



E2 Project Management LLC

87 Hibernia Avenue
Rockaway, New Jersey 07866
Tel (973) 299-5200 Fax (973) 299-5059

July 8, 2019

Anthony Egidio
Verizon Wireless
400 Warren Corporate Center Drive,
Building D
Warren, New Jersey 07059

Re: Wetland Investigation
Proposed Wireless Communications Facility
Westfield 4
Block 121, Lots 1, 2.01, 2.02, 3, 4 & 5
Block 122, Lot 5
1033 Springfield Avenue
Cranford, Union County, New Jersey
E2PM Project No. P-19-01-047

Dear Mr. Egidio:

This report summarizes the results of the freshwater wetland investigation that was conducted by E2 Project Management LLC (E2PM) on July 3, 2019, for the proposed wireless communications facility, referenced above.

The new wireless communications facility is proposed to be constructed on the northwestern corner of the subject property in an area used to store soil and woodchips. Access to the new facility is proposed to be via an existing access dirt/gravel driveway from the property's existing interior roadway. The compound portion of the proposed project would be constructed on an upland area disturbed by the storage of soil and wood chips.

Initial investigation of wetlands potentially located on and/or adjacent to the location of the proposed project focused on identifying wetland areas utilizing secondary sources of information, including the New Jersey Department of Environmental Protection's (NJDEP) GIS environmental database(s). Pursuant to review of the NJDEP's GIS databases, an area of wetlands is mapped as being located approximately 610-feet to the northeast. Based on completion of the site reconnaissance, there were no wetlands located within at least 170-feet of the location of the proposed compound area. At their potentially closest point, they are located approximately 56-feet downslope, to the east, of the beginning of existing access road.



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According to the FEMA as well as the NJDEP Flood Hazard Mapping, the site area is not located in a 100-year or 500-year flood plain or NJFHA. In addition, E2PM has determined that no part of the proposed project is located within a riparian buffer. An Un-Coded tributary is located 750-feet to the north east. The Un-Coded Tributary flows to the southeast and is piped under a section of residential homes for approximately 1,100-feet and merges into an Un-Named Tributary of the Rahway River. Both the Un-Coded Tributary and the Un-Named Tributary of the Rahway River are classified by the NJDEP as FW2-Non Trout-C2.

Pursuant to completion of the July 3, 2019 site investigation, on-site vegetation, soils, and hydrology on and within the vicinity of the proposed project were documented as follows:

Vegetation

As previously indicated, the proposed project is located entirely within an area of disturbed land used for the storage of soil and woodchips. The naturally vegetated area located east of the subject project location supported white and red oaks, hickories and ash. The wetlands area further to the east supported red maple, ash and sycamore. Skunk cabbage was very common throughout the wetland area.

None of the vegetation referenced above is hydrophytic within 150-feet of the proposed compound area.

Soils

Map Unit: HakB—Haledon loam, 3 to 8 percent slopes

Component: Haledon (90%)

The Haledon component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is found on ground moraines on till plains. The parent material consists of coarse-loamy basal till derived from basalt. Depth to a root restrictive layer, fragipan, is 24 to 36-inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60-inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded nor is it ponded. A seasonal zone of water saturation is at 12-inches during January, February, March and April. Organic matter content in



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the surface horizon is about 3 percent. Non-irrigated land capability classification is 3w. This soil does not meet hydric criteria.

Component: Hasbrouck (5%)

The Hasbrouck soil is a minor component.

Component: Passaic, frequently flooded (5%)

The Passaic soil is a minor component.

Map Unit: HatB—Haledon-Urban land-Hasbrouck complex, 0 to 8 percent slopes

Component: Haledon (45%)

The Haledon component makes up 45 percent of the map unit. Slopes are 0 to 8 percent. This component is found on ground moraines on till plains. The parent material consists of coarse-loamy basal till derived from basalt. Depth to a root restrictive layer, fragipan, is 24 to 36-inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60-inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded nor is it ponded. A seasonal zone of water saturation is at 12-inches during January, February, March and April. Organic matter content in the surface horizon is about 3 percent. Non-irrigated land capability classification is 3w. This soil does not meet hydric criteria.

Component: Urban land (25%)

The Urban land is a miscellaneous area.

Component: Hasbrouck (15%)

The Hasbrouck component makes up 15 percent of the map unit. Slopes are 0 to 3 percent. This component is found on depressions on till plains. The parent material consists of fine-loamy eroded and redeposited glacial material over glacial till. Depth to a root restrictive layer, fragipan, is 18 to 36-inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60-inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is rarely flooded and is not ponded. A seasonal



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zone of water saturation is at 3-inches during January, February, March, April, May and December. Organic matter content in the surface horizon is about 85 percent. Below this thin organic horizon the organic matter content is about 4 percent. Non-irrigated land capability classification is 4w. This soil meets hydric criteria.

Component: Udorthents, Haledon substratum (10%)

The Udorthents soil is a minor component.

Component: Boonton (5%)

The Boonton soil is a minor component.

On-site soils as well as within the adjacent wooded areas were 10YR 5/3 to 10YR 5/4 and were brown in color and did not exhibit any hydromorphic features (redox depletions, redox concentrations, or redoximorphic features (formerly called mottles). Soils in the wetland area were 10YR 5/2 and had redoximorphic features (formerly called mottles).

Hydrology

No evidence of surficial (wetland) hydrology was observed to be located within or adjacent to the project site. As previously indicated, all elements of the proposed project would be installed on areas of disturbed land. An Un-Coded tributary is located 750-feet to the north east. The Un-Coded Tributary flows to the southeast and is piped under a section of residential homes for approximately 1,100-feet and merges into an Un-Named Tributary of the Rahway River. Both the Un-Coded Tributary and the Un-Named Tributary of the Rahway River are classified by the NJDEP as FW2-Non Trout-C2. The wetland area was observed to be ponded and had groundwater within 6 inches of the surface.

E2PM reviewed NJDEP Landscape data to determine if any Endangered or Threatened species habitat was located in the project area. No Endangered or Threatened species habitat was indicated in the project area of immediately adjacent to the project area. E2PM also reviewed information from the USFWS to determine if any Federal species were located in the project area. The IPaC review indicated that two species (long-eared and Indiana Bats) may be located in the



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general area but no critical habitat for either species was found on or adjacent to the project area. As no trees are proposed to be removed the two bats species are not a concern.

Based on no C-1 waters and no endangered species habitat, the wetlands would have a 50-foot transition area. The compound and existing access road are outside the 50-foot transition area. The proposed utility route from the compound area to a utility pole, located along the parking lot access road to the east would be located in the wetland transition area and would require a Wetland Utility Crossing permit from the NJDEP. An optional utility run may be included in the project plans, the utility routing would be from the Sperry Observatory building to the proposed utility routing adjacent to the utility pole being proposed for the utility demark.

Pursuant to review of all readily available documentation as well as completion of the site investigation, E2PM has determined that neither wetlands nor State open waters are located on or within at least 150 feet of the proposed compound area. The proposed utility routing would pass through a wetlands transition area. Further, E2PM has also determined that no part of the proposed compound area is located within a wetland transition area, floodplain/FHA, or riparian buffer. As such, coordination with the NJDEP Department of Land Use Regulation would only be required for the utility routing.

See attached for photographic documentation, various map figures, and qualifications and experience of preparer.

Should you have any questions, please do not hesitate to contact me at 973-299-5200 or, preferably, via email at chris.lanna@e2pm.com.

Sincerely,

Christopher Lanna
Natural Resources Manager
E2 Project Management, LLC

APPENDIX A – Site Photographs

Photo: 1

Date: July 3, 2019

Description: View looking northwest at the existing access road.



Photo: 2

Date: July 3, 2019

Description: View looking north-northeast from the access road.



Photo: 3

Date: July 3, 2019

Description: View looking east from the access road toward the wetland area.



Photo: 4

Date: July 3, 2019

Description: View looking northwest at the compound area.



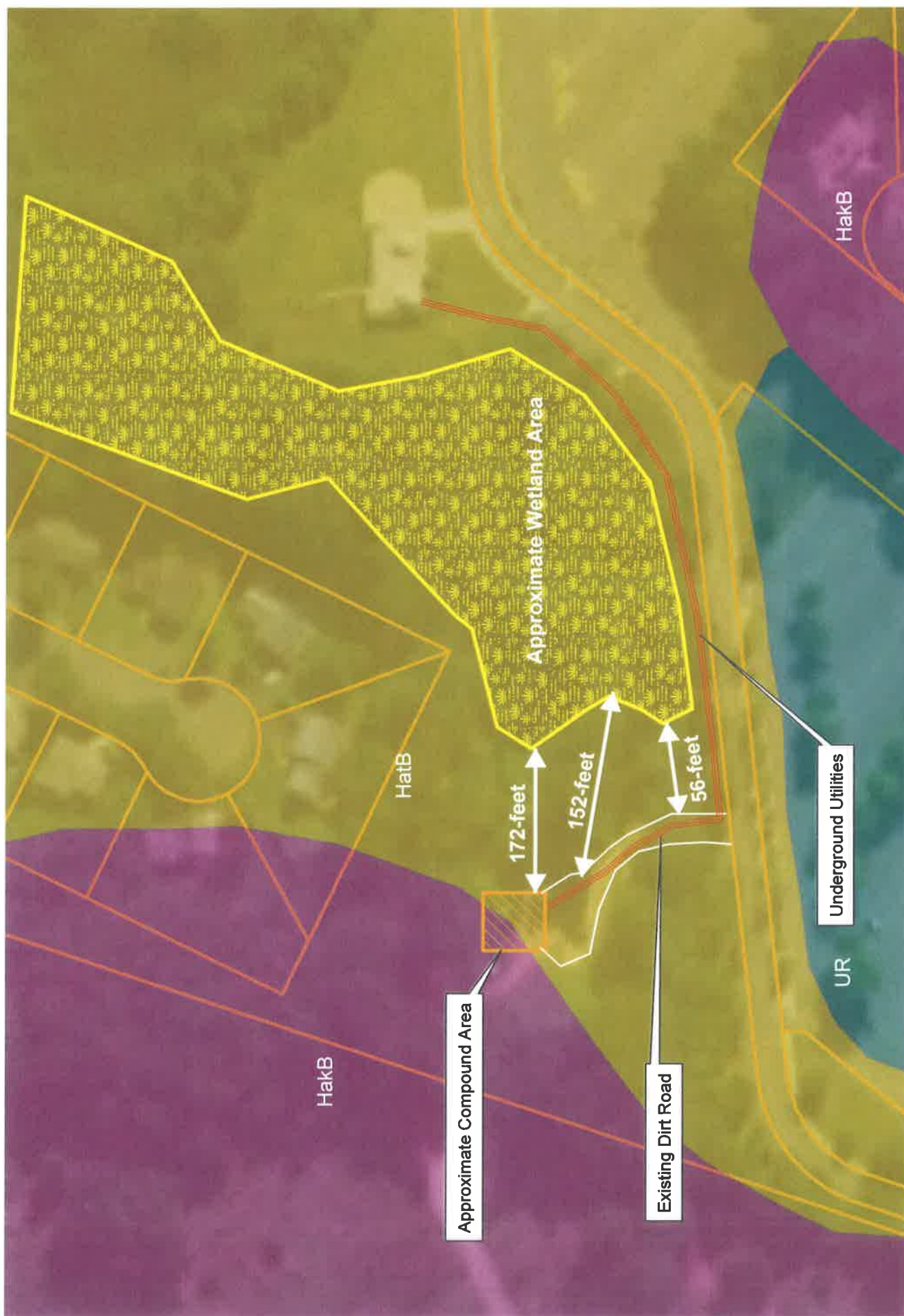


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APPENDIX B – Map Figures







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APPENDIX C – USFWS IPaC Report



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Jersey Ecological Services Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, NJ 08205
Phone: (609) 646-9310 Fax: (609) 646-0352

<http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>



In Reply Refer To:
Consultation Code: 05E2NJ00-2019-SLI-1427
Event Code: 05E2NJ00-2019-E-03099
Project Name: Westfield 4

July 08, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species that may occur in your proposed action area and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*)

If the enclosed list indicates that any listed species may be present in your action area, please visit the New Jersey Field Office consultation web page as the next step in evaluating potential project impacts: <http://www.fws.gov/northeast/njfieldoffice/Endangered/consultation.html>

On the New Jersey Field Office consultation web page you will find:

- habitat descriptions, survey protocols, and recommended best management practices for listed species;
- recommended procedures for submitting information to this office; and
- links to other Federal and State agencies, the Section 7 Consultation Handbook, the Service's wind energy guidelines, communication tower recommendations, the National Bald Eagle Management Guidelines, and other resources and recommendations for protecting wildlife resources.

The enclosed list may change as new information about listed species becomes available. As per Federal regulations at 50 CFR 402.12(e), the enclosed list is only valid for 90 days. Please return to the ECOS-IPaC website at regular intervals during project planning and implementation to obtain an updated species list. When using ECOS-IPaC, be careful about drawing the boundary of your Project Location. Remember that your action area under the ESA is not limited to just the footprint of the project. The action area also includes all areas that may be indirectly affected

through impacts such as noise, visual disturbance, erosion, sedimentation, hydrologic change, chemical exposure, reduced availability or access to food resources, barriers to movement, increased human intrusions or access, and all areas affected by reasonably foreseeable future that would not occur without ("but for") the project that is currently being proposed.

We appreciate your concern for threatened and endangered species. The Service encourages Federal and non-Federal project proponents to consider listed, proposed, and candidate species early in the planning process. Feel free to contact this office if you would like more information or assistance evaluating potential project impacts to federally listed species or other wildlife resources. Please include the Consultation Tracking Number in the header of this letter with any correspondence about your project.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Jersey Ecological Services Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, NJ 08205
(609) 646-9310

Project Summary

Consultation Code: 05E2NJ00-2019-SLI-1427

Event Code: 05E2NJ00-2019-E-03099

Project Name: Westfield 4

Project Type: COMMUNICATIONS TOWER

Project Description: Telecommunication Facility

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/40.66633700379906N74.32493103811551W>



Counties: Union, NJ

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Blue-winged Warbler <i>Vermivora pinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30

NAME	BREEDING SEASON
Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 28 to Jul 20
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (k)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee

was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (🟡)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (1)

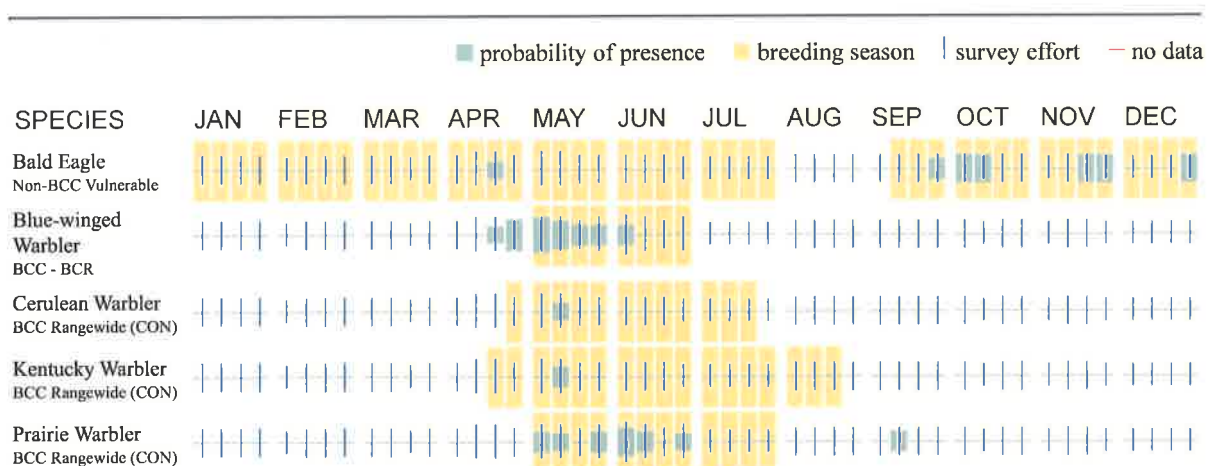
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.



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APPENDIX D – Qualifications and Experience of Preparers

CHRISTOPHER LANNA

Natural Resources Manager / Telecom Environmental Manager / GIS Specialist

YEARS OF EXPERIENCE: 35+ years

YEARS WITH E2 Project Management: 12 years

TECHNICAL SPECIALTIES

Certified NJDEP UST Subsurface/Closure

EDUCATION

Montclair State University, Montclair, NJ

M.A. Environmental Management, 1988

Ramapo College, Ramapo, NJ

B.S. Ecology, Minor in Land and Water Resources, 1980

Upsala College, East Orange, NJ

Geology/Environmental Science

PROFESSIONAL REGISTRATIONS AND AFFILIATIONS

- One Person Adult CPR
- 8-Hour Annual Refresher for HAZWOPER
- 8-Hour OSHA Supervisor Training
- 40-Hour OSHA HAZWOPER Training
- OSHA – Competent Person in Evacuation
- OSHA – Confined Space Training
- NJEPA – Certified Wetland Professional
- NJDEP - Closure and Subsurface Certification (#0011180)
- NJDEP - Boring Certification
- U.S. Fish & Wildlife Service – *Individual Master Bird Banding Permit*
- NJ Association of Environmental Professionals
- Sandy Hook Raptor Banding Research Station, Director
- Kittatinny Mountain Raptor Research Association, Co-Director
- Society of Wetland Scientists, Member
- Eastern Bird Banding Association, Member

QUALIFICATIONS

Mr. Lanna's professional background spans more than 35 years and includes both private and public projects. He has extensive knowledge of both state and federal environmental regulations. Mr. Lanna has been involved in all aspects of environmental project management including client contact, invoicing, investigating, permitting, groundwater and soil sampling and supervising both office and field personnel. Mr. Lanna oversees all ecological projects which include NEPA screening, Federal EA (EA), Environmental Impact Statements (EIS), NJ Executive Order 215 (EO 215) submissions, threatened and endangered (T&E) species investigations, wetlands and waterfront development permitting, and other land use regulations requirements. He has overseen a multi-year contract for the NY district of the US Army Corps of Engineers. Environmental services included EAs, permitting, blasting effects on fish population, freshwater and salt marsh restoration, and other ecological services.

Mr. Lanna for the last 12 years has managed telecommunication projects for Verizon Wireless, Sprint, MetroPCS, ATT and T-Mobile. Mr. Lanna has overseen all aspect of environmental submittals for telecommunication projects including Phase I, Phase II, NEPA, State Historic Preservation Office (SHPO) consultations and permitting (Highlands, wetlands, stream encroachment, CAFRA). Mr. Lanna has been the main contact for Verizon Wireless projects for E2PM and is the main contact for Highlands permits for telecom sites.

Additionally, Mr. Lanna has performed Phase I and Phase II Environmental Site Assessments (ESAs) on a variety of facilities from residential apartments to large industrial complexes for both lending institutions and industrial clients. The assessments include: on-site physical inspection, off-site usage, federal and state data base searches, sampling and report preparation. Has performed all aspects of hazardous waste application submittals. This work included preparation of Preliminary Assessments/Site Investigations (PA/SI), initial site inspections, sampling plans, Remedial Action Workplans (RAWP), Remedial Action Reports (RAR) and overseeing the remedial site work. Mr. Lanna is certified by the NJDEP for Closure and Subsurface Investigation for Underground Storage Tank (UST) work, and has overseen numerous UST Closure cases from the initial closure submittals to supervision of tank removals and post excavation soil and groundwater sampling. Mr. Lanna has provided oversight of environmental insurance claims for major



insurance companies. Oversight included determining third party damage; working with the claimants to insure the proper work is performed in conjunction with the NJDEP; and reviewing all invoices being presented to the insurance companies for payment.

Mr. Lanna is an expert in the field of raptor research and has participated in numerous T&E species and wildlife delineations and permitting applications.

PROFESSIONAL HISTORY

E2 Project Management, LLC, Rockaway, NJ - *Natural Resources/Telecom Environmental Manager*

Managed the Natural Resources Department. Provide environmental compliance for major wireless companies, including wetlands permitting, CAFRA permits, Phase I, Phase II, flood hazard permits on over 300 projects a year. Perform wetlands delineations and permitting on a variety of public and private projects. Performs and oversees T&E research and habitat evaluations. Oversees the Cultural Resources division of E2PM.

Tetra Tech EM Inc., Rockaway, NJ - *Natural Resources Manager*

Managed the Natural Resources Department. Services included environmental permitting and Environmental Assessment for multiple projects at Picatinny Arsenal. Provided environmental compliance for major wireless companies, including wetlands permitting, CAFRA permits, Phase I, Phase II, flood hazard permits. Performed wetlands delineation and permitting on a variety of public and private projects. Performed T&E research and habitat evaluations.

MATRIX Environmental and Geotechnical Services, Inc. Florham Park, NJ - *Administration Ecological Services/Senior Project Manager*

Managed the ecological division of the company. Performed wetlands delineation and permitting on a variety of public and private projects. Provided environmental compliance for major wireless companies, including wetlands permitting, CAFRA permits, Phase I, Phase II, flood hazard permits. Oversaw a multi-million dollar US Army Corp of Engineers contract which included wetland delineation, permitting and mitigation projects and environmental assessments on various military bases. Performs T&E research and habitat evaluations.

The Entech Group, Inc. Denville, NJ - *Senior Environmental Scientist*

Responsible for the oversight for UST removal and site remediation projects. Provided oversight of homeowner remediation project for major insurance companies. Performed wetlands delineation and permitting on a variety of public and private projects.

J M Sorge, Inc., Sommerville, NJ - *Senior Project Manager*

Performed wetlands delineation and permitting on a variety of public and private projects. Provided oversight for UST removal and site remediation projects.

Direct Environmental, Inc., Hopelawn, NJ - *Director of Environmental Consulting Services*

Directed the environmental remediation and permitting department. Provided oversight and performed wetlands delineation and permitting on a variety of public and private projects.

Connolly Environmental, Inc., Denville, NJ - *Environmental Specialist and Wetland Analyst*

Responsible for environmental impact statements (EISs) for residential developments, wetlands delineation and permitting for various location throughout NJ. Provided environmental and ecological advise and review to several municipal planning boards.

PPE, Morris Plains, NJ - *Environmental Specialist and Wetland Analyst*

Responsible for wetland delineations; preparation of Statewide General Freshwater Wetland Permits and Transition Area Waiver, preparation of Individual Permits and Wetland Mitigation Plans; environmental monitoring, soil permeability tests.

The Raptor Trust, Millington, NJ - *Environmental Specialist*

Provided raptor education programs throughout NJ and NY. Performed raptor research and rehabilitation.

County of Essex, Roseland, NJ - *Environmental Specialist and Naturalist*

Provided environmental educational program to schools throughout NJ. Provided environmental resources to other County agencies and managed the County's geological museum.

PROFESSIONAL EXPERIENCE

Environmental Assessment (EA), T&E Species Studies and Wetlands Delineations for the US Army, US Air Force and US Army Corps of Engineers: The projects included the preparation of an EA for various project within the Picatinny Arsenal complex. These assessment analyzed all environmental impacts of the proposed construction and operation of the project area. These proposed facility has been designated as a key component supporting Homeland Security initiatives for this country, and is supported by NJ and the US Department of Defense. Using Army Regulations (AR) 200-1 (Environmental Protection and Enhancement) and AR 200-2 (Environmental Effects of Army Actions) as guidance, the EA were prepared for each project. The EA included a natural resource and habitat evaluation, cultural resource evaluation, and wetlands evaluation/delineation of wetland habitats found within and surrounding the subject property, and was further incorporated within the design of the proposed



facilities. The assessment included a thorough site inspection of the subject property, Picatinny Arsenal/government records reviews, and Picatinny Personnel interviews, relating to past and present conditions of the property. Through each source of information, recognized environmental impacts of the proposed actions, recommended mitigation measures and conclusions for the proposed facility were developed and were addressed within a final EA report. The projects also included the delineation of adjacent wetlands, lake and stream, the preparation of NJDEP permits and Indiana bat survey within the proposed project area. Specific projects included:

- Construction of a Homeland Defense Technologies and Security Readiness Center, Picatinny Arsenal, Rockaway, NJ
- Construction of a Hi- Tech Research and Development Park Facility, Picatinny Arsenal, Rockaway, NJ
- Demolition and Reconstruction of a New Post Chapel and Renovation of Building 3050, Picatinny Arsenal, Rockaway, NJ
- Construction of an Outdoor Firing Range within the G-2 Area, Picatinny Arsenal, Rockaway, NJ
- US Army Corps of Engineering, Community Activities Center, US Military Academy (USMA), West Point, NY
- US Army Corps of Engineers, Utility Privatization, USMA, West Point, NY
- US Air Force, McGuire Air Force Base, Re-Alignment of Under Ground Utilities

Phase I, Phase II and Various Permitting for Retrofitting Utility Towers for Telecommunication Facilities: Natural Resource Manager for over 12 year working with various telecommunication companies (Verizon Wireless, Sprint, T-Mobile, Metro PCS and ATT) for the retrofitting of utility company's (PSEG, JCP&L/GPU/First Energy, and Sussex Rural Electric Cooperative) towers and sub-station for wireless communication facilities. Work included Environmental Assessments, Phase One and Two investigations, PCB, Lead and Asbestos Surveys, Highlands Permitting, Wetlands Delineation and Permitting, Threatened and Endangered Species Investigation, Flood Hazard Permitting and Expert Testimony. Also provided communication between the Utility Companies, the Wireless Companies and State and local authorities to help the project through the environmental regulatory process and to ensure the project is completed and approved in a timely manner.

NEPA Compliance/Phase I/Phase II/SHPO Compliance/Wetlands Permits/Coastal Permits/Other various Permits Various locations NJ and NY, Verizon Wireless/Sprint/T-Mobile/MetroPCS/ATT: Mr. Lanna prepared NEPA and Phase I Documentation for proposed cellular communication tower sites located throughout NJ and NY. The purpose of the studies was to address NEPA requirements which include: wilderness areas, wildlife preserves, T&E species habitat, historical resources, Indian religious sites and floodplains. Studies included literature and record searches, field investigations. Mr. Lanna assessed indicators of significance (factors to consider) in conformance with NEPA Guidelines. Phase II investigations and various types of environmental permits were also performed.

NJ Turnpike Authority (NJTA), Multiple Projects, Statewide. As Project Manager, oversaw all aspects of the project including the preparation of a Sampling and Analysis Plan (SAP) to evaluate the potential for hazardous contamination in the area of the proposed site improvements. The SAP is intended to assess the potential contaminated conditions that may be encountered during proposed construction activities. An EO 215 Report, which is required by the NJDEP, was prepared for this project. The NJDEP issued EO 215 to give guidance on the form and content of EAs for transportation projects and for the evaluation of the significance of their projected environmental impacts on the surrounding communities. A site reconnaissance was conducted as the first element of the EO 215. This phase was followed by the collection of relevant existing documentation, files, maps, photographs, and other pertinent information. The EA Report was prepared for submission to the NJHA and for NJDEP review.

A Hazardous Waste Screening (HWS) was prepared for the project area. The HWS will be included as part of the E.O. 215 report. The HWS identified Environmental Sensitive Parcels (ESP) within the study area (approximately one square mile) that could impact the proposed improvements. Historical information, current conditions, and operations pertaining to the study area were reviewed. The HWS is being performed in accordance with the NJ Department of Transportation (NJDOT) Procedures Manual. The scope of work for the HWS was executed which included a visual reconnaissance of the study area; review of readily available Federal, state, and local regulatory records; examination of historical information; an evaluation of current and past operations and activities within the study area. Upon completion a written report documenting the HWS was prepared.

Wetland investigations were conducted. The investigation included the field delineation of all potential wetland areas within 150 feet of the proposed improvements. Upon completion of the field investigation A wetland delineation report was prepared to be submitted to the NJDEP for verification of the wetland areas. Based upon this report a determination will be made on what type of permits, if any, would be required to be obtained from the NJDEP to complete this project. Specific projects included:

- Grand Street Ramp Widening Project, Jersey City, NJ
- GSP Interchange 123 Improvements, Sayreville, NJ

Road/Bikeway Improvement Scoping Studies, Passaic, Somerset and Bergen Counties, NJ: Project Manager and Senior Environmental Scientist for the HWS associated with various multi-county road or bikeway improvement projects. The HWS identified ESPs within study areas that could impact the proposed improvements. Historical information, current conditions, and operations pertaining to the study area were reviewed. The HWS was performed in accordance with the NJDOT Procedures Manual. The scope of work was executed for the HWS which included a visual reconnaissance of the study area; review of readily available Federal, state, and local regulatory records; examination of historical information; an evaluation of current and past

operations and activities within the study area. Upon completion, a written report documenting the HWS was prepared and submitted. Specific projects included:

- Two Bridges Improvements, Passaic County, NJ
- Chimney Rock Road and Route 22 Improvements, Somerset County, NJ
- Route 17/ Passaic Street Scoping Project, Bergen County, NJ
- Hazardous Materials, Screening/Preliminary Assessment (PA), Two Bridges Project, Wayne, NJ
- County of Passaic/NJDOT, Fairfield and Lincoln Park, NJ,
- NJDOT, Route 29 Bikeway Project, Adjacent to Delaware River, Trenton, NJ

Lead and Asbestos Investigation/Geotechnical Investigation/Subsurface Environmental Investigation, Clifton Bus Facility, Clifton, NJ, NJ Transit: Project Manager and Senior Environmental Scientist for the lead/asbestos sampling and investigation, geotechnical investigation, and the preliminary subsurface sampling and analysis investigation associated with the Clifton Bus Facility project. The Clifton Bus Facility is the first of several NJ Transit fast track projects. Lead and asbestos investigation were conducted of a building proposed to be raised as part of this project. Samples were obtained to verify the existence of lead-based paint (LBP) or asbestos containing material (ACM). Once the investigation was complete a report was prepared, specification for the removal of the LBP and ACM were prepared prior to the building being raised.

A geotechnical investigation program was developed to acquire information and data that will be included in the development of design alternatives. Existing published data was compiled and reviewed, available data and geotechnical reports from relevant projects in the subject area and developed a subsurface exploration program. A geotechnical field investigation was performed which included obtaining soil samples and information, blow counts and rock core data. All of this information was compiled into a report which included footing design parameters and site constraints.

A preliminary subsurface environmental investigation was performed which included a detailed technical review of all available and relevant documentation for the proposed site relative to environmental concerns as well as information generated by NJ Transit's Environmental Services Unit. As Project Manager, oversaw all aspects of this portion of the project including the submission to NJ Transit of a SAP that evaluated the potential for hazardous contamination in the area of the proposed site improvements. The SAP was intended to assess the potential contaminated conditions that may be encountered during proposed construction activities. A subsurface environmental field investigation was completed which included obtaining soil and groundwater samples. All of the information was compiled into a report used by NJ Transit in the preparing costs for the final design of the project.

Wolpert Trust/Heterene Chemical, Paterson, NJ: Project Manager for the removal of numerous USTs and a groundwater investigation which included the installation of groundwater monitoring wells, groundwater sampling, development of groundwater contour mapping and the preparation of a groundwater cleanup plan.

NYC Department of Transportation (NYCDOT) - Staten Island Ferry Terminal: Project Manager for the NYCDOT project involving the removal of two 15,000 gallon No. 6 fuel oil USTs. The two USTs were located adjacent to the footings of the Ferry Terminal Building and 20 feet inside a bulkhead adjacent to NY Harbor. Removal activities included site dewatering, contaminated soil excavation, backfilling and groundwater treatment. The project also included the design, setup, maintenance and sampling of a groundwater treatment system to remove #6 fuel oil from the groundwater adjacent to the Ferry Terminal building. Provided written reports and updates to the NYC Department of Environmental Protection (NYCDEP) and the NYCDOT. Successful in remediating both soil and groundwater contamination and closing out the site with the NYCDEP.

Texaco Service Station - Fort Lee, NJ: Project Manager for a national petroleum company to perform a turnkey removal and remedial operation at a former gasoline station. The project included providing the client with all necessary local and state permits, removal of six gasoline and waste oil USTs, backfilling and site restoration. Extensive soil and groundwater contamination were encountered at the site, resulting in the local fire department and the county HAZMAT team needed on-site in case of an emergency. Six USTs, plus an additional four USTs not previously known to exist at the site, were removed. Large quantities of gasoline contaminated soil were stockpiled and removed off-site. The safe removal of the USTs, contaminated soil and groundwater was overseen and managed.

LR Metals, Edison, NJ: Project Manager providing services to a mid-sized metal treatment establishment in response to a study of an adjacent property with identified groundwater contamination. The client was named in the report as a potential source and thus required the services of a qualified groundwater consultant to access the property and review the claims of the consultant for the adjacent facility. The investigation of chlorinated solvents in the groundwater was performed to determine the source of the contamination. The installation of groundwater monitoring well, groundwater sampling, historical data research and report preparation was performed.

United Steel Products, East Orange, NJ: Project Manager to a large steel forming company providing Industrial Site Recovery Act (ISRA) submission and UST removal, contaminated soil removal, soil remediation and reports to the NJDEP. The client received an ISRA clearance from the NJDEP.

United Steel Products, Newark, NJ: Project Manager to a large steel forming company providing environmental investigation services to locate areas of concern which included former hazardous material storage, former USTs and other areas of concern so the owner could prepare the facility for sale.

Cardinal Glove, Clifton, NJ: Project Manager to a former glove manufacturing facility providing ISRA submissions, groundwater studies, soil remediation and report submissions.

