Field Testing, Geographic Information Systems (GIS), Wetland Delineations, NJDEP Land Use Regulations, USACE Permit Requirements

Summary of Qualifications

Ms. Barnes is an environmental staff scientist with field experience performing groundwater and soil sampling as well as overseeing geotechnical investigations, soil excavation and removal, and groundwater sampling collection, wetland delineations and vegetation identification. Her areas of expertise include assisting in the preparation of applications and final reports to the proper regulatory agencies. Her project duties include obtaining Freshwater and Coastal Wetland Permits, Letters of Interpretation, CAFRA and Waterfront Development Permits, Pinelands approvals and US Army Corps of Engineers permits. Additionally, she has assisted in writing and preparing numerous Environmental Impact Statements and Baseline Ecological Evaluations that relate to a variety of projects.

In addition, she is experienced in the preparation of Geographical Information System (GIS) maps for various project types including wetlands, floodplains, threatened and endangered species, aquifer and land use maps. She also has experience using Global Positioning System (GPS) surveying equipment.

Ms. Barnes is experienced in vegetation analysis, habitat assessments and wetlands and stream analysis. She has assisted in performing numerous wetland delineations ranging from small to large properties. She uses Trimble® GPS while in the field to gather her data and locate the wetland flag locations. After the data is collected Ms. Barnes works with the project engineers to prepare Permit Plans to demonstrate project compliance with the local, state, and federal land use regulations.

Prior to joining T&M, she trained as a field technician performing low-flow and three volume purge groundwater sampling using bailers and peristaltic pumps on monitoring wells. She also conducted field extractions and written logs of soil borings while collecting samples and worked directly with contractors at sites for remediation purposes and has written Remedial Action Reports and Site-Specific Health and Safety Plans.

Key Projects

Replacement of Doty Road Culvert, Wanaque Borough, NJ. Performed wetland delineation and vegetation investigation by utilizing soil sampling and vegetation identification. Assisted in NJDEP compliance by writing and compiling a combined Freshwater Wetlands General Permits and Flood Hazard Area Individual Permit. Responsible for preparation, submission and correspondence with NJDEP for permit obtainment.

Liberty Street Commons, City of Long Branch, NJ. In charge of performing an environmental review for a land swap deal involving a land exchange from two parties to develop new low family income housing. Established communication between all parties involved and the preparation of all submission documentation, mapping, and applications as well as SHPO and multi-agency cooperation.

Up Smiths Creek Redevelopment Area, Woodbridge Township, NJ. Helped with the submission for a bulkhead replacement permit, Letter of Interpretation submission and Upland CAFRA induvial permit to NJDEP. The entire waterfront area is being redeveloped to feature a multi-amenities updated waterfront area with a food truck area, tiki bar, green turf area, and docking stations. Prepared site maps and compliance statements addressing the Coastal Zone Management Rules, Flood Hazard Area Control Act Rules, and Freshwater Wetlands Protection Act Rules.

Union Beach Maintenance, Union Beach Borough, NJ. Prepared NJDEP CAFRA compliance statement and submission for the beachfront area. Helped coordinate correspondence with NJDEP and the Borough in order to establish proper raking and updated features for the public to enjoy along this beachfront area.

Solar Canopy, Phillipsburg, NJ. Conducted a tree survey on two separate parcels of land for future solar canopy arrays. Established base mapping using ArcMap to illustrate site conditions and project area.

Shadybrook Drive, Middletown Township, NJ. Performed a wetland delineation for the submission of a Freshwater Wetlands combined general permit for the repair and replacement of a deteriorated and broken Reinforced Concrete Pipe (RCP) behind a residential home. The project consisted of the replacement of an existing 18' Reinforced Concrete Pipe (RCP) from the existing manhole to an outfall. The project also included reconstructing an eroded steep slope associated with the eroded streambank along Town Brook tributary with concrete headwall and riprap in the stream bed for Soil Erosion protection.

Levgar Street Roadway Improvements, Piscataway Township, NJ. Conducted a wetland delineation along Levgar Street in preparation for the submission of a and Flood Hazard Area Individual Permit pursuant to the and Flood Hazard Area Protection Act Rules (N.J.A.C. 7:13). Conducted all correspondence with NJDEP and review of the areas flood mapping as well as T&E species.

Rehabilitation of Bridge 4B-087, Plainsboro Road over Devils Brook, Plainsboro, NJ. Performed a wetland delineation for the submission of a combined application for a Freshwater Wetland General Permit No 10A and Flood Hazard Area Individual Permit. The project included the replacement of the existing bridge structure on Plainsboro Road over Devils Brook and Gordon Pond. The abutment/wingwalls and footings were also rehabilitated to address defects and modified to accept the replaced superstructure.

PFAS General Consulting, Woodbridge Township, NJ. Researched NJDEP water data via online Waterwatch website and prepared bi-monthly reports to the Township reporting the latest on local, area, and nationwide PFAS.

Township Wide Dredge Project, Little Egg Harbor, Ocean County, NJ. Prepared all NJDEP and Army Corps of Engineers Permit Applications, as well as the Tidelands License application, for dredging 430,000 CY of sediment from multiple lagoon areas, streams, and Great Bay within Little Egg Harbor. Worked with the Township Engineer to ensure proper location for disposal. Worked with the NJDEP during the permit review process to ensure the project was designed to comply with the Coastal Zone Management Rules for Dredging tidal waterbodies.

Lower Alden Drive Stream Stabilization Project, Rahway, NJ. Performed the wetland delineation and prepared the NJDEP Freshwater Wetland General Permits 11 & 20 and Flood Hazard Individual Permit for the reconstruction of a headwall and stream bank stabilization of a stream on a vacant lot between 351 and 379 on Lower Alden Drive. All improvements were coordinated with the County of Union. Developed the GIS site location maps.

Huddy Park Kayak Launch, Toms River, NJ. Prepared NJDEP In-Water Waterfront Development Permit, Tidelands License Application, and Army Corps of Engineers Permit for the installation of a kayak launch within Huddy Park. The kayak launch and access ramp were installed to promote recreational activity at the park.

Dorbrook Park Mitigation Monitoring, County of Monmouth, Colts Neck, NJ. Environmental Scientist worked with NJDEP Mitigation Unit and Monmouth County Department of Engineering to conduct two years of analyzing and monitoring the Riparian Zone Mitigation project at Dorbrook Park. Conducted the field analysis using NJDEP mitigation survey protocols to determine the health of the vegetation planted the mitigation site. Additionally, prepared the riparian zone monitoring report and all associated documentation. Multiple field meetings were held with the client and the consultant that planted the trees onsite. The final analysis determined that the mitigation area greatly enhanced the riparian zone and surrounding environment aesthetically. The mitigation greatly improved an underutilized habitat to function as new habitat to support the bird and mammal species that thrive in riparian environments. All data collected in the field was analyzed in the report and sent to the NJDEP for review and approval. Upon submission of the final report, the NJDEP approved and closed out the mitigation project.

Palmyra Redevelopment Project, Palmyra, NJ. Assisted in the preparation of the NJDEP permit applications which included applications for a Waterfront Development Individual Permit (in-water and upland), Coastal Wetlands Permit, Flood

Hazard Area Individual Permit, Flood Hazard Area Verification, and Freshwater Wetlands General Permits No. 5, 6, 11, and 17. The project involved the importation of fill, and site remediation and landfill closure activities. The development includes two warehouses, parking lots, roadway infrastructure, affordable housing, stormwater management features, pedestrian trails, and gazebos in public open space along the water. Performed Osprey Nest Mitigation Monitoring for this site as well as vernal pool habitat assessment.

Tuckerton Creek Fill Material, Tuckerton, NJ. Performed a fill material investigation through a series of hand auger borings and soil sampling/characterization. Assisted in data analysis through compiling and organizing data tables for the analysis.

Bulkhead Improvement Project, Waretown, NJ. Prepared the NJDEP Coastal GP.10 Permit for the reconstruction of nine bulkheads by addressing the survey, design, and permitting of each at street ends on Hornblower Drive (3 locations), One Eye Way, Bluebeard Way, Nautilus Road, Maplewood Rd (2 locations), and at Bayshore Drive pump station. All improvements were coordinated with the Township of Ocean. Developed the GIS site location maps for each individual bulkhead.

South Amboy Warehouse Project, South Amboy, NJ. Performed the wetland delineation on the waterfront property for development consisting of vacant land and an old landfill. Prepared the NJDEP permit applications which included an Upland Waterfront Development Individual Permit, Coastal Wetlands Individual Permit, Transition Area Waiver, LOI Verification, Stormwater Review and Freshwater Wetlands General Permits Nos. 2 and 7. The permit application was submitted to construct a 152,100 SF warehouse and associated trailer parking and a river front walkway located at 111 Main Street in the City of South Amboy.

Geographic Information Systems (GIS) Services, Various Projects. Environmental Constraints Analyses - prepared Environmental Constraints Maps for a variety of projects. Site Location – prepared Environmental Site Location Maps for a variety of projects. Maps are prepared using Arc GIS version 10.3. The GIS program contains NJDEP State GIS Data along with County and Municipal GIS Data. The data can be used when preparing proposals to retain background information on a site and for preliminary background work prior to conducting a site visit. In addition, the maps can be used in Environmental Assessment Reports, Tax Maps, and NJDEP Permit Applications:9 Bulkhead Improvements, Waretown, NJ.

- 6 Manchester Properties, Manchester NJ.
- Berkley Asphalt, Berkley, NJ.
- FEMA Flood Elevations, Red Bank, NJ
- Eglin Air Force Base Solar Array, Eglin, Florida

Police and Municipal Building Renovation/Addition, Borough of Dumont, NJ. Oversaw extraction and relocation of contaminated soil. Responsible for Health and Safety Plan, and UST finding as well as assisting in soil around UST sampling.

Bayfront Marina, Ocean Township, Waretown, NJ. Supervised geophysical analysis and geotechnical soil borings to determine subsurface conditions.

Six Manchester Properties, Manchester, Ocean County, NJ. Performed pesticide surface soil sampling and created site sampling maps in ArcGIS. Oversaw test pit excavation as well as test pit soil borings and updated AutoCAD test pit sampling locations. Oversaw geophysical investigation.

South Plainfield, Middlesex, NJ. Edited and researched monitoring well permits for electronic data deliverable submission.

Middletown Preschool, Middletown, NJ. Responsible for site investigation, photo updates, research on name change and how affects the biennial certification.

Water Intrusion and Mold Growth Response, West Deptford, NJ. Assisted in water intrusion and mold sampling as well as investigation.

Landfill Gas Monitoring, MCUA Middlesex County Landfill, East Brunswick, NJ. Performed monthly and quarterly landfill gas monitoring and analytical gas testing at the Middlesex County Landfill. Utilized onsite gas monitoring wells or temporary

gas sampling points to record concentrations of methane, carbon dioxide, oxygen, hydrogen sulfide, and Lower Explosive Limit (LEL) by volume. Impacts to onsite and offsite receptors assessed include structures, utilities, public buildings, businesses, and private residences. Performed baseline perimeter hydrogen sulfide monitoring and sampling in accordance with state and federal regulations. Also drafted a site-specific health and safety plan.

South Brunswick Asphalt Co. Site Remedial Investigation, Township of Berkeley, NJ. Performed soil boring analysis and groundwater sampling oversite to investigate asphalt, coal tar, and historic fill related contamination for 100+ acre site. Oversaw groundwater monitoring well surveys.

Walz Property, Tinton Falls, Borough of Tinton Falls, NJ. Assisted in surface soil sampling of historically applied pesticide area of concern following NJDEP's December 2018 Historic Applied Pesticides Technical Guidance (Version 3.0).

300 North Ave. Westfield, NJ. HVE (high vacuum extraction) oversight

Union County Redevelopment Project Location Maps, Neptune, NJ. Produced multiple site location maps for 17 different properties within Union County. Established property boundaries as well as utilizing GIS and parcel information to make the site area accurate.

Arthur Chambers Park, Somerville, NJ. Researched historical site uses and potential presence of pesticide contamination on the Site and surrounding area. Identified and documented areas of concern during site evaluation. Reviewed historical and topographic maps, determined past agricultural activities on site, and conducted pesticide sampling on site then organized the analytical data.

Oakwood Beach Wastewater Treatment Facility, Data Analysis, Staten Island, NY. Conducted interviews with facility chemists, transported data to excel, organized and analyzed for standard deviation. Drew conclusions from data analysis about variance and accused data discrepancies.

Dogwood Pump Station, Edison NJ. RAR, Staff Environmental Scientist responsible for writing the Remedial Action Workplan resulting from a 500-gallon UST heating oil No. 2 tank pull and the effects on soil and groundwater. Post remedial action displayed no contamination identified in boring/sampling, monitoring well sampling, data review/analysis, and receptor evaluation. Responsible for complete report including sit plan, site sampling plan, data tables, case inventory document, and NJDEP correspondence.

Tree Survey, Berlin NJ. Assisted in the identification, measuring, and Tribune GPS tracking of over 300 trees in a project area. Due to the Berlin-Cross Keys Rd being enlarged, it is paramount that the total number of trees to be preserved by Green Acres is sufficient to provide a net tree area gain to Green Acres encumbered park system property.

DHLE Stormwater Compliance, Ewing, NJ. Prepared the 2019 Annual Stormwater Report known as the National Pollutant Discharge Elimination System (NPDES) general permit for discharges of stormwater associated with industrial activity report for the DHLE facility. The report included an explanation of the stormwater outfall information including; inspection, best management practices implementation, precipitation, control pollutants, sampling events, and a preparedness, prevention, and contingency plan. Designed and constructed using ArcMap the facility plan and site map.

Tuckerton Creek Fill Material, Tuckerton, NJ. Performed a fill material investigation through a series of hand auger borings and soil sampling/characterization. Assisted in data analysis through compiling and organizing data tables for the analysis.