ATLANTIC CITY ELECTRIC
QUINTON - WIND PORT 69 KV
TRANSMISSION LINE PROJECT

APPLICATION FOR

FRESHWATER WETLAND INDIVIDUAL PERMIT, COASTAL WETLAND INDIVIDUAL PERMIT, WATERFRONT DEVELOPMENT IN-WATER PERMIT AND WATER QUALITY CERTIFICATE

ENVIRONMENTAL REPORT

Submitted to:

New Jersey Department of Environmental Protection
Division of Land Use Regulation

Submitted by:

atlantic city electric℠
AN EXELON COMPANY

Prepared By:

WSP

May 2023

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PART I. INTRODUCTION

Atlantic City Electric (ACE), a wholly-owned subsidiary of Exelon Corporation (Exelon), is proposing to construct a new 11.25 mile 69 kilovolt (kV) transmission line between the existing Quinton 69 kV Substation (Quinton Substation) located in Quinton Township, Salem County, to the proposed customer-owned Wind Port 69 kV Substation (Wind Port Substation) located adjacent to the Hope Creek Nuclear Generating Station in Lower Alloways Creek Township, Salem County, New Jersey (NJ) (the Project). Approximately six miles of the Project will rebuild the former Quinton-Hancock 69 kV transmission line, which is currently utilized as a 12 kV distribution line. New transmission structures will consist of steel monopole approximately 47-104 feet in height, with an average of 78 feet in height. Freshwater and coastal wetlands were delineated within the Project area.

This Environmental Report provides detailed information regarding the Project including project location, proposed activities, existing conditions and proposed impacts are included in the Environmental Report. Proposed construction activities are shown on the Freshwater Wetland and Coastal Individual Permit Plans and the Waterfront Development Plans.

Under the Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A), the New Jersey Department of Environmental Protection (NJDEP) Division of Land Resource Protection (DLRP) regulates activities within freshwater wetlands, transition areas and State open waters. Proposed activities that do not meet the requirements of an authorization under a general permit-by-certification, an authorization under a general permit, or a transition area waiver will require authorization under a Freshwater Wetland Individual Permit pursuant to N.J.A.C. 7:7A-9.

The NJDEP DLRP regulates the use and development of coastal resources though the Coastal Area Facility Review Act of 1973 (CAFRA) (N.J.S.A. 13:19-1 et seq.), the Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et seq.), the Waterfront Development Law (N.J.S.A. 12:5-1 et seq.) and the Coastal Zone Management Rules (N.J.A.C. 7:7). Although portions of the Project area are located within the boundaries of the CAFRA zone, in accordance with N.J.A.C. 7:7-2.2(b)2ix, if located in an area other than a beach or dune "the construction, maintenance, repair or replacement of power lines" is not considered public development. Based on past guidance provided by the NJDEP, construction activities associated with transmission lines in all other areas within the CAFRA zone do not require a CAFRA permit.

The Wetlands Act of 1970 regulates the draining, dredging, excavation, or deposition of material, and the erection of any structure, driving of pilings or placing of obstructions in any coastal wetlands that have been mapped or delineated pursuant to the Coastal Wetlands Act of 1970. Areas identified as the Upper Wetlands Boundary (UWB) by the NJDEP, Office of Information Resources Management (OIRM), Bureau of Geographic Information Systems (BGIS) (2002) were delineated under the Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et seq). Impacts to mapped coastal wetlands are proposed as part of this Project. The project will comply with various coastal zone management policies defined in the Rules on Coastal Zone Management (N.J.A.C. 7:7E). Through the authority of the Waterfront Development Act, the NJDEP regulates development in the waterfront area. Pursuant to N.J.A.C. 7:7-2.4, within the CAFRA zone, the regulated waterfront area shall include any tidal waterway of New Jersey and all lands lying thereunder, up to and including the mean high-water line. Portions of the Project area are located below the mean high-water line and therefore regulated by the Waterfront Development Act.

The Flood Hazard Area Control Act Rules (N.J.A.C. 7:13) set standards for the development within flood hazard area and riparian zones. Flood Hazard Area regulations govern human disturbance to the land and vegetation in flood hazard area of a regulated water and riparian zone of a regulated water. No person shall engage in a regulated activity within a regulated area without a flood hazard area authorization of permit as required by N.J.A.C. 7:13 or a coastal permit as required by N.J.A.C. 7:7. Although the Project is located within the CAFRA area and will require a coastal permit under N.J.A.C. 7:7 for waterfront development and impacts to coastal wetland, the transmission line is exempt from CAFRA requirement; therefore a Flood Hazard Area permit is required for impacts to regulated flood hazard areas and riparian zones.

ACE is applying to the NJDEP for the following permit approvals, authorizations and certification for activities associated with the Quinton-Wind Port Project.

- Freshwater Wetlands Individual Permit;
- Coastal Wetlands Individual Permit;
- Waterfront Development Individual Permit,
- Flood Hazard Area Individual Permit with Verification;
- Flood Hazard Area Permit-by-Rule Permit and
- Water Quality Certificate.

The Compliance Statement (submitted under separate cover) demonstrates the Project's compliance with the Freshwater Wetland Protection Act Rules for the Freshwater Wetland Individual Permit; Coastal Zone Management Rules for the Coastal Wetland Individual Permit and Waterfront Development Individual Permit and Flood Hazard Area Control Act Rules for the Flood Hazard Individual Permit and Permit-by-Rule.

PART II. PROJECT DESCRIPTION

1.0 PROJECT LOCATION

ACE, a wholly owned subsidiary of Exelon, is proposing to construct a new 11.25 mile 69 kV transmission line between the existing Quinton Substation located in Quinton Township, Salem County, to the proposed customer-owned Wind Port Substation located adjacent to the Hope Creek Nuclear Generating Station in Lower Alloways Creek Township, Salem County, NJ (the Project) (***Figure 1***).

The Project is shown on the U.S. Geologic Survey (USGS) topographic maps of Salem, Canton, and Taylors Bridge, 7.5-minute (1:24,000) quadrangle, as shown in ***Figure 1.*** The Project area centers on approximately a northing of 220,376 and easting of 243,891 New Jersey State Plane Feet. State plane coordinates, at 1,000-foot intervals along the entire length of the linear Project area, are depicted on ***Figure 2***. ***Figure 3*** shows the Project relative to local roads. Tax maps for the Project are provided in ***Appendix A***.

ACE has identified a laydown area to utilize as a mobilization and staging areas for the Project. The laydown area is a large grass area, located at the Wind Port Substation, identified as Block 26, Lot 5.02 on the Lower Alloways Creek Township tax map.

2.0 PROJECT DESCRIPTION

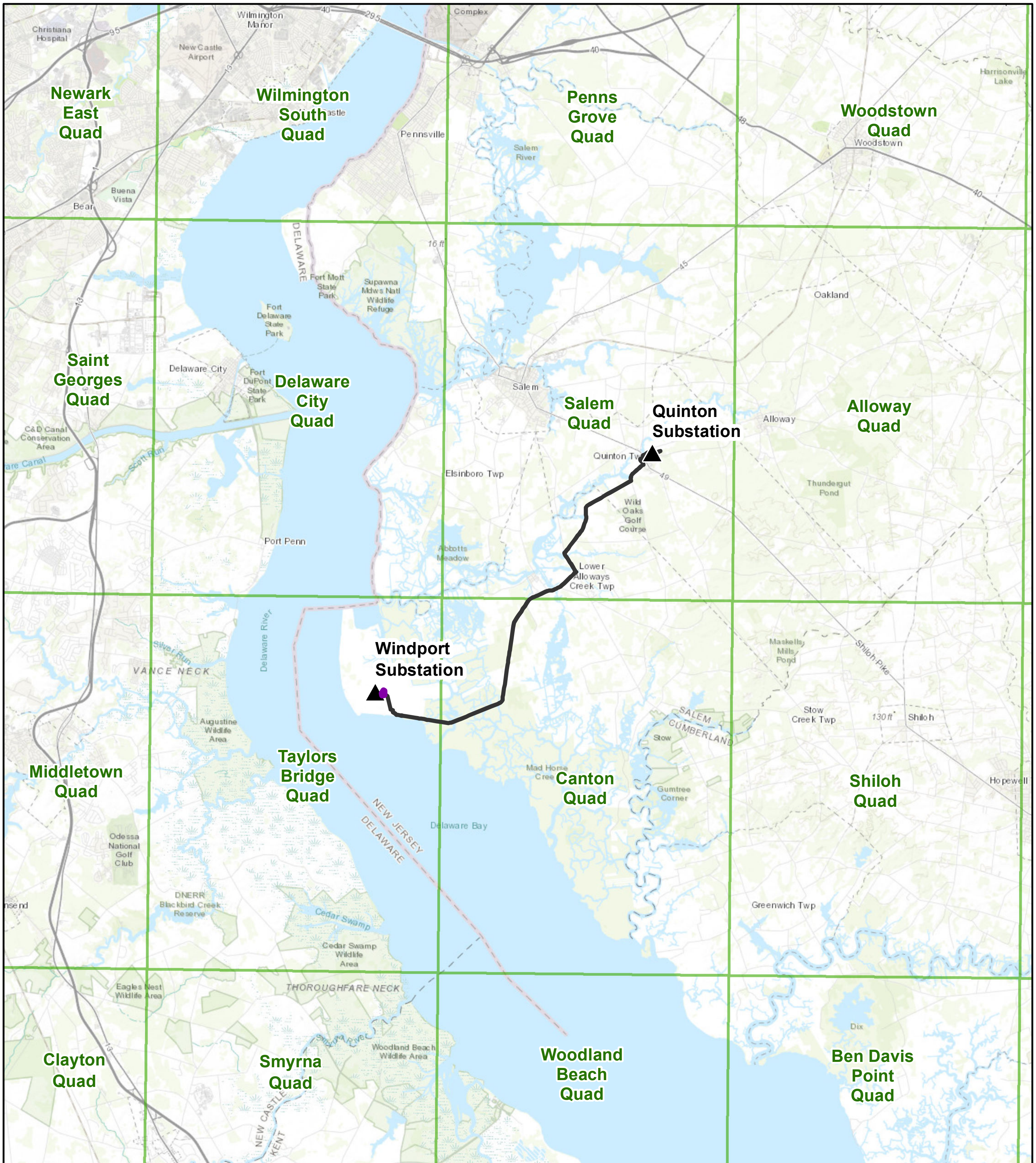
The Project is a 11.25 mile long single-circuit 69 kV transmission line Project located in Salem County. The new 69 kV transmission line will connect the new customer-owner Wind Port Substation to ACE's existing Quinton Substation. The new substation will supply energy for the New Jersey Wind Port (NJWP). The NJWP is anticipated to be a port utilized for the mobilization and construction of offshore wind components. NJWP is uniquely positioned for easy access to support the projects in nearly 50 percent of the off-shore lease areas.

The majority of the proposed transmission line will be located within existing ACE ROW and roadway ROW. Approximately 6 miles of the Project will be located within the former Quinton-Hancock 69 kV transmission line (de-energized) ROW. New transmission structures will consist of steel monopole approximately 47-104 feet in height.

As the Project exits the proposed customer-owned Wind Port Substation, in Lower Alloways Creek Township, Salem County, NJ the transmission line heads generally southeast for approximately 0.83 miles, following Hope Creek Road along a large tidal wetland complex. At this point, the transmission line turns generally east for approximately 2.59 miles, following Buttonwood Avenue, which turns into Alloway Creek Neck Road. The transmission line turns generally north, continuing along Alloway Creek Neck Road for approximately 3.15 miles. At this point, the transmission line continues to head northeast, along Cuff Road for approximately 0.53 miles. The Project then turns north for approximately 0.52 miles along State Route 623, New Bridge Road.

Next, the Project crosses over State Route 623, New Bridge Road, and continues generally northeast, along State Route 651, Beasley Neck Road for approximately 2.41 miles. While following State Route 651, the Project crosses into Quinton Township, Salem County, NJ. The Project then turns north at the intersection of State Route 654, Sickler Street. The Project generally heads northeast for approximately 0.50 miles toward Quinton, NJ. The Project, up to this point, generally crossed wetlands, agricultural and residential areas

The Project then turns north and continues generally north for approximately 0.29 miles through a residential area, following New Street, Cottage Ave, and East Main Street. The Project then heads generally northeast along State Route 581, Quinton Alloway Road for approximately 0.13 miles. Finally, the Project heads east along Waterworks Road for approximately 0.10 miles before terminating at the existing Quinton Substation in Quinton Township, Salem County, NJ.

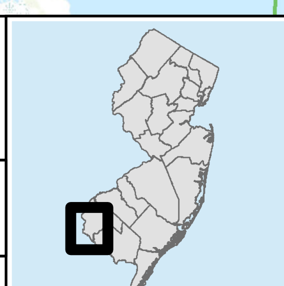


Substation
Right of Way
Laydown Area
USGS 24k Topo Quad Boundary

Source:
ESRI USGS
Topographic Map Service

Coordinate System:
State Plane New Jersey
Datum: NAD 83

March 2023



QUINTON - WIND PORT 69 KV TRANSMISSION LINE PROJECT

Project Location Map

atlantic city electric
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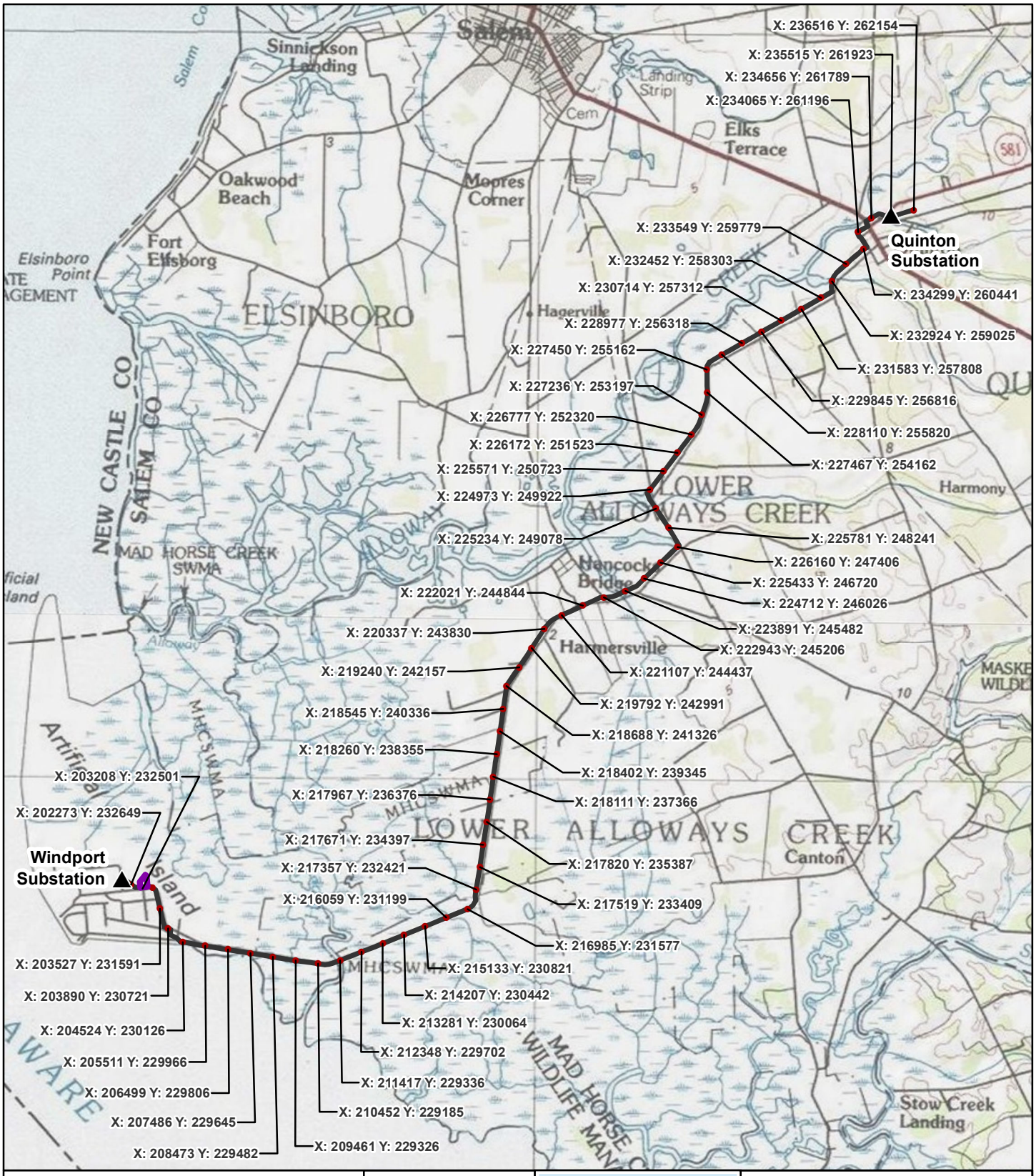
wsp

0 1.5 3 Miles

N


Quinton Substation
Windport Substation
X: 236516 Y: 262154
X: 235515 Y: 261923
X: 234656 Y: 261789
X: 234065 Y: 261196
X: 234299 Y: 260441
X: 233549 Y: 259779
X: 232924 Y: 259025
X: 232452 Y: 258303
X: 231583 Y: 257808
X: 230714 Y: 257312
X: 229845 Y: 256816
X: 228977 Y: 256318
X: 228110 Y: 255820
X: 227450 Y: 255162
X: 227467 Y: 254162
X: 227236 Y: 253197
X: 226777 Y: 252320
X: 226172 Y: 251523
X: 225781 Y: 248241
X: 225571 Y: 250723
X: 226160 Y: 247406
X: 224973 Y: 249922
X: 225433 Y: 246720
X: 225234 Y: 249078
X: 224712 Y: 246026
X: 223891 Y: 245482
X: 222943 Y: 245206
X: 222021 Y: 244844
X: 221107 Y: 244437
X: 220337 Y: 243830
X: 219792 Y: 242991
X: 219240 Y: 242157
X: 218688 Y: 241326
X: 218545 Y: 240336
X: 218402 Y: 239345
X: 218260 Y: 238355
X: 218111 Y: 237366
X: 217967 Y: 236376
X: 217820 Y: 235387
X: 217671 Y: 234397
X: 217519 Y: 233409
X: 217357 Y: 232421
X: 216985 Y: 231577
X: 216059 Y: 231199
X: 215133 Y: 230821
X: 214207 Y: 230442
X: 213281 Y: 230064
X: 212348 Y: 229702
X: 211417 Y: 229336
X: 210452 Y: 229185
X: 209461 Y: 229326
X: 208473 Y: 229482
X: 207486 Y: 229645
X: 206499 Y: 229806
X: 205511 Y: 229966
X: 204524 Y: 230126
X: 203890 Y: 230721
X: 203527 Y: 231591
X: 203208 Y: 232501
X: 202273 Y: 232649
Salem
Sinnickson Landing
Oakwood Beach
Fort Elfsborg
Elsinboro Point
ELSINBORO
Hagerville
Elks Terrace
Moores Corner
Landing Strip
Cem
NEW CASTLE CO
SALEM CO
MAD HORSE CREEK SWMA
Alloway
Hancocks Bridge
Harmersville
LOWER ALLOWAYS CREEK
Harmony
Canton
Stow Creek Landing
MAD HORSE WILDLIFE MAN
MHCSWMA
Artificial Island
Substation
Centerline Intervals (1,000 ft.)
Right of Way
Laydown Area
Source: ESRI USGS Topographic Map Service
Coordinate System: State Plane New Jersey Datum: NAD 83
March 2023
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USGS Topographic Map
atlantic city electric
An Exelon Company
wsp
0 0.5 1 Miles
N

Substation
Existing Transmission Line
Right of Way
Laydown Area

Source:
ESRI USGS
Topographic Map Service

Coordinate System:
State Plane New Jersey
Datum: NAD 83

March 2023

QUINTON - WIND PORT 69 KV TRANSMISSION LINE PROJECT

Road Map

atlantic city electric
An Exelon Company

wsp

0 0.5 1 Miles

N

The proposed Project will be constructed within the existing roadway ROW and/or ACE ROW. In order to construct the new 69 kV transmission line within the existing ROW, the existing wooden monopole structures will be replaced with steel monopoles in close proximity to the existing structures. Angle structures will be replaced as close as possible to the existing structure to maximize utilization of the current cleared and maintained ROW. Due to increase in voltage and required vegetation clearing distance for the 69 kV transmission line, widening of the existing cleared ROW will be required.

The proposed Project will involve four main efforts:

1) Construction of the 69 kV transmission lines;
2) Construction of temporary access roads, work pads and pull sites;
3) Wind Port Staging area; and
4) ROW clearing and maintenance.

Proposed construction activities are shown on the Freshwater Wetland & Coastal Wetland Plans and Waterfront Development Plans.

2.1 CONSTRUCTION/REBUILDING OF THE 69 KV TRANSMISSION LINES

The existing 16-inch wooden monopole structures will be removed and replaced with new-galvanized steel monopole structures. For the majority of the Project, the proposed structures will replace the existing wooden monopole structures on a pole-for-pole basis due to underbuilt distribution lines. Several different transmission structure types will be used for the Project. Structure types are dependent on the proposed location, spanning distance, structural loading criteria, location of existing facilities, environmental conditions and ROW width. A total of 286 structures, including 283 steel structures and 3 wooden structures, will be installed as part of this Project. Structure heights will range from 47 feet to 104 feet, with an average height of 78 feet. All transmission structures and components will be designed in accordance with PHI Overhead Transmission Engineering Design Criteria, Revision 1.5 (November 4, 2019). Typical drawings of the proposed structure types are included in ***Appendix B***.

Three types of foundations will be utilized for transmission structures: drilled piers, caissons (socketed and flanged) and direct embedded. Foundation types are dependent on the proposed location, structural loading criteria and environmental conditions. Steel monopole structures located at turning points along the ROW or traversing under overhead transmission line will require larger foundations than the typical steel monopole structure due to increased loads associated with angles and longer spanning distances needed. Average diameter of a drilled pier foundation is approximately 6.9 feet. The majority of the foundations will consist of caissons with an average diameter of approximately 3.3 feet.

Existing wooden monopole structures in the wetlands will be cut just above grade to minimize/avoid ground disturbances. Removal/excavation of the foundation below the existing grade e is not proposed.

Construction of the 69 kV transmission line will require re-routing the existing distribution line underground in two short segments. All underground distribution lines will be constructed via horizontal directional drilling (HDD). The first segment located near structures 206, will require re-routing approximately 300 feet of distribution line under Alloways Creek Road and a gravel access road. The second segment is located near structures 157 to 154, will require re-routing approximately 900 feet of distribution line under the existing PSE&G 500 kV transmission line.

2.2 CONSTRUCTION OF TEMPORARY ACCESS ROADS, WORK PADS AND PULL SITES

Part of the overall engineering design of the Project is to ensure that suitable construction access is available to each proposed structure and associated work pad. Construction of transmission structures requires that each proposed structure and work pad be accessible by equipment capable of installing the foundation and structure. This includes miscellaneous equipment and vehicles, including cranes, capable of erecting the structures. Construction access for the majority of the structures will be from the adjacent roadway and/or shoulder ROW. In upland areas, access roads and

work pads will consist of at grade ground and dirt roads. The use of geotextiles and the placement of gravel aggregates are not proposed. Access roads and work pads within wetlands and transition areas will consist of prefabricated, interlocking composite mats. No tree clearing is anticipated for the establishment of temporary access roads. All off-ROW access roads traverse existing roads/open areas cleared of trees. All tree clearing associated with this Project is required to meet required wire and boarder zone clearance of the transmission line for safety requirements, not for temporary access.

At each proposed structure location, a level work pad will be required for construction vehicles, foundation installation and structure assembly. In areas where adjacent roadways will be utilized, an area approximately 40 feet by 60 feet will be needed for construction of each structure.

After all structures are erected in a specific segment along the route, the conductor (wires) and communications/ground wires will be installed. Conductors (wires) will be pulled and tensioned from several locations along the transmission line route (pulling locations). Pulling locations are required approximately every ½ to 1 mile along the ROW or at angle structures. Pulling locations are approximately 160 feet long by 40 feet wide each to accommodate required equipment, however dimensions of the pull sites will vary depending on site conditions. Necessary equipment required at each pulling location includes large construction vehicles with spooled reels consisting of the conductors (wires).

Temporarily disturbed areas (access roads, work pads, pulling locations, etc.) will be restored to their pre-existing conditions. All disturbed areas will be provided with a permanent vegetative cover in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey, and a project specific Soil Erosion and Sediment Control Plan approved by the Cumberland Salem Soil Conservation District, or as directed by the ACE Environmental Management.

2.3 WIND PORT STAGING AREA

ACE proposed to utilize a large grassy area (approximately 4 acres) within Block 26 Lots 5 and 5.02 in Lower Alloways Creek Township, Salem County as an equipment staging area. Construction mats will be utilized to minimize disturbance.

2.4 TRANSMISSION ROW CLEARANCE AND MAINTENANCE

The entire Project will be constructed within existing roadway and transmission line ROW. The existing ROW varies in width from approximately 40 to 60 feet. Although the Project will be constructed in existing ROW, additional tree clearing will be require in specific areas. The Project proposes clearing of vegetation within 30 feet of the proposed project centerline. The vegetative clearing distance along a transmission ROW is regulated by the Federal Energy Regulatory Commission (FERC) and the New Jersey Board of Public Utilities (BPU). The initial clearing will be performed in accordance with N.J.A.C. 14:5-9.6 (BPU Electric Service Rules Vegetation Management Standards for Transmission Line Maintenance) and ACE's Vegetation Management Program. After construction of the Project, continual vegetation maintenance of the ROW will be authorized under ACE's Statewide Blanket General Permit. Any required clearing of regulated forested vegetation within the ROW has been included in the impact calculations as a permanent impact (Part IV, Section 1.0).

2.5 CONSTRUCTION SCHEDULE

Construction of the Project is proposed to commence in early September 2023 to meet the in-service date of May 31, 2024.

3.0 PROJECT PURPOSE

ACE purpose to construct a new 69 kV transmission line from the existing ACE-owned Quinton Substation to supply power to a new customer-owned Wind Port Substation to support the New Jersey Wind Port (NJWP) Project currently under construction.

The NJWP is part of a larger sustainable energy initiative put forth by the State of New Jersey and is designed to support offshore wind energy development in New Jersey and along the entire eastern United States. The New Jersey Economic Development Authority (NJEDA) is leading the development of the project on behalf of the State, working alongside key departments and agencies such as the Governor's Office, the Department of Treasury, and the Board of Public Utilities.[1]

4.0 ALTERNATIVE ANALYSIS

A Segment and Alternative Route Analysis was prepared by AECOM in 2021 identify and evaluate potential routing segments for a new 69 kV transmission line between the existing Quinton Substation and the proposed customer-owned Wind Port Substation. A complete copy of the Segment and Alternative Route Analysis is included as ***Appendix C***.

The Study identified potential transmission line segments within the Study Area, quantified metrics for each segment, combined those into Alternative Routes, and quantitatively compared the resulting Alternative Routes to each other. Factoring in qualitative metrics leads to the identification of the Preferred Route, which is the route with the least potential for impacts to the built and natural environment and is feasible for engineering and construction.

A total of 46 segments were identified that included distribution underbuild options along many of the local roadways or crossed over agricultural lands or marsh areas where possible. Several of the segments mirrored the alignment of the inactive Quinton-Hancock 69 kV transmission line that parallels the roadways from the Quinton Substation to the former Hancock Substation that was located on Artificial Island.

The Study concluded Alternative Route 1 was the Preferred Route. Alternative Route 1 is preferred based on providing a viable route around the town of Quinton while minimizing the need for new easement rights, predominantly using the inactive Quinton-Hancock 69 kV transmission line corridor for most of the new alignment, and reducing environmental impacts compared to other alternatives.

5.0 AVOIDANCE AND MINIMIZATION

The design and placement of the new transmission line structures were engineered with an understanding of the importance of avoidance and/or minimization of impacts to regulated areas. Further efforts to minimize regulated impacts associated with the Linear Project include:

5.1 PLACEMENT OF TRANSMISSION STRUCTURES

The placement of transmission structures is dependent on several factors including existing distribution and transmission lines, span length, topography and existing land use. For the majority of the Project, the proposed structures will replace the existing wooden structures on a pole-for-pole basis. The new structures will be placed immediately adjacent (within approximately 15 to 20 feet) of the existing monopole structures matching the existing spanning distances. A pole for pole design is required due to the underbuilt distribution lines.

Turning/angle structures needed to be located within the immediately vicinity of the old structure to keep the centerline of the transmission line from deviating from the existing ROW, therefore minimizing impacts to the surrounding property owners. Where the structure placement intercepted a regulated resource due to engineering requirements, design engineers worked with ACE to minimize potential impacts to regulated areas.

5.2 DESIGN OF TEMPORARY ACCESS ROADS, WORK PADS AND PULLING LOCATIONS

Temporary access roads, work pads and pulling locations have been designed to provide a suitable surface for construction vehicles. During preliminary design of the access roads, work pads and pulling locations, regulated areas

1 New Jersey Wind Port Lower Alloways Creek. Fast Facts about NJWP. https://nj.gov/windport/about/pdf/NJOSW_FastFacts.pdf

were delineated, and works pads were relocated (if possible) outside of wetlands, stream channels, and open waters. In order to minimize temporary wetland impacts, the majority of structures will be installed from the adjacent roadway and shoulder ROW, eliminating the needs for linear access roads through wetlands.

5.3 ROW CLEARANCE AND MAINTENANCE

The majority of the existing ROW has been maintained as scrub-shrub and emergent habitat under ACE's NJDEP Blanket Permit (No. 0000-14-0010.1) Freshwater Wetlands General Permit #21; Coastal Wetlands Permit; Waterfront Development Individual Permit, Flood Hazard Area Individual Permit; and Water Quality Certificate. However, the construction of the proposed Project will require the clearing of forest stands in both wetlands and uplands along the existing ROW in areas not previously maintained by ACE. The vegetative clearing distance along a transmission ROW is regulated by the FERC and the New Jersey BPU. To minimize impacts to forested wetlands, the tree trunk line of forested wetlands was surveyed, and the area was reviewed to determine if tree trimming, or the removal of individual trees (hazard/danger trees) could be removed to satisfy the mandatory clearing distance.

The initial clearing will be performed in accordance with N.J.A.C. 14:5-9.6 (BPU Electric Service Rules Vegetation Management Standards for Transmission Line Maintenance) and ACE's Vegetation Management Program. After construction of the Project, continual vegetation maintenance of the ROW will be authorized under ACE's NJDEP Blanket Permit.

PART III. EXISTING ENVIRONMENTAL CONDITIONS

1.0 GEOMORPHOLOGY

The Project is located entirely within the Coastal Plain physiographic province.[2] The Coastal Plain is underlain by a southeasterly dipping and thickening sequence of unconsolidated sediments which lie unconformably upon a floor of predominantly crystalline rock. These unconsolidated deposits are thick wedges of sands, gravels, clays and silts of the Cretaceous and younger age that were laid down in a deltaic environment and subsequently eroded to the present landform. More recent deposits of Pleistocene sands and gravels and alluvium blanket the Cretaceous rocks, except where outcrops occur, and have little visible effect on the topography between the Coastal Plain Province and the northerly Piedmont Province. Erosion and redeposition have created a level to gently rolling topography, with little relief except near stream channels.

2.0 SOILS

The *Soil Survey of Salem County, New Jersey* (USDA-NRCS 2002), and the Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov) indicate that soils within the Project area consist of 11 soil map units and water (***Figure 5***). A soil map unit is a grouping of soils by their natural landscape and soil patterns. Soil exhibiting similar characteristics and falling within certain defined limits are classified together as a soil series. Most map unit names specify the dominant soils series, which is part of a soil's taxonomy that includes order, great group, subgroup, family and series. Soil map unit names also typically include phases of soil series that convey additional information about a map unit, including attributes such as slope, surface texture, flooding and ponding, surface fragments, degree of erosion, and climate.

Three of the two soil mapping units identified within the Project area are classified as hydric by the NRCS, one is classified as predominately hydric, four are classified as predominantly nonhydric, and the remaining 4 are nonhydric. Hydric soils are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (59 FR 35680; 7/13/1994). Hydric soils are therefore typically found within wetlands. The soil map units within the project area are listed in ***Table 1***.

3.0 HYDROLOGY

The Project area is located within the Lower Delaware (Hydrologic Unit Code (HUC) 6: 020402) basin; the Cohansey-Maurice (HUC 8: 02040206) sub-basin; the Stow Creek-Frontal Delaware Bay (HUC 10: 0204020606) watershed; and the Alloway Creek (HUC 10: 0204020602) watershed. Sub-watersheds located within the Project Area are listed in ***Table 2***. A sub-watershed is a smaller drainage basin of a local stream that eventually drains to a central point of the larger watershed. The NJDEP Division of Watershed Management has divided New Jersey into Watershed Management Area and this portion of the project area is located in the Maurice, Salem, and Cohansey Watershed Management Area (WMA 17).

2 NJDEP. 2023. NJ-GeoWeb: Geology Layers. Available online at: https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=02251e521d97454aabadfd8cf168e44d. Accessed February 1, 2023.

ApbAv - Appoquinimink-Broadkill complex, 0 to 1 percent slopes, very frequently flooded
MamnAv - Mannington-Nanticoke complex, 0 to 1 percent slopes, very frequently flooded
MbrA - Matapeake silt loam, 0 to 2 percent slopes
MbrB - Matapeake silt loam, 2 to 5 percent slopes
MbuA - Mattapex silt loam, 0 to 2 percent slopes, northern coastal plain
MbuB - Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain
OTMA - Othello, Fallsington, and Trussum soils, 0 to 2 percent slopes
TrkAv - Transquaking mucky peat, 0 to 1 percent slopes, very frequently flooded
UR - Urban land
UddfB - Udorthents, dredged fine material, 0 to 8 percent slopes
WATER - Water
WoeA - Woodstown sandy loam, 0 to 2 percent slopes, Northern Coastal Plain

Windport Substation
Hope Creek Rd
Buttonwood Ave
Alloway Creek Neck Rd
Grosscup Rd
Pancoast Rd
Powell St
Salem County
Lower Alloways Creek Township

- Substation
- ROW
- Laydown Area
- County Boundary
- Municipality Boundary
- Soil Boundary

Sources:
Imagery (NAIP)
NHD (USGS)
Soils (USDA-NRCS)

Coordinate System:
New Jersey State Plane
NAD 1983

May 11, 2023

QUINTON-WIND PORT 69 KV
TRANSMISSION LINE PROJECT

Soils Map

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0 750 1,500 3,000 Feet

AhmB - Alloway sandy loam, 2 to 5 percent slopes
AhpB - Alloway loam, 2 to 5 percent slopes
AhpC - Alloway loam, 5 to 10 percent slopes
AhrA - Alloway silt loam, 0 to 2 percent slopes
AhrB - Alloway silt loam, 2 to 5 percent slopes
ApbAv - Appoquinimink-Broadkill complex, 0 to 1 percent slopes, very frequently flooded
ChtA - Chillum silt loam, 0 to 2 percent slopes
ChtB - Chillum silt loam, 2 to 5 percent slopes
DocB - Downer loamy sand, 0 to 5 percent slopes, Northern Coastal Plain
DocC - Downer loamy sand, 5 to 10 percent slopes, Northern Coastal Plain
HbmB - Hammonton loamy sand, 0 to 5 percent slopes
MakAt - Manahawkin muck, 0 to 2 percent slopes, frequently flooded
MamnAv - Mannington-Nanticoke complex, 0 to 1 percent slopes, very frequently flooded
MbrA - Matapeake silt loam, 0 to 2 percent slopes
MbrB - Matapeake silt loam, 2 to 5 percent slopes
MbuA - Mattapex silt loam, 0 to 2 percent slopes, northern coastal plain
MbuB - Mattapex silt loam, 2 to 5 percent slopes, northern coastal plain
MutA - Muttontown sandy loam, 0 to 2 percent slopes
OTMA - Othello, Fallsington, and Trussum soils, 0 to 2 percent slopes
PEEAR - Pedricktown, Askecksy, and Mullica soils, 0 to 2 percent slopes, rarely flooded
PHG - Pits, sand and gravel
SacB - Sassafras sandy loam, 2 to 5 percent slopes, Northern Coastal Plain
SafA - Sassafras loam, 0 to 2 percent slopes
TrkAv - Transquaking mucky peat, 0 to 1 percent slopes, very frequently flooded
WATER - Water
WoeA - Woodstown sandy loam, 0 to 2 percent slopes, Northern Coastal Plain

Mannington
Salem County
Quinton Township
Lower Alloways Creek Township
Elsinboro Township

- Substation
- ROW
- Laydown Area
- County Boundary
- Municipality Boundary
- Soil Boundary

Page 2 of 2

Sources:
Imagery (NAIP)
NHD (USGS)
Soils (USDA-NRCS)

Coordinate System:
New Jersey State Plane
NAD 1983

May 11, 2023

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TRANSMISSION LINE PROJECT

Soils Map

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TABLE 1. SOIL CHARACTERISTICS WITHIN THE PROJECT AREA

Map Unit Symbol	Mapping Unit Name	Drainage Characteristics	Hydric Rating*
DocB	Downer loamy sand, 0 to 5 percent slopes, Northern Coastal Plain	Well drained	5% Predominantly Nonhydric
MamnAv	Mannington-Nanticoke complex, 0 to 1 percent slopes, very frequently flooded	Very poorly drained	90% Predominately Hydric
MbrA	Matapeake silt loam, 0 to 2 percent slopes	Well drained	Nonhydric
MbrB	Matapeake silt loam, 2 to 5 percent slopes	Well drained	Nonhydric
MbuA	Mattapex silt loam, 0 to 2 percent slopes, northern coastal plain	Moderately well drained	5% Predominantly Nonhydric
OTMA	Othello, Fallsington, and Trussum soils, 0 to 2 percent slopes	Poorly drained	100% Hydric
SacB	Sassafras sandy loam, 2 to 5 percent slopes, Northern Coastal Plain	Well drained	4% Predominantly Nonhydric
TrkAv	Transquaking mucky peat, 0 to 1 percent slopes, very frequently flooded	Very poorly drained	100% Hydric
UddfB	Udorthents, dredged fine material, 0 to 8 percent slopes	Well drained	Nonhydric
UR	Urban land	NA	Nonhydric
WATER	Water	NA	Nonhydric
WoeA	Woodstown sandy loam, 0 to 2 percent slopes, Northern Coastal Plain	Moderately well drained	7% Predominantly Nonhydric

Sources: USDA-NRCS (2002, 2020a, 2020b)

***** Soil hydric ratings indicate the proportion of hydric components within each map unit, as follows:
Hydric: All components listed for a given map unit are rated as being hydric.
Predominantly Hydric: Components that comprise from 66 percent, up to 99 percent of the map unit are rated as hydric.
Predominantly Nonhydric: Components that comprise up to 33 percent of the map unit are rated as hydric.
Nonhydric: None of the components are rated as hydric.

TABLE 2. SUB-WATERSHEDS LOCATED WITHIN THE PROJECT AREA

Sub-Watershed Name	Hydrologic Unit Code (HUC 14)[3]	Watershed Name[4] and HUC 10	Watershed Management Area
Alloway Creek (Quinton to Alloway-Woodstown Road)	02040206060050	Alloway Creek 0204020602	Maurice, Salem, and Cohansey (WMA 17)
Alloway Creek (New Bridge to Quinton)	02040206060060		
Harmony Tributary (Alloway Creek)	02040206060070		
Alloways Creek (Hancocks Bridge to New Bridge)	02040206060080		
Hope Creek / Artificial Island	02040206060100	Stow Creek-Frontal Delaware Bay 0204020606	

The northern 0.5-mile of the transmission line, comprising of 4 percent of the Project area (includes Quinton Substation) is located within the Alloway Creek (Quinton to Alloway-Woodstown Road) (HUC 14: 02040206060050) sub-watershed. This sub-watershed is located within the Alloway Creek (HUC 10: 0204020602) watershed. The Project area is located in the Maurice, Salem, and Cohansey Watershed Management Area (WMA 17), which includes the watersheds draining portions of Salem County to the Lower Delaware River[5].

Continuing south for approximately 3.4 miles along the transmission line, comprising of 30 percent of the Project area, is located within two sub-watersheds. The first 2.7 miles is located within the Alloway Creek (New Bridge to Quinton) (HUC 14: 02040206060060) sub-watershed and the next 0.67 mile is located within the Harmony Tributary (Alloway Creek) (HUC 14: 02040206060070). These sub-watersheds are located within the Alloway Creek (HUC 10: 0204020602) watershed. The Project area is located in the Maurice, Salem, and Cohansey Watershed Management Area (WMA 17), which includes the watersheds draining portions of Salem County to the Lower Delaware River

Continuing south for approximately 3.4 miles along the transmission line, comprising of 30 percent of the Project area, is located within the Alloway Creek (Hancocks Bridge to New Bridge) (HUC 14: 02040206060080) sub-watershed. This sub-watershed is located within the Alloway Creek Watershed (HUC 10: 0204020602). The Project area is located in the Maurice, Salem, and Cohansey Watershed Management Area (WMA 17), which includes the watersheds draining portions of Salem County to the Lower Delaware River

The southern 3.8 miles of the transmission line, comprising of 36 percent of the Project area (terminating at Wind Port Substation) is located within the Hope Creek / Artificial Island (HUC 14: 0204020606010) sub-watershed. This sub-watershed is located within the Stow Creek-Frontal Delaware Bay (HUC 10: 0204020606) watershed. The Project area is located in the Maurice, Salem, and Cohansey Watershed Management Area (WMA 17), which includes the watersheds draining portions of Salem County to the Lower Delaware River[6].

3 NJDEP. 2023. NJ-GeoWeb: Water Layers. Available online at: https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=02251e521d97454aabadfd8cf168e44d. Accessed February 1, 2023.
4 USGS. 2023. The National Map. Available online at: https://apps.nationalmap.gov/viewer/. Accessed February 1, 2023.
5 NJDEP. 2021. NJDEP Bureau of GIS Watershed Management Areas in New Jersey. Available online at: https://gisdata-njdep.opendata.arcgis.com/datasets/njdep::watershed-management-areas-in-new-jersey/explore?location=40.096688%2C-74.726300%2C8.92. Accessed February 1, 2023.
6 NJDEP. 2021. NJDEP Bureau of GIS Watershed Management Areas in New Jersey. Available online at: https://gisdata-njdep.opendata.arcgis.com/datasets/njdep::watershed-management-areas-in-new-jersey/explore?location=40.096688%2C-74.726300%2C8.92. Accessed February 1, 2023.

The Wind Port Staging Area Storage Yard is located within the aforementioned Hope Creek / Artificial Island (HUC 14: 0204020606010) sub-watershed.

Surface waters are classified by NJDEP based on designated uses. Freshwaters are classified as FW1 (not subject to any man-made wastewater discharges) and FW2 waters (all other freshwaters). Saline waters are classified as saline estuarine (SE) and saline coastal (SC). SE waters are further classified into SE1, SE2, and SE3 based on the designated uses. Category One (C1) waters are protected from any measurable change in water quality because of their exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resources.

The Project Area crosses five uncoded tributary FW2-NTC1/SE1, five unnamed tributaries to Fishing Creek (FW2-NTC1/SE1), and Devils Gut (FW2-NTC1/SE1), which are all classified as a C1 water.

4.0 UPLAND VEGETATIVE COMMUNITIES

Based upon species composition, soils, and apparent hydrology noted during field investigation, four upland vegetative communities were identified within the project area: deciduous forests, early-successional shrubland, urban lands (including mowed turf) and agricultural lands. Vegetation observed within the project area is listed in ***Table 3*** along with the species' wetland indicator status. This is not a complete list of all vegetation present within the project area but provides an assessment of the dominant species observed. Photographs documenting the existing vegetative communities are included in ***Appendix D***. Upland vegetative communities are briefly described below.

TABLE 3. VEGETATION OBSERVED WITHIN THE PROJECT AREA

Scientific Name	Common Name	Wetland Indicator Status
Acer negundo	boxelder	FACW
Acer rubrum	red maple	FAC
Acer saccharinum	silver maple	FACW
Amelanchier canadensis	serviceberry	
Andropogon virginicus	broomsedge bluestem	FAC
Betula nigra	river birch	FACW
Carex spp.	Sedges	
Clethra alnifolia	coastal sweetpepperbush	FACW
Cornus amomum	Silky dogwood	FACW
Cyperus spp.	Flatsedges	
Cyperus esculentus	yellow nutsedge	FAC
Dichanthelium clandestinum	deer tongue	FACW
Distichlis spicata	Salt grass	OBL
Eleocharis spp.	spikerushes	
Festuca arundinacea	tall fescue	FAC
Ilex opaca	American holly	FAC
Iva frutescens	marsh-elder	FACW
Juniperus virginiana	Eastern redcedar	FACU
Juncus effusus	soft rush	OBL
Liquidambar styraciflua	sweetgum	FAC
Lonicera japonica	Japanese honeysuckle	FACU
Microstegium vimineum	Japanese stilt grass	FAC

Scientific Name	Common Name	Wetland Indicator Status
Panicum virgatum	switchgrass	FAC
Nyssa sylvatica	Black gum	
Parthenocissus quinquefolia	Virginia creeper	
Prunus serotina var serotina	black cherry	
Phalaris arundinacea	reed canarygrass	OBL
Phragmites australis	common reed	FACW
Pinus rigida	pitch pine	FACU
Quercus alba	white oak	FACU
Quercus palustris	pin oak	FACW
Quercus phellos	willow oak	FACW
Rhus copallinum	Winged sumac	UPL
Rosa multiflora	multiflora rose	FACU
Salix nigra	black willow	OBL
Scirpus cyperinus	woolgrass	OBL
Smilax rotundifolia	greenbrier	FAC
Solidago altissima	tall goldenrod	FACU
Solidago rugosa	wrinkleleaf goldenrod	FAC
Solidago sempervirens	seaside goldenrod	FACW
Spartina alterniflora	Smooth cordgrass	OBL
Symplocarpus foetidus	Skunk cabbage	OBL
Taraxacum officinale	common dandelion	FACU
Tridens flavus	purpletop tridens	FACU
Trifolium repens	white clover	FACU
Toxicodendron radicans	poison ivy	
Vaccinium corymbosum	highbush blueberry	FACW
Verbascum Thapsus	common mullein	FACU

Key to indicator categories:
OBL: Obligate, almost always occur in wetlands.
FACW: Facultative Wetland, usually occur in wetlands, but may occur in non-wetlands.
FAC: Facultative, occur in wetlands and non-wetlands.
FACU Facultative Upland, usually occur in non-wetlands, but may occur in wetlands.
UPL: Upland, almost never occur in wetlands.
n/a: Not Applicable.
NI: Not found on national listings of plants occurring in wetlands.
Sources: USDA-NRCS (2020b), Lichvar (2013)

Deciduous forests: Areas of deciduous forest is present within the right-of-way along the boundary of the ROW. Deciduous forests are characterized by land dominated by trees generally greater than 5 m tall, and greater than 20 percent of total vegetative cover. More than 75 percent of the tree species shed foliage simultaneously in response to seasonal changes. Within the project area, dominant deciduous forest species included red maple, black gum, sweet gum and black cherry

Early successional shrubland: Areas of early-successional shrubland persist where right-of-way maintenance is less frequent. Early successional shrubland is characterized by land that has been cleared or disturbed with at least 50 percent coverage represented by shrubs.

Urban Lands: Portions of the project area cross uplands that have been developed and as such are classified as urban lands. Urban lands consist of impervious surfaces including buildings, highways, parking lots, residential developments, and pervious surfaces including manicured lawn. Manicured lawn consists of residential, recreational, or commercial land dominated by clipped grasses and less than 30 percent cover of trees. Ornamental and/or native shrubs may be present, usually with less than 50 percent cover. The groundcover is maintained by mowing.

Agricultural fields: Active farmland and old-field habitats are located along and in the vicinity of the project ROW. Active farmland includes fields of soybean and row crops of corn; however, crop assemblage may vary year-by-year. Old-fields include agricultural tracts that were not farmed, and contained early successional grasses, herbs and few shrubs.

5.0 WETLAND AND OPEN WATER AREAS

Prior to conducting field surveys, WSP wetland scientists performed a desktop review to determine the general location, extent and character of the wetlands expected to occur within the project area. Existing documentation was reviewed that included aerial photographs, USGS 7.5-minute topographic maps, soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory, NJDEP Freshwater Wetland maps, and the USGS National Hydrography Dataset.

The wetland delineation for the proposed Project identified 54 features, that totaled approximately 18.82 acres, of which 16.49 acres are within the proposed Project area. A summary of the wetland feature types is provided below. Additional information pertaining to the wetland delineation report is provided in ***Appendix E***.

Table 4. Summary of Delineated Features within the Project

Wetland Code	Cowardin Classification	Potential NJDEP Resource Value Classification	Approximate Delineated Area
SA	E1UBL	NA	0.003
WB	PEM/E2EM	Intermediate	0.172
SB	E1UBL	NA	0.118
WC	MOD	Ordinary	0.022
WD	MOD	Ordinary	0.006
WE	PEM/PFO	Intermediate	0.068
SE	E1UBL	NA	0.008
WF	PEM/E2EM	Intermediate	0.150
SF	E1UBL	NA	0.064
WG	PFO/PEM	Intermediate	0.054
SG	R1	NA	0.750
WH	MOD AG	Ordinary	0.200
WI	MOD AG	Ordinary	0.168
WJ	PFO/PEM	Ordinary	0.004
WL	MOD	Ordinary	0.049
WKK	PEM	Intermediate	0.169
SKK	E1UBL	NA	0.024

Wetland Code	Cowardin Classification	Potential NJDEP Resource Value Classification	Approximate Delineated Area
WJJ	E2EM	Intermediate	0.207
SJJ	E1UBL	NA	0.090
WII	PEM	Intermediate	0.290
SII	R1	NA	0.032
WVV	MOD AG	Ordinary	0.010
WUU	MOD	Ordinary	0.050
WTT	MOD AG	Ordinary	0.167
WSS	MOD	Ordinary	0.053
WWW	MOD AG	Ordinary	0.529
WXX	MOD AG	Ordinary	0.050
WYY	PEM/MOD	Intermediate	0.235
SRR	E1UBL	NA	0.026
WRR	PEM/PFO	Intermediate	0.137
WQQ	PFO/PEM	Intermediate	0.015
SY	R1	NA	0.035
WOO	MOD AG	Ordinary	0.043
WNN	MOD AG	Ordinary	0.173
WMM	MOD AG	Ordinary	0.011
WM	PEM	Ordinary	0.202
WN	PEM	Intermediate	0.182
WO	PEM	Ordinary	0.130
WP	PEM	Ordinary	0.050
WQ	PEM	Ordinary	0.025
WR	PEM/PSS	Ordinary	0.154
WS	PEM	Ordinary	0.258
WT	PEM	Ordinary	0.178
WW	PEM	Ordinary	0.081
WX	PEM	Ordinary	0.006
WY	MOD AG	Ordinary	0.029
WZ	E2EM/PFO	Exceptional	0.535
SZ	E1	NA	0.001
WEE	E2EM	Exceptional	9.734
SEE	E1UBL	NA	1.182
WDD	MOD/PEM	Ordinary	0.414
WCC	MOD/PEM	Ordinary	1.389
WBB	MOD	Ordinary	0.075
WAA	PEM	Ordinary	0.015
TOTAL			**18.822**

According to the NJDEP wetlands mapping, nine classes of wetlands were identified within or adjacent to the Project area, including agricultural wetland, disturbed wetland (tidal), herbaceous wetlands, managed lawn wetland in Green Space, forested wetland (deciduous), scrub/shrub wetland (deciduous and mixed), *Phragmites* dominant wetland (interior and coastal), saline marsh (low and high marsh), and wetland rights-of-way (***Figure 6***). The wetland classes are based upon the Anderson et. Al. 1976 classification system[7] with some modifications specific to the New Jersey wetland mapping program[8].

Subsequent to the desktop review, DuBois and Associates (DuBois) wetland scientists conducted field investigations to determine jurisdictional boundaries of wetlands and open waters present within the Project area, and if any waterbodies would be subject to regulations implemented by the NJDEP. DuBois delineated wetlands and open waters using the Routine On-Site Inspection Methodology as set forth in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (Federal Interagency Committee for Wetland Delineation 1989) and the USACE 1987 Wetlands Delineation Manual (Environmental Laboratory 1987). For specific regional wetland indictors, DuBois wetland scientist consulted the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) (USACE, 2010). Wetlands, as defined in this manual, are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands were thus identified and delineated based on three parameters:

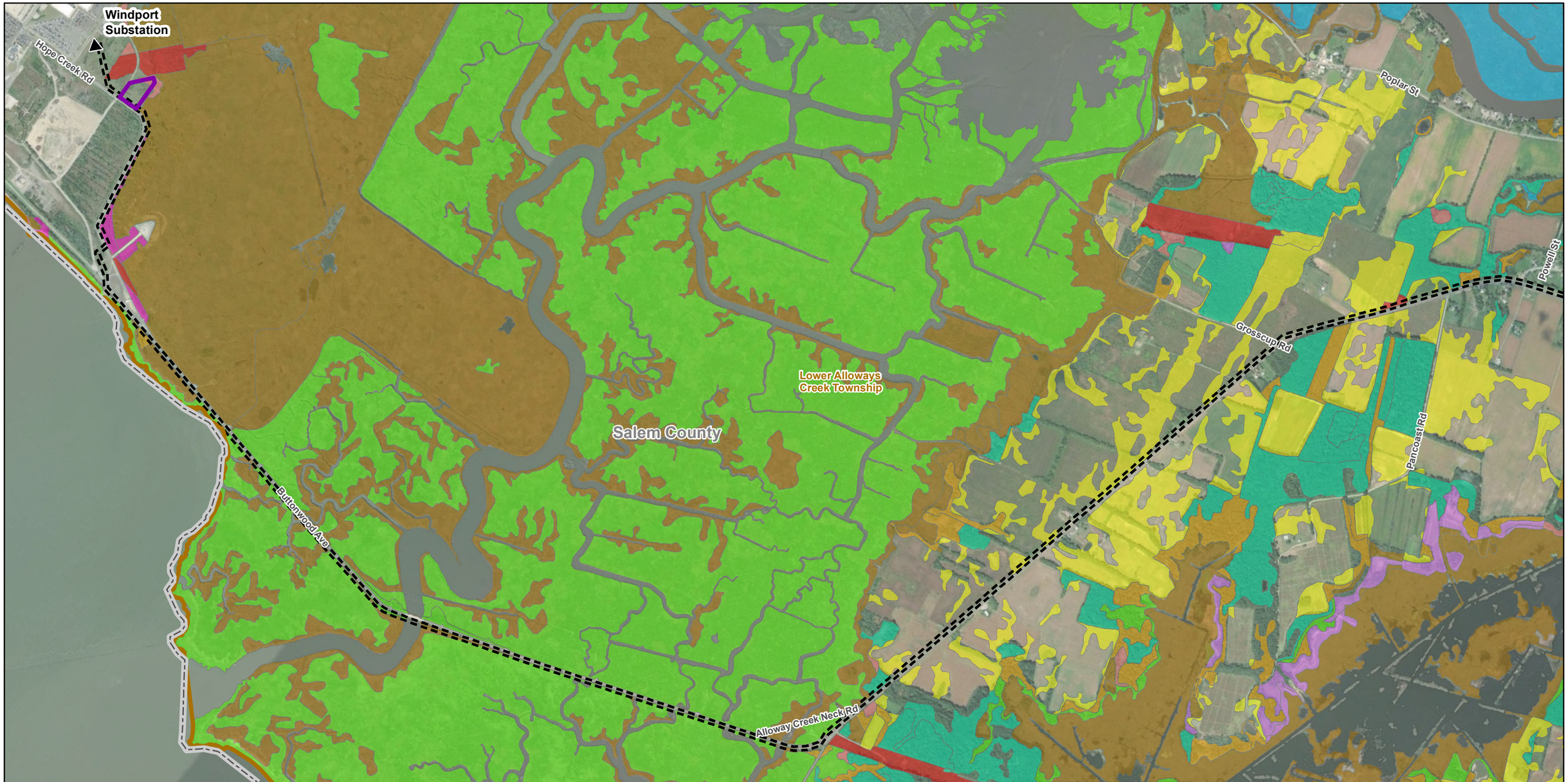
1. Hydrophytic vegetation – the dominant vegetation consists of species capable of growing in water or on substrate that is at least periodically deficient in oxygen as a result of the presence of water;
2. Hydric soils – soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth of hydrophytic vegetation; and
3. Wetland hydrology – the area is inundated permanently or periodically, or the soil is saturated to the surface for sufficient duration during the growing season to support hydrophytic vegetation.

DuBois wetland scientists delineated all wetlands and open water areas within the vicinity of the Project area in December 2021 and September 2022, at a time of year when the upper 18 inches of the soil was not frozen and there was sufficient vegetative cover to utilize the three-parameter approach. The boundaries of wetlands were marked in the field by sequentially numbered flags and located using a Trimble GeoXt Global Positioning System; capable of sub-meter accuracy. DuBois wetland scientists delineated a total 54 wetlands and waters of the U.S. were delineated within the Project area.

Based on the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), four classes of wetlands and three riverine designations were identified in the Project area. These wetlands are listed in ***Table 4***. Areas of palustrine forested wetland (PFO), palustrine scrub-shrub wetland (PSS), palustrine emergent wetland (PEM), estuarine emergent wetland (EEM), estuarine subtidal (E1), riverine tidal (R1) and riverine intermittent (R4) were identified and are defined below. Within the Project area, in ecotones where one wetland type grades to another and or in areas undergoing stages of succession, mixes of the classes occur (e.g., PFO/PEM, PEM/PSS, E2EM/PFO).

The locations and boundaries of delineated wetlands and streams are shown on the Freshwater Wetland & Coastal Wetland Plans and Waterfront Development Plans. Color photographs were taken of each delineated wetland during the field survey and are presented in ***Appendix D***. Completed wetland determination data forms documenting the soil, vegetative and hydrologic conditions are provided as a part of the wetland delineation report in ***Appendix E***.

[7] Anderson, J.R., Hardy, E.E., Roach, J.T., & Witmer, R.E. 1976. *A land use and land cover classification system for use with remote sensor data.* U.S. Geological Survey Professional Paper, No. 964. USGS, Washington, D.C.
[8] https://www.nj.gov/dep/gis/digidownload/metadata/lulc12/anderson2012.html



- Substation
- Laydown Area
- ROW
- County Boundary
- Municipality Boundary
- Agricultural Wetland
- Scrub/Shrub Wetland
- Forested Wetland
- Disturbed Wetland
- Freshwater Tidal Marsh
- Herbaceous Wetland
- Managed Wetland
- Phragmites Wetland
- Saline Marsh
- Wetland Rights-of-Way

Sources:
Imagery (NAIP)
Wetlands (NJDEP 2015)

Coordinate System:
New Jersey State Plane
NAD 1983

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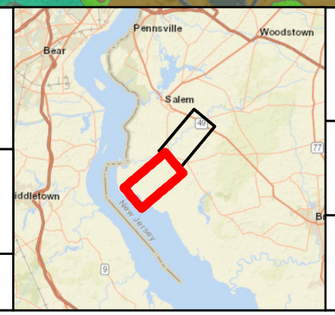

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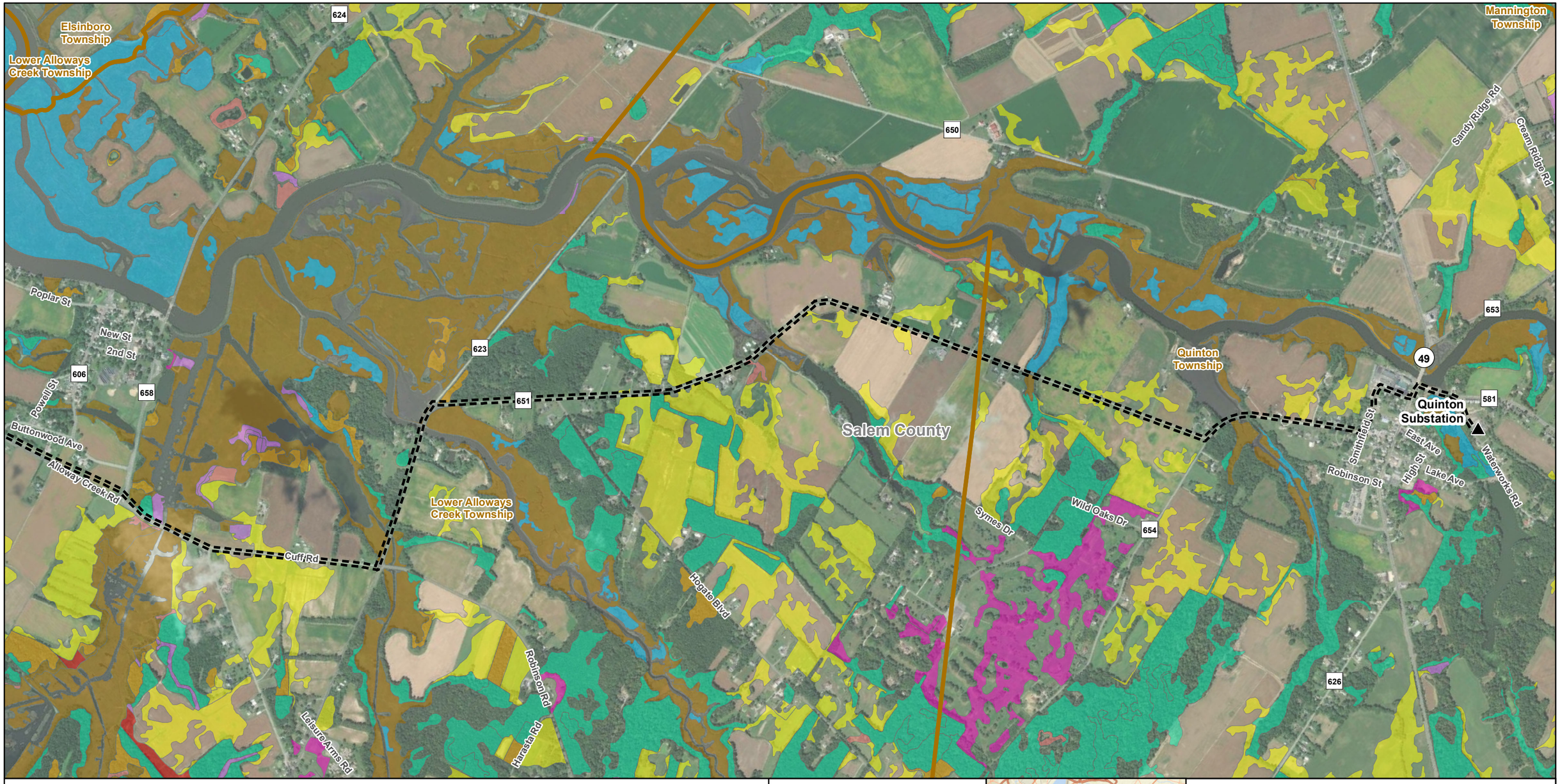

- Substation
- ROW
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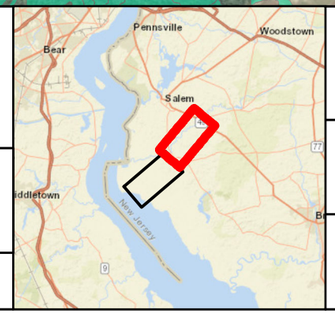

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Palustrine Broad-leaved Deciduous Forested Wetland (PFO): Forested wetlands include areas that are dominated by woody vegetation that is 20 feet or taller (Cowardin et al. 1979). Vegetation observed in forested wetlands in the project area included pin oak (*Quercus palustris*, FACW), red maple (*Acer rubrum*, FAC), sweet gum (*Liquidambar styraciflua*, FAC), river birch (*Betula nigra*, FACW), box elder (*Acer negundo*, FACW) and silver maple (*Acer saccharinum*, FACW). Following the Cowardin system, the hydroperiod of the palustrine forested wetland systems in the project area are classified as seasonally flooded/saturated. Forested wetlands were only observed along the ROW edge.

Palustrine Broad-leaved Deciduous Scrub-Shrub Wetland (PSS): Scrub-shrub wetlands include areas dominated by woody vegetation less than 20 feet tall, including shrubs, young trees, or trees and shrubs that are stunted because of environmental conditions. Vegetation observed in scrub-shrub wetlands identified in the project area included silky dogwood (*Cornus amomum*, FACW) and highbush blueberry (*Vaccinium corymbosum*, FACW). Hydrology was associated with a seasonally high-water table and surface saturation. Following the Cowardin system, the hydroperiod of the palustrine scrub-shrub wetland systems in the project area is classified as seasonally flooded/saturated. Scrub-shrub wetlands were only observed in areas along the project right-of-way that have not been recently mowed or cleared.

Palustrine Persistent Emergent Wetland (PEM): Palustrine persistent emergent wetlands are characterized by an array of grass-like plants and broad-leaved herbaceous emergent. Vegetation observed in the emergent wetlands identified within the project area included common reed (*Phragmites australis*, FACW), soft rush (*Juncus effusus*, OBL), wool grass (*Scirpus cyperinus*, OBL), reed canaarygrass (*Phalaris arundinacea*, FACW), flatsedges (*Cyperus spp.*), spikerushes (*Eleocharis spp.*) and sedges (*Carex spp.*). In the emergent wetland areas, hydrology is associated with a drift deposits, seasonally high-water table and surface water, and oxidized rhizospheres. Following the Cowardin system, the hydroperiod of the palustrine emergent wetland systems in the project area is classified as seasonally flooded to saturated.

Modified and Modified Agricultural Wetlands (MOD & MODAG): Modified wetlands along the Project area primarily include anthropogenic roadside ditches and other altered land. Culverts convey intermittent surface waters beneath bisecting roadways and driveways. During the delineations, roadside ditches were actively mown. Modified agricultural wetlands are in active cropland production. During the delineation, land was cultivated and absent of native hydrophytes. In these area, hydric soils and hydrologic indicators were used to determine the presence of jurisdictional wetlands in the State. Hydrology indicators in farmland included surface water, a high-water table, algal crusts and iron deposits.

Estuarine Emergent Wetland (EEM): Estuarine systems include both estuaries and lagoons of varying salinity where the water regime is dictated by oceanic tides, precipitation, freshwater runoff from land areas and evaporation (Cowardin et al. 1979). Vegetation observed in estuarine emergent wetlands in the project area included common reed, Regular and irregularly flooded smooth cordgrass (*Sporobolus alterniflorus* = *Spartina alterniflora*, OBL) marsh is representative; patches of high marsh containing salt hay (*Sporobolus pumilus* = *Spartina patens*, OBL) and salt grass (*Distichlis spicata*, OBL).

Estuarine Subtidal Waters (E1): Estuarine waters are differentiated from the estuarine wetlands by the absence of vegetation and persistence of tidal waters with substrate below mean high water. The estuarine waters substrate identified within the project area consist of unconsolidated bottom.

Riverine Tidal Waters (R1): Riverine tidal waters are differentiated from the estuarine wetlands by the having a defined bed and bank. The riverine tidal waters substrate identified within the project area consist of unconsolidated bottom.

6.0 THREATENED AND ENDANGERED SPECIES

Information regarding the historic or current presence of Federal and/or State-listed endangered, threatened, special concern, proposed, or candidate species, or habitat to support those species located in the vicinity of the project area was obtained from the NJDEP Natural Heritage Program (NHP).

The NJDEP uses the Landscape Project mapping to identify potential listed wildlife habitat in accordance with land use regulations, including the Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A) and the Flood Hazard Area

Control Act Rules (N.J.A.C. 7:13). The NJDEP Landscape Project is a landscape-level approach to the conservation of imperiled wildlife species in New Jersey. The Landscape Project geographic information system depicts critical wildlife habitat through the integration of species location data, land-use/land-cover, and species life history information. According to the Landscape Project (Version 3.1) habitat mapping for rare wildlife species or wildlife habitat is known to occur in the immediate vicinity of the project area associated with the Mad Horse Creek Wildlife Management Area (***Figure 7***).

A threatened and endangered species habitat evaluation was conducted by DuBois along the Project area in October 2021 and September 2022.[9]. The evaluation was conducted in accordance with standard state and federal protocols. The habitat evaluation criteria were derived from the life history of each particular species, review of scientific literature, and experience of DuBois biologists. The habitat evaluation incorporated the evaluation of hydrology, freshwater wetlands, vegetation assemblages, ecotone areas and surrounding land uses in relation to the habitat requirements of addressed species. The results of such were used to evaluate whether or not the ROW provides all the components necessary to sustain the subject threatened and endangered species. The 2023 *Threatened and Endangered Species Habitat Evaluation* identified the presence of suitable habitat conditions for the state endangered grassland birds, including American kestrel (*Falco sparverius*), grasshopper sparrow (*Ammodramus savannarum*), Savannah sparrow (*Passerculus sandwichensis*), horned lark (*Eremophila alpestris*); bald eagle (*Haliaeetus leucocephalus*); and osprey (*Pandion haliaetus*) within portions of the Project area.

Additionally, DuBois conducted an USFWS IPaC Review and Project Effects Analysis (***Appendix F***) for the project under USFWS Project Code 2023-0040434[10] to document and review potentially federally listed species within the Project area. This included the review of the following eight species:

- Northern Long-eared bat (*Myotis septentrionalis*) - Threatened
- Tricolored bat (*Perimyotis subflavus*) - Proposed endangered
- Bog turtle (*Glyptemys muhlenbergii*) - Threatened
- Eastern black rail (*Laterallus jamaicensis ssp. Jamaicensis*) - Threatened
- Red knot (*Calidris canutus rufa*) - Threatened
- Sensitive joint-vetch (*Aeschynomene virginica*) - Threatened
- Swamp pink (*Helonias bullata*) - Threatened
- Monarch butteryfly (*Danaus plexippus*) - Candidate

9 DuBois & Associates, LLC. 2023. *Threatened & Endangered Species Habitat Evaluation Atlantic City Electric Company Quinton-Windport Transmission Line Project, Quinton and Lower Alloways Creek Townships, Salem County, NJ*. 16pp. plus appendices. February 1, 2023.
10 DuBois & Associates, LLC. 2023. USFWS IPAC Review & Project Effects Analysis. Quinton-Windport Tranmsision Line Project. Quinton and Lower Alloways Creek Township, Salem County, NJ. 10pp plus appendices. February 1, 2023.

- Substation
- ROW
- Laydown Area
- County Boundary
- Municipality Boundary
- Rank 3 - State Threatened Species
- Rank 4 - State Endangered Species
- Rank 5 - Federally Listed Species

Rank 3:
Osprey, Horned Lark, Bald Eagle, Savannah Sparrow, Grasshopper Sparrow, American Kestrel

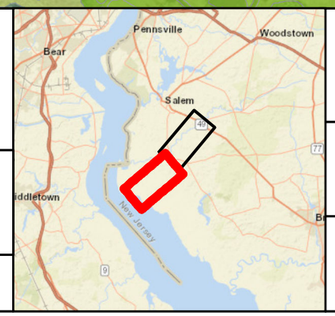
Rank 4:
Bald Eagle, Vesper Sparrow

Rank 5:
Kemp's or Atlantic Ridley, Atlantic Sturgeon, Shortnose Sturgeon, Atlantic Loggerhead, Atlantic Green Turtle

Sources:
Imagery (NAIP)
T&E Species (NJDEP 2020)

Coordinate System:
New Jersey State Plane
NAD 1983

May 11, 2023



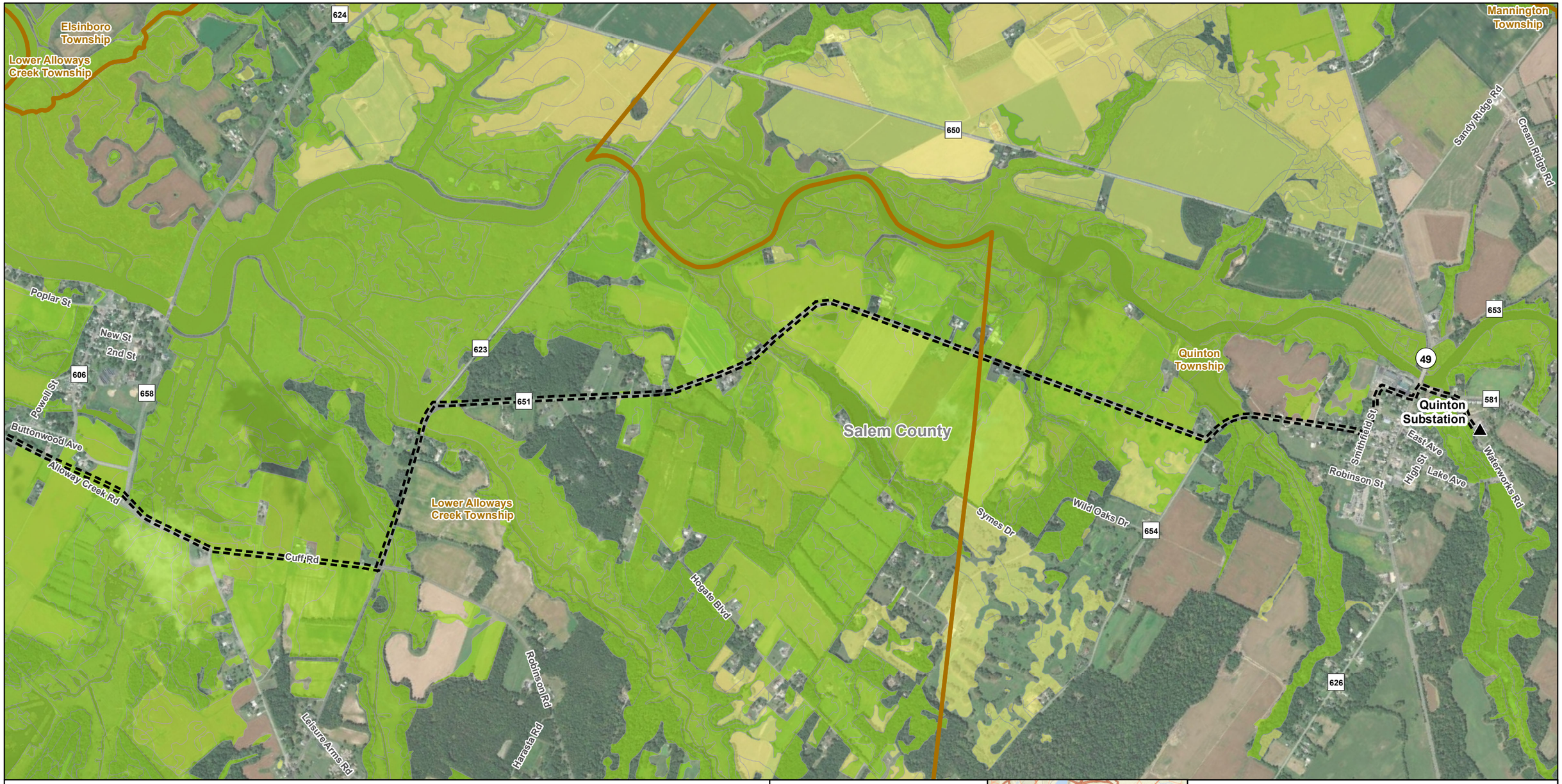
QUINTON-WIND PORT 69 KV
TRANSMISSION LINE PROJECT

Landscape Project

atlantic city electric
An Exelon Company

wsp

0 750 1,500 3,000 Feet



- Substation
- ROW
- County Boundary
- Municipality Boundary
- Rank 3 - State Threatened Species
- Rank 4 - State Endangered Species

Rank 3:
Osprey, Horned Lark, Bald Eagle, Savannah Sparrow, Grasshopper Sparrow, American Kestrel

Rank 4:
Bald Eagle, Vesper Sparrow

Rank 5:
Kemp's or Atlantic Ridley, Atlantic Sturgeon, Shortnose Sturgeon, Atlantic Loggerhead, Atlantic Green Turtle

Sources:
Imagery (NAIP)
T&E Species (NJDEP 2020)

Coordinate System:
New Jersey State Plane
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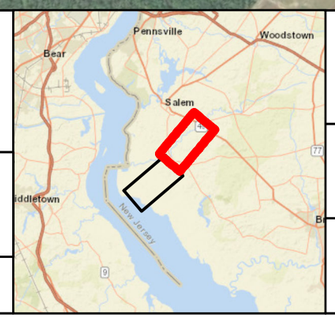

QUINTON-WIND PORT 69 KV
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wsp

0 750 1,500 3,000 Feet

Based on the results of a USFWS IPaC review, completion of Determination Keys and performance of a project effects analysis, it is our determination that the ACE Quinton-Wind Port Transmission Line Project will have No Effect to Bog Turtle or Sensitive Joint-vetch. We believe the project is not likely to adversely affect the following species due to project area condition, and/or if ACE implements appropriate conservation measures into the project:

- Eastern Black Rail: Not likely to adversely affect given the roadside location and temporary nature of wetland matting impacts to marsh habitat;
- Red Knot: Not likely to adversely affect given the roadside location and temporary nature of wetland matting impacts to marsh habitat. Implementation of soil erosion and sediment control BMPs to protect the salt marsh environment/fair quality foraging habitat;
- Swamp Pink: Not likely to adversely affect given avoidance of disturbance to forested wetlands, implementation of soil erosion and sediment control BMPs, and poor-quality habitat conditions from two forested wetland locations adjacent to project ROW;
- Northern Long-eared Bat & Tricolored Bat: TOYR on tree removal from April 1 – September 30.

In September 2022 a raptor nest survey was conducted by DuBois along the Project area[11]. The purpose of the survey is to identify the presence or absence of raptor stick nests along and or within 1,000-ft of the Project area. Osprey and bald eagles are typically the targeted species with attention to evidence of other raptors breeding. The report identified no raptor nests or raptors present the Project area. However, five nests (three bald eagle and two osprey) were located proximal to the Project area on a communication tower, on a tree, and on transmission towers. The distances from the Project area ranged from 240-ft, 320-ft, 320-ft, 384-ft, and 946-ft, respectfully. No Federal Eagle Nest Take Permit Applications are anticipated as part of the Project.

7.0 RIPARAIN ZONES

Riparian zone width for regulated streams within the Project Area was determined pursuant to N.J.A.C. 7:13-4.1. Tributaries associated with a Category 1 water were assigned a riparian width of 300 feet; while streams flowing through an area that contains a threatened or endangered species was assigned a riparian width of 150 feet and other regulated waters not identified with the previous ones were assigned a riparian width of 50 feet. Riparian widths for regulated streams as well as Surface Water Quality Standards (N.J.A.C. 7:7b) within the Project Area are included in ***Table 5***.

8.0 CULTURAL RESOURCES

WSP, on behalf of ACE, completed a Phase IA cultural resource investigation associated with the proposed new 11.55-mile Quinton-Wind Port 69kV transmission line. To assist ACE in locating areas of cultural resource sensitivity, WSP conducted the Phase IA investigation to identify cultural (archaeological and historic architectural) resources that are eligible for or listed in the SRHP or the NRHP, both previously recorded and unrecorded, that may be affected by the proposed Project. The survey comprised background research, a windshield survey of the archaeological and architectural APEs, the development of a predictive model to assess archaeological potential, an archaeological (subsurface) investigation, and a reconnaissance level historic architectural survey. A complete copy of the Phase IA Cultural Resource Survey Report has been submitted to NJHPO for review and concurrence.

The background research indicated limited development in the Project area from the mid-nineteenth through the early twentieth centuries, consisting of settlement around the intersections of historic roadways and interspersed farmsteads along the archaeological APE. The background research identified 20 archaeological sites within 1.6 kilometers (1.0 mile) of the APE: 12 precontact, three post-contact, four multicomponent, and one unknown, including three within or immediately adjacent to the archaeological APE.

11 DuBois & Associates, LLC. 2022. Raptor Nest Survey Report. Quinton-Windport Transmission Rebuild Project. Quinton and Lower Alloways Townships, Salem County, NJ. 20pp plus appendices. November 30, 2022.

Table 5. Riparian Width and Surface Water Quality Standard for Regulated Waters within Project Area

Waterway of Interest (From South to North)	Delineated Waterway	Nearest Structure	Riparian Width	Rational	Surface Water Classification
Laurel Run	Stream SA 3A-6	N/A	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek	N/A	AR8-AR5	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary I	Stream SB 1-10	39-41	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary II	Stream SE 1-4	56	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary III	Stream SF 1-5	76-77	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek UNT	Stream SG 1-5	78	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Lower Alloways Creek UNT	Wetland WJ 1-4	86	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary IV	Stream SJJ 1-4	104-105	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary V	Stream SII 0-4	112-113	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary VI	NA	123	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary VII	Stream SRR 1-5	131	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary VIII	Stream SY 8-11	147	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Alloway Creek Tributary VIII	Stream SY 1-7	150	50	Regulated water not dedicated to trout production and maintenance.	FW2-NT/SE1
Silver Lake Fork Tributary I	NA	184	50	Regulated water not dedicated to trout production and maintenance.	FW2-NTC1/SE1
Silver Lake Fork Tributary	NA	193	50	Regulated water not dedicated to trout production and maintenance.	FW2-NTC1/SE1
Devils Gut Tributary - Category 1	Stream SZ 7-11	201-202	300	Regulated water not dedicated to trout production and maintenance - Category 1	FW2-NTC1/SE1
Devils Gut Tributary - Category 1	Stream SZ 1-6	202-203	300	Regulated water not dedicated to trout production and maintenance - Category 1	FW2-NTC1/SE1
Devils Gut	NA	206-216	300	Regulated water not dedicated to trout production and maintenance - Category 1	FW2-NTC1/SE1
Fishing Creek Tributary	NA	217-224	300	Regulated water not dedicated to trout production and maintenance - Category 1	FW2-NTC1/SE1
Fishing Creek	NA	225-236	300	Regulated water not dedicated to trout production and maintenance - Category 1	FW2-NTC1/SE1
Hope Creek	NA	236-246	50	Regulated water not dedicated to trout production and maintenance	FW2-NTC1/SE1
Hope Creek Tributary I	NA	247-255	300	Regulated water not dedicated to trout production and maintenance - Category 1	FW2-NTC1/SE1
Hope Creek Tributary II	NA	256-260	300	Regulated water not dedicated to trout production and maintenance - Category 1	FW2-NTC1/SE1
Delaware River Tributary	NA	261-280	300	Regulated water not dedicated to trout production and maintenance - Category 1	FW2-NTC1/SE1

WSP determined as a result of background research and the windshield survey that portions of the archaeological APE outside the tidal marsh and disturbed road shoulder are archaeologically sensitive. The majority of the archaeological APE is situated along the road shoulder, in the tidal marsh, or on man-made land; however, some portions of the line cross areas that are close to known archaeological sites and water sources and/or consist of potentially undisturbed, well-drained soils along historic roads. A Phase IB survey is currently being conducted (March 2023) in areas of proposed ground disturbance within sensitive portions of the archaeological APE to evaluate subsurface conditions for archaeological sites. Results of the Phase IB will be provided to SHPO.

Research identified three previously surveyed resources in the architectural APE that are either listed or eligible for listing in the NRHP: the NRHP-listed Alloways Creek Friends Meetinghouse, the NRHP-eligible Nathaniel Chambless House/Shrimp Farm, and the NRHP-eligible Alloway Creek Rural Historic District (to which the Alloways Creek Friends Meetinghouse and the Nathaniel Chambless House/Shrimp Farm are also contributing resources). Four potentially eligible properties within the APE that may be affected by the Project and are currently undergoing intensive-level evaluation (Phase IB). These properties are the Quinton Glass Works Company Houses at 9-11, 13-15, 17-19, 21-23, 25-27, and 29-31 Quinton-Alloway Road; the farm at 212 Beasley Neck Road; the farm at 266 Beasley Neck Road; and the farmhouse at 523 New Bridge Road. Results of the Phase IB will be provided to SHPO.

PART IV. IMPACTS AND MITIGATION

1.0 PROPOSED WETLAND IMPACTS

Following extensive efforts to first avoid and then minimize impacts to regulated features, the proposed Project will result in permanent and temporary impacts to freshwater wetlands and waters, freshwater wetland transition areas, coastal wetlands, and waterfront development areas. Proposed impacts are summarized below and in ***Table 5.*** Impacts are shown on the Freshwater Wetland & Coastal Wetland Plans and Waterfront Development Plans***. Table 6*** includes impacts per plan sheet.

1.1 FRESHWATER WETLAND AND TRANSITION AREA IMPACTS

Freshwater wetland impacts are those wetland and water areas located above the coastal wetland limit line (upper wetland limit boundary) as regulated by the Coastal Wetlands Act of 1970 to the wetland boundary as determined through the wetland delineation procedure and those wetland areas delineated during the wetland delineation procedure not associated with the upper wetland limit boundary. Transition areas were determined for all freshwater wetlands within the Project area based on best professional judgement.

1.1.1 Permanent Impacts

The proposed Project will permanently impact 0.7285 acres of freshwater wetlands. Approximately 0.0211 acres of permanent wetland impacts are the result of proposed structure foundations. The design and placement of the transmission line structure were engineered with an understanding of the importance of avoidance and/or minimization of impacts to regulated areas. Of the total 286 proposed structures, 75 structures will occur in freshwater wetlands and 92 structures will occur in transition areas. The primary impact associated with the construction of the Project is the conversion of 0.7074 acres of forested wetland to scrub-shrub/emergent wetlands. This conversion is required as part of the mandatory clearing necessary to meet the requirements for minimum clearances between any transmission line and the closest vegetation.

In addition, the proposed Project will result in 2.6326 acres of permanent impacts to freshwater wetland transition areas. Permanent impacts to transition areas include 0.0296 acres for structure foundations and 2.6030 acres of forest conversion. Impacts to forested wetland are necessary to provide the mandatory clearance zone (approximately 30 feet from the structure centerline) required for the new 69 kV transmission line. No change in wetland topography of these areas is proposed. No structures are proposed within State open waters including stream channels.

1.1.2 Temporary Impacts

The proposed project will result in approximately 11.3245 acres of temporary impacts that are less than six months in duration, including 4.0787 acres of freshwater wetlands and 7.2458 acres of transition areas. These temporary impacts will occur as a result of construction access, work locations and construction laydown areas. Temporary disturbance to transition areas is within an existing maintained ROW and/or vacant fields and are not expected to result in significant impacts to adjacent freshwater wetlands.

TABLE 6. SUMMARY OF PROPOSED IMPACTS

Freshwater Wetland			Freshwater Wetland Transition Area			Coastal Wetland		
Permanent Impact sq. ft. (AC)	**Conversion Impact sq. ft. (AC)**	**Temporary Impact sq. ft. (AC)**	**Permanent Impact sq. ft. (AC)**	**Conversion Impact sq. ft. (AC)**	**Temporary Impact sq. ft. (AC)**	**Permanent Impact sq. ft. (AC)**	**Conversion Impact sq. ft. (AC**	**Temporary Impact sq. ft. (AC)**
920 (0.0211)	30,813 (0.7074)	177,669 (4.0787)	1,290 (0.0292)	113,388 (2.610)	315,629 (7.2458)	60 (0.0014)	7,798 (0.1790)	54,007 (1.2398)
31,733 sq. ft. (0.7285 AC)		**177,669 sq. ft (4.0787 AC)**	**114,678 sq. ft. (2.6326 AC)**		**315,629 sq. ft. (7.2458 AC)**	**7,858 sq. ft. (0.1804 AC)**		**54,007 sq. ft. (1.2398 AC)**

Waterfront Development In-Water (below MHWL) (within CAFRA zone)			
Permanent Impact Structures sq. ft. (AC)	**Permanent Impact Conversion sq. ft. (AC)**	**Permanent Impact Aerial Crossing LF**	**Temporary Impact sq. ft. (AC)**
0 sq. ft. (0 AC)	1,620 sq. ft. (0.0372 AC)	461 LF	25,209 sq. ft. (0.5787 AC)

Waterfront Development Upland (above MHWL) (outside of CAFRA zone)			
Permanent Impact Structures sq. ft. (AC)	**Permanent Impact Conversion sq. ft. (AC)**	**Permanent Impact Aerial Crossing LF**	**Temporary Impact sq. ft. (AC)**
170 sq. ft. (0.0039 AC)	0 sq. ft. (0 AC)	0 LF	14,194 sq. ft. (0.3258 AC)

SF: Square Feet AC: Acres LF: Linear Feet

TABLE 7. PROPOSED REGULATED IMPACTS BY PLAN SHEET

Plan Sheet	Freshwater Wetlands			Freshwater Wetlands Transition Area			Coastal Wetlands Transition Area		
	Permanent Impact sq. ft.	Conversion Impact sq. ft.	Temporary Impact sq. ft.	Permanent Impact sq. ft.	Conversion Impact sq. ft.	Temporary Impact sq. ft.	Permanent Impact sq. ft.	Conversion Impact sq. ft.	Temporary Impact sq. ft.
103	70	0	16,582	150	0	40,069	0	0	0
104	150	3,380	44,516	90	3,369	28,404	0	0	978
105	100	753	15,521	20	252	7,608	30	1,681	12,816
106	130	9,129	9,277	60	30,968	12,102	10	3,482	16,088
107	120	8,447	16,784	20	14,374	7,715	10	2,252	991
108	130	4,757	22,684	10	24,010	6,491	0	71	3,921
109	0	2,066	2,637	220	6,506	51,350	0	37	7,589
110	0	0	3,304	60	0	12,140	0	0	0
111	0	0	5,720	90	0	13,060	0	0	0
112	20	0	13,025	130	0	26,524	0	0	0
113	0	473	2,769	80	5,283	20,311	0	0	0
114	0	0	607	80	723	14,143	0	0	3,514
115	90	0	10,339	90	0	44,198	0	0	0
116	80	513	9,370	40	5,146	6,849	0	0	6,817
117	10	0	666	10	12,375	2,188	0	0	0
118	20	997	3,114	50	5,229	10,462	10	0	239
119	0	0	0	0	0	0	0	0	0
120	0	39	0	40	1,244	5,435	0	0	0
121	0	259	754	40	3,909	4,571	0	275	1,054
122	0	0	0	10	0	2,009	0	0	0
123	0	0	0	0	0	0	0	0	0
124	0	0	0	0	0	0	0	0	0
Total (SF)	**920 sq. ft.**	**30,813 sq. ft.**	**177,669 sq. ft.**	**1,290 sq. ft.**	**113,388 sq. ft.**	**315,629 sq. ft.**	**60 sq. ft.**	**7,798 sq. ft.**	**54,007 sq. ft.**
	31,733 sq. ft.		**177,669 sq. ft.**	**114,678 sq. ft.**		**315,629 sq. ft.**	**7,858 sq. ft.**		**54,007 sq. ft.**
Total (AC)	**0.0211 AC**	**0.7074 AC**	**4.0787 AC**	**0.0296 AC**	**2.6030 AC**	**7.2458 AC**	**0.0014 AC**	**0.1790 AC**	**1.2398 AC**
	0.7285 AC		**4.0787 AC**	**2.6326 AC**		**7.2458 AC**	**0.1804 AC**		**1.2398 AC**

Plan Sheet	Waterfront Development (In-Water)				Waterfront Development (Upland)		
	Permanent Impacts			Temporary Impact sq. ft. (AC)	Permanent Impacts		Temporary Impact sq. ft. (AC)
	Permanent Impact sq. ft. (AC)	Conversion Impact sq. ft. (AC)	Aerial Crossing (linear ft.)		Permanent Impact sq. ft. (AC)	Conversion Impact sq. ft. (AC)	
303	0	0	0	512			
304	0	91	0	1,392			
305	0	633	251	3,178			
306	0	0	0	3,024			
307	0	0	0	5,113			
308	0	0	0	50			
309	0	0	0	0			
310	0	882	102	3,153			
311	0	0	0	2,763			
312	0	14	108	5,595			
313	0	0	0	0			
314	0	0	0	429			
315	0	0	0	0	170	0	14,194
Total (SF)	**0 sq. ft.**	**1,620 sq. ft.**	**461 sq. ft.**	**25,209 sq. ft.**	**170 sq. ft.**	**0 sq. ft.**	**14,194 sq. ft.**
	1,720 sq. ft.				**170 sq. ft.**		
Total (AC)	**0.0000 AC**	**0.0372 AC**	**0.0106 AC**	**0.5787 AC**	**0.0039 AC**	**0.0000 AC**	**0.3258 AC**
	0.0372 AC				**0.0039 AC**		

1.2 COASTAL WETLAND IMPACTS

Coastal wetlands are those areas identified by the coastal wetland limit line (upper wetland limit boundary) as regulated by the Coastal Wetlands Act of 1970. This line is identified as the Promulgated Coastal Wetland Line 1970.

1.2.1 Permanent Impacts

The proposed Project will permanently impact 0.1804 acres of coastal wetlands. Approximately 0.0014 acres of coastal wetlands will be permanently impacted for the placement of structure foundation below the Promulgated Coastal Wetland Line of 1970. Of the total 286 proposed structures, 6 structures will occur in coastal wetlands. No structures are proposed within tidal channels. The primary impact associated with the construction of the Project is the conversion of 0.1790 acres of forested wetland to scrub-shrub/emergent wetlands. No change in wetland topography of these areas is proposed.

1.2.2 Temporary Impacts

The proposed project will result in approximately 1.2398 acres of temporary impacts that are less than six months in duration to coastal wetlands. These temporary impacts will occur as a result of construction access and work locations. To minimize disturbance to sensitive coastal wetlands construction access is proposed via the roadways.

1.3 WATERFRONT DEVELOPMENT IMPACTS

Pursuant to N.J.A.C. 7:7-2.4, the regulated waterfront area within the CAFRA zone shall include any tidal waterway of New Jersey and all lands lying thereunder, up to and including the mean high water line (MHWL). In those areas outside the CAFRA area and outside of the Hackensack Meadowlands District, the regulated WFD area includes:

i. All tidal waterways and lands lying thereunder, up to and including the mean high water line; and
ii. Adjacent upland areas within 100 feet of the MHWL. For properties within 100 feet of the mean high water line that extend inland beyond 100 feet from the mean high water line, the regulated waterfront area shall extend inland to the lesser of the following distances:
    (1) 500 feet from the mean high water line; or
    (2) To the first paved public road, railroad, or surveyable property line that existed on September 26, 1980; and generally parallels the waterway.

Impacts to waterfront development areas are summarized below.

1.3.1 Permanent Impacts

The proposed project will result in approximately 0.0372 acres of permanent impacts to waterfront development in-water areas. Permanent impacts are associated with tree clearing along the edge of the mean high water line (MHWL). The placement of structures below the MHWL is not proposed. No change in wetland topography of these areas is proposed. No structures are proposed within tidal channels.

Outside the CAFRA zone, the proposed project will result in approximately 0.0039 acres of permanent impacts to waterfront development upland areas. All permanent impacts are associated with structure foundations.

1.3.2 Temporary Impacts

The proposed project will result in approximately 0.5787 acre of temporary impacts that are less than six months in duration to waterfront development in-water areas. These temporary impacts will occur as a result of construction access and work locations.

Outside the CAFRA zone, the proposed project will result in approximately 0.3258 acres of temporary impacts that are less than six months in duration to the waterfront development upland areas. These temporary impacts will occur as a result of construction access and work locations.

1.3.3 Aerial Crossing

The proposed Project will not result in new impacts to waterfront development areas associated with aerial crossing. The Project will maintain the existing transmission line centerline and ROW when crossing waterfront development areas. The existing and proposed transmission line will aerially cross 461 linear feet of waterfront development areas.

2.0 PROPOSED RIPARIAN ZONE IMPACTS

The Project will result in approximately 98,283.3 square feet (2.2563) of permanent impacts including 97,559.2 square feet (2.2396 acres) of forested riparian zone vegetation and 724.1 square feet (0.166 acres) for structure foundations. The majority of forested riparian vegetation consists on a narrow hedge-row of woody vegetation location in upland area immediately adjacent to Alloway Creek Road and tidal wetlands.

Additional, 164,444.3 square feet (3.7751 acres) of temporary riparian zones disturbance due to grass to grass disturbances of less than 6 months and 82,846.5 square feet (1.9 acres) of temporary riparian zone disturbance due to impervious surface disturbances.

Table 8. Summary of Riparian Impacts

Plan Sheet	Temporary		Permanent		
	Previously Developed	Herbaceous	Forested	Pole Installation	Pole Removal
101	0	0	0	0	0
102	40917.9	29320.6	6749.2	186.4	6.1
103	10732.2	25086.2	2740.6	93	14.9
104	6964.3	30475	42008	137.4	14.5
105	6000.2	28689.9	25074.7	89.4	11.1
106	5056	28600.9	7245.1	82.8	13
107	3495.6	7304.8	5692.4	83.3	8.7
108	0	0	0	0	0
109	0	0	0	0	0
110	0	0	0	0	0
111	805.8	2209.6	2993.2	21.4	3.1
112	0	756.9	0	3.4	1.2
113	0	1334.9	0	0	0
114	805.4	8741.7	1183.8	18.3	2.2
115	0	0	0	0	0
116	0	1310.2	2468.9	8.7	2
117	0	0	0	0	0
118	190.7	0	1214.2	0	0
119	0	613.6	189.1	0	0
120	0	0	0	0	0
121	7878.4	0	0	0	0
122	0	0	0	0	0
Total (SF)	**82,846.5**	**164,444.3**	**97,559.2**	**724.1**	**76.8**
Total (AC)	**1.9019**	**3.7751**	**2.2396**	**0.0166**	**0.0018**

3.0 MITIGATION

Project-related impacts to wetlands and open waters, coastal wetlands, and waterfront development areas have been avoided to the maximum extent possible and practicable. Where impacts could not be avoided, measures have been implemented to minimize impacts.

3.1 MITIGATION FOR FRESHWATER WETLAND PERMANENT IMPACTS

Pursuant to N.J.A.C. 7:7A-7.21(e) mitigation is required for all permanent loss and/or disturbance of 0.1 acre or greater of freshwater wetlands or State open waters. Mitigation is also required for permanent loss and/or disturbance of less than 0.1 acre of freshwater wetlands or State open waters unless the applicant demonstrates to the NJDEP that all activities have been designed to avoid and minimize impacts to wetlands.

The proposed project will result in greater than 0.1 acre of permanent wetland impact. Permanent impacts include 0.0211 acre of permanent impact due to structures, and 0.7074 acre of impact due to forest conversion for a total of 0.7285 acre of permanent wetland impact. To compensate for unavoidable permanent impacts to freshwater wetlands, ACE will work with the NJDEP DLRP Mitigation Unit to develop an acceptable mitigation plan for the proposed permanent impacts.

ACE may establish offsite mitigation either through the purchase of wetland mitigation credits from a NJDEP approved mitigation bank, or through the development of an independent mitigation site. The Project area is located within the approved service area, for three potential mitigation banks. The mitigation banks are sponsored by Evergreen Environmental, LLC and the Nature Conservancy. The two mitigations banks operated by Evergreen Environmental, LLC are the Abbot Creek Mitigation Bank, and the Stipson's Island Mitigation Bank. The Nature Conservancy operates the Willow Grove Lake Mitigation Bank. The mitigation banks currently have credits available for freshwater wetlands. In addition, forested preservation credits may be used to mitigate for palustrine forested wetland impacts.

3.2 MITIGATION FOR COASTAL WETLAND PERMANENT IMPACTS

Pursuant to N.J.A.C. 7:7-17 mitigation is required for all permanent loss and/or disturbance to intertidal and subtidal shallows, tidal waters and wetlands. The proposed project will result in more than 0.1 acre of permanent coastal wetland impact. Permanent impacts include 0.0014 acre of permanent impact due to structures, and 0.1790 acre of impact due to forest conversion for a total of 0.1804 acre of permanent wetland impact. To compensate for unavoidable permanent impacts to freshwater wetlands, ACE will work with the NJDEP DLRP Mitigation Unit to develop an acceptable mitigation plan for the proposed permanent impacts. ACE may establish offsite mitigation either through the purchase of wetland mitigation credits from a NJDEP approved mitigation bank, or through the development of an independent mitigation site. The Project area is located within the approved service area, for two potential tidal mitigation banks. The mitigation banks are sponsored by Evergreen Environmental, LLC. The two mitigations banks operated by Evergreen Environmental, LLC are the Abbot Creek Mitigation Bank, and the Stipson's Island Mitigation Bank. The mitigation banks currently have credits available for both freshwater and tidal wetlands. In addition, forested preservation credits may be used to mitigate for palustrine forested wetland impacts.

3.3 MITIGATION FOR TEMPORARY IMPACTS

Temporary impacts less than six months in duration to freshwater wetlands and waters, freshwater wetland transition areas, coastal wetlands and waterfront development areas are proposed due to construction activities. Mitigation in the form of restoration of these areas will be completed upon completion of the proposed Project, as necessary.

Temporarily disturbed areas will be restored to their pre-existing conditions. All disturbed areas will be provided with a permanent vegetative cover in accordance with the standards for permanent vegetative cover provided in the *Standards for Soil Erosion and Sediment Control in New Jersey,* and a project specific Soil Erosion and Sediment Control Plan approved by the Cumberland Salem Soil Conservation District, or as directed by ACE Environmental Management. Should these restoration activities occur during inappropriate seasons for seeding (i.e., November through February), they will be

stabilized with mulch in accordance with the standards for mulch provided in the *Standards for Soil Erosion and Sediment Control in New Jersey*. Such areas shall be provided with permanent vegetative cover (i.e., seed and new mulch applied) at the next appropriate growing season. All soil erosion and sediment control measures installed prior to soil disturbances will be maintained until stabilization is accomplished.

For most disturbances, such as construction vehicles driving over herbaceous species, additional supplemental plantings should not be necessary. ACE proposes to mitigate for the temporary disturbance of 4.0787 acres of emergent/scrub-shrub wetlands and the temporary disturbance of 7.2458 acres of transition areas through on-site restoration of these areas. Disturbed areas will be seeded with an approved Wet Meadow Mix (freshwater wetlands), Transition Area Mix, or allow these areas to revegetate naturally immediately following construction activities.

ACE proposes to mitigate for the temporary disturbance of 1.2398 acres of coastal wetlands through on-site restoration of these areas. Although temporary access roads, work pads and pull sites will be constructed using composite mats, the placement of matting and subsequent use by construction vehicles may result in the impacts to tidal marsh vegetation. To mitigate for the temporary disturbance associated with construction access, ACE proposes to seed with an approved coastal wetland seed mix. ACE will work with the NJDEP Mitigation Unit to develop an acceptable mitigation plans to restore temporary disturbed tidal areas.

PART VII. QUALIFICATIONS OF PREPARERS

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