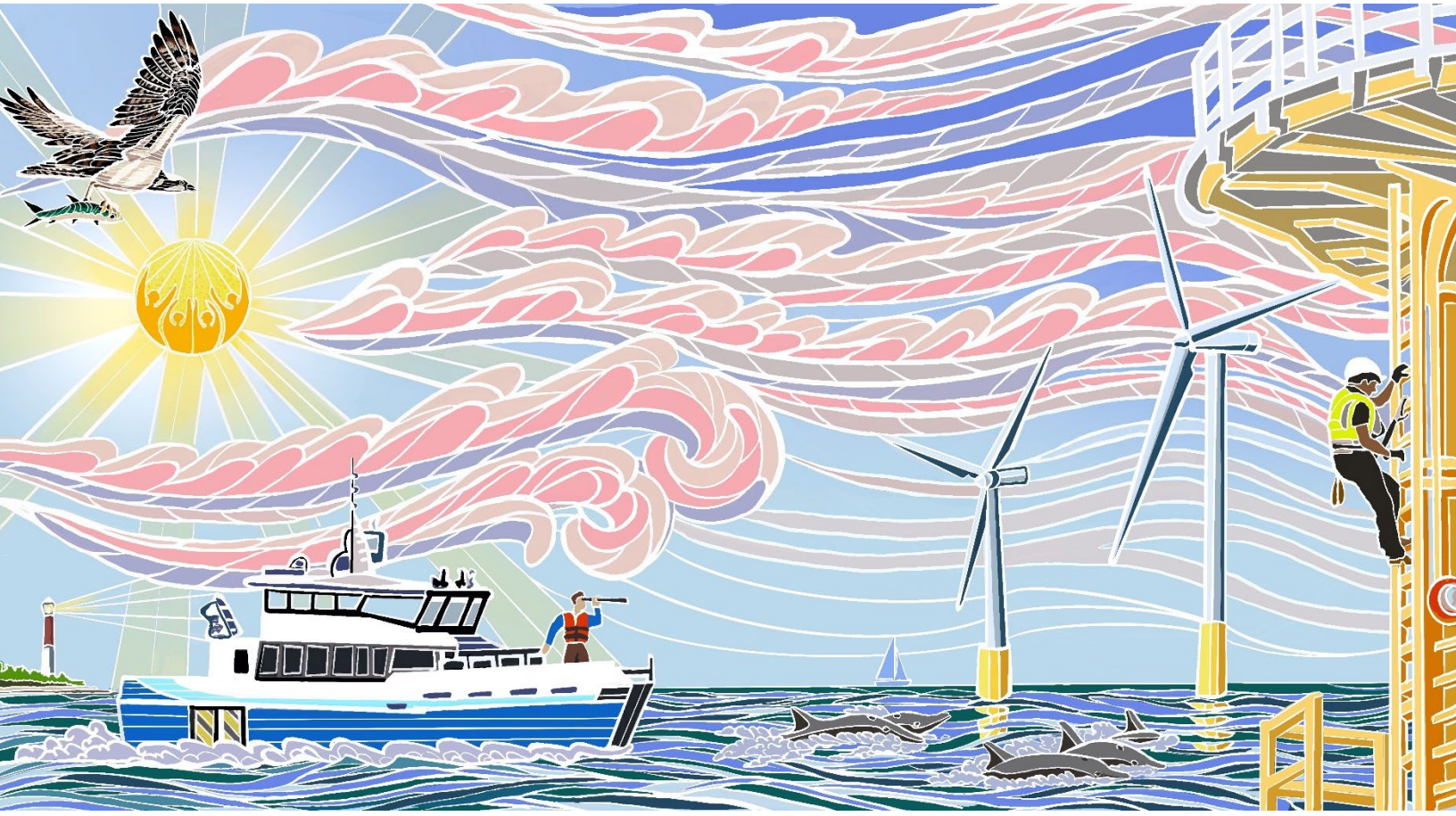

Appendix II-E2

Habitat Suitability Assessment Report - New York

March 2024

Appendix II E2

Habitat Suitability Assessment

Atlantic Shores Offshore Wind – New York Study Area

Boroughs of Brooklyn and Staten Island

Kings and Richmond Counties, New York

Prepared for:

ATLANTIC SHORES offshore wind

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March 2024

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ACRONYM LIST

Atlantic Shores	Atlantic Shores Offshore Wind, LLC
BCC	Bird of Conservation Concern
COP	Construction and Operations Plan
COPN	COP North
E	Endangered
EDR	Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.
ESA	Endangered Species Act
F	Foraging
IPaC	Information for Planning and Consultation
km	kilometer(s)
km^2	square kilometer(s)
m^2	square meter(s)
N	Nest
NC	Nesting Colony
NHP	Natural Heritage Program
NLCD	National Land Cover Database
NOAA	National Oceanic and Atmospheric Administration
NYSDEC	New York State Department of Environmental Conservation
NYSDEC NHP	New York State Department of Environmental Conservation Natural Heritage Program
OH	Occupied Habitat
PT	Proposed Threatened
SP	Special Concern
T	Threatened
USFWS	United States Fish and Wildlife

1.0 INTRODUCTION

Atlantic Shores Offshore Wind, LLC (Atlantic Shores) is a 50/50 joint venture between EDF-RE Offshore Development, LLC (an indirect wholly owned subsidiary of EDF Renewables, Inc. [EDF Renewables]) and Shell New Energies US, LLC (Shell). Atlantic Shores is submitting a Construction and Operations Plan to the Bureau of Ocean Energy Management for the development of an offshore wind energy generation project (Project) within Lease Area OCS-A 0549 (the Lease Area).

EDR was contracted by Atlantic Shores to conduct a field and desktop wildlife habitat suitability (including habitat for federal and state threatened and endangered species) within and adjacent to the proposed onshore Project components within New York State, hereafter referred to as the New York Study Area (see Exhibit 1). Information regarding wildlife habitat suitability within New York is provided in Appendix 2, E2. Specifically, the New York Study Area includes all of the land within 150 feet (46 meter [m]) of the potential onshore interconnection cable routes, landfall sites, substation site options and potential points of interconnection.

The New York Study Area consists of approximately 51 miles (82 kilometers [km]) encompassing approximately 1,396.4 acres (5.7 square kilometers [km^2]) with an assumed Study Area width of 150 feet (46 m) in the Boroughs of Brooklyn and Staten Island, Kings and Richmond Counties, New York (Figure 1 in Appendix A and Exhibit 1). This report provides information on mapped land use and land cover and a summary of field habitat suitability assessments within the New York Study Area.

Exhibit 1: New York Study Area Location (not drawn to scale)

1.1 Regulatory Framework

The Endangered Species Act (ESA) was passed in 1973, with the purpose of protecting and recovering imperiled species and the ecosystems upon which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric (NOAA) Fisheries administer the ESA. The USFWS has primary responsibility over terrestrial and freshwater organisms and the NOAA Fisheries oversees marine wildlife such as whales and anadromous fishes. The ESA allows a species to be listed as endangered or threatened and includes subspecies, varieties, and/or distinct population segments. An endangered species is in danger of extinction throughout a significant portion or all of its range. A threatened species is marked as likely to become endangered in the foreseeable future (USFWS, 2020a). More information regarding in-water T&E species are described in Volume II, Section 4.9.

The Migratory Bird Treaty Act was passed in 1918 and prohibits the take, including killing, capturing, selling, trading, and transporting of protected migratory bird species without prior authorization by the USFWS. A migratory bird species is included on the list if it meets one or more of the following criteria (USFWS, 2020b):

1. It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family, protected by one of the four international treaties or their amendments.
2. Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
3. New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

The New York State Department of Environmental Conservation (NYSDEC) Endangered Species Program (NYSDEC 2022c) and USFWS develop guidance on how to minimize or mitigate impacts and houses a detailed list of wildlife species determined by the state as threatened and endangered protecting designated species from impacts such as harassing, hunting, capturing, killing, or attempting to kill. Additionally, the New York Natural Heritage Program (NYNHP) compiles and analyzes data on species status and recovery to identify which species and habitats in the state are in greatest need of protection. The NYNHP data evaluates rare, threatened, or endangered species within the New York Study Area.

1.2 Purpose

The purpose of this report is to provide a summary of the types of habitats observed in the field and identified through desktop evaluation within the New York Study Area and provide an assessment of the suitability of the habitat to support wildlife species, particularly threatened and endangered species.

2.0 AGENCY CONSULTATION AND PUBLIC RECORDS REVIEW

EDR consulted the USFWS Information for Planning and Consultation (IPaC) online system to determine the documented presence of threatened and endangered species protected by Section 7 of the ESA under their jurisdiction. The results of the IPaC search are provided in Appendix B and are summarized in Subsections 2.1 and 2.2, respectively. Typical habitat descriptions mapped within the New York Study Area are provided in Subsection 2.3. Further, EDR submitted a request to the NYSDEC NHP for records of state- and federal-listed threatened and endangered species or their habitat within the New York Study Area. A response was provided by NYSDEC on January 30th, 2023. The results of the IPaC and NYSDEC NHP data requests are provided in Appendix B and are summarized in Subsections 2.1 and 2.3, respectively. Typical habitat descriptions mapped within the New York Study Area are provide in Subsection 2.3.

2.1 USFWS Information for Planning and Consultation

The USFWS IPaC identified five species within and/or proximate to the New York Study Area that included "Candidate Status," "Threatened Status," and "Endangered Status." The species identified included one flowering plant (seabeach amaranth [*Amaranthus pumilus*]); one insect (monarch butterfly [*Danaus plexippus*]), and three birds (piping plover [*Charadrius melodus*]), red knot [*Calidris canutus rufa*]), and roseate tern [*Sterna dougallii dougallii*]). There is proposed critical habitat for the red knot; however, the locations of such habitat are not available via IPaC search results. No critical habitat has been designated for seabeach amaranth, the monarch butterfly, and the roseate tern within and/or proximate to the New York Study Area. Typical habitat for each species is summarized in Table 1.

Table 1. Results of IPaC Review – Endangered Species Act Species

Species	Common Name	Federal Status	Typical Habitat	Mapped Habitat in New York Study Area
Amaranthus pumilus	Seabeach Amaranth	Threatened	**Habitat**: occurs on barrier islands, usually on coastal over-wash flats at the accreting ends of the islands and lower foredunes and on ocean beaches above mean high tide. Prefers areas that are not well vegetated (NatureServe, 2022).	No
Charadrius melodus	Piping Plover	Threatened	**Breeding and Nesting Habitat**: beaches; nest sites are simple depressions or scrapes in the sand approximately 6 to 8 cm diameter. Arrive from March to May and migrate as late as mid-August to southern wintering habitat (NatureServe, 2022).	Yes

Species	Common Name	Federal Status	Typical Habitat	Mapped Habitat in New York Study Area
Calidris canutus rufa	Red Knot	Threatened	**Migratory Habitat**: stopover areas, generally along the coast, that have an abundance of food such as small crabs, mussels, snails, crustaceans, marine worms, and horseshoe crab eggs. Migration is timed to coincide with the spawning season of horseshoe crabs (USFWS, 2021).	Proposed
Sterna dougallii dougallii	Roseate Tern	Endangered	**Nesting Habitat:** open sandy beaches isolated from human activity are optimal nesting habitat for the roseate tern. A variety of substrates, including pea gravel, open sand, overhanging rocks, and salt marshes are used. Roseate terns nest on beaches, barrier islands, and offshore islands (NYSDEC, 2022a).	No
Danaus plexippus	Monarch Butterfly	Candidate	**Breeding habitat:** butterflies lay eggs on their obligate milkweed host plant and larvae emerge after 2 to 5 days. Larvae feed on the milkweed until they pupate into a chrysalis before emerging 6 to 14 days later as an adult (USFWS, 2022).	No

The IPaC review also includes a list of migratory bird species that are protected under one or more of the following:

- The Migratory Bird Treaty Act of 1918
- The Bald and Golden Eagle Protection Act of 1940
- 50 CFR Sec. 10.12 and 16 U.S.C Sec 668(a).

Activities that will impact migratory birds, eagles or their critical habitats should follow the applicable regulations and consider applying conservation measures according to the USFWS guidance. Table 2 summarizes migratory bird and eagle species that have mapped habitat within or proximate to the New York Study Area.

Table 2. Results of IPaC Review - Migratory Bird Species

Species	Common Name	Status	Breeding Season
Haematopus palliatus	American Oystercatcher	Bird of Conservation Concern (BCC)	April 15 to August 31
Haliaeetus leucocephalus	Bald Eagle	Not a BCC	October 15 to August 31
Cepphus grylle	Black Guillemont	Not a BCC	May 15 to September 10
Melanitta nigra	Black Scoter	Not a BCC	Breeds elsewhere
Rynchops niger	Black Skimmer	BCC	May 20 to September 15
Coccyzus erythropthalmus	Black-billed Cuckoo	BCC	May 15 to October 10
Rissa tridactyla	Black-legged Kittiwake	Not a BCC	Breeds elsewhere
Vermivora pinus	Blue-winged Warbler	BCC	May 1 to June 30
Dolichonyx oryzivorus	Bobolink	BCC	May 20 to July 31
Pelecanus occidentalis	Brown Pelican	Not a BCC	January 15 to September 30
Cardellina canadensis	Canada Warbler	BCC	May 20 to August 10
Dendroica cerulea	Cerulean Warbler	BBC	April 29 to July 29
Chaetura pelagica	Chimney Swift	BBC	March 15 to August 25
Somateria mollissima	Common Eider	Not a BCC	June 1 to September 30
Gavia immer	Common Loon	Not a BCC	April 15 to October 31
Uria aalge	Common Murre	Not a BCC	April 15 to August 15
Calonectris diomedea	Cory's Shearwater	BCC	Breeds Elsewhere
Phalacrocorax auritus	Double-crested Cormorant	Not a BCC	April 20 to August 31
Alle alle	Dovekie	Not a BCC	Breeds elsewhere
Antrostomus vociferus	Eastern Whip-poor-will	BCC	May 1 to August 20
Puffinus gravis	Great Shearwater	Not a BCC	Breeds elsewhere
Gelochelidon nilotica	Gull-billed Tern	BBC	May 1 to July 31
Limosa haemastica	Hudsonian Godwit	BCC	Breeds elsewhere
Oporornis formosus	Kentucky Warbler	BBC	April 20 to August 20
Tringa flavipes	Lesser Yellowlegs	BCC	Breeds elsewhere
Asio otus	Long-eared Owl	BCC	March 1 to July 15
Clangula hyemalis	Long-tailed Duck	Not a BCC	Breeds elsewhere
Dendroica discolor	Prairie Warbler	BCC	May 1 to July 31
Protonotaria citrea	Prothonotary Warbler	BCC	April 1 to July 31
Calidris maritima	Purple Sandpiper	BCC	Breeds elsewhere
Alca torda	Razorbill	Not a BCC	June 15 to September 10
Mergus serrator	Red-breasted Merganser	Not a BCC	Breeds elsewhere
Melanerpes erythrocephalus	Red-headed Woodpecker	BCC	May 10 to September 10
Phalaropus lobatus	Red-necked Phalarope	Not a BCC	Breeds elsewhere
Gavia stellata	Red-throated Loon	BCC	Breeds elsewhere
Larus delawarensis	Ring-billed Gull	Not a BCC	Breeds elsewhere

Species	Common Name	Status	Breeding Season
Sterna dougallii	Roseate Tern	Not a BCC	May 10 to August 31
Thalasseus maximus	Royal Tern	Not a BCC	April 15 to August 31
Arenaria interpres morinella	Ruddy Turnstone	BCC	Breeds elsewhere
Euphagus carolinus	Rusty Blackbird	BCC	Breeds elsewhere
Limnodromus griseus	Short-billed Dowitcher	BCC	Breeds elsewhere
Melanitta perspicillata	Surf Scoter	Not a BCC	Breeds elsewhere
Uria lomvia	Thick-billed Murre	Not a BCC	April 15 to August 15
Melanitta fusca	White-winged Scoter	Not a BCC	Breeds elsewhere
Tringa semipalmata	Willet	BCC	April 20 to August 5
Oceanites oceanicus	Wilson's Storm-petrel	Not a BCC	Breeds elsewhere
Hylocichla mustelina	Wood Thrush	BCC	May 10 to August 31

2.2 New York State Mapped Habitats and Significant Natural Communities

Review of publicly available databases (New York State Department of State Significant Coastal Fish and Wildlife Boundaries and NYNHP Natural Heritage Community Occurrences) within and adjacent to the New York Study Area indicated several mapped ecologically important communities (see Figure 2). These datasets revealed three areas of designated Significant Natural Communities and three state-designated Significant Coastal Habitat Communities.

Significant Natural Communities are defined as integral for providing habitat, feeding opportunities, and economically important benefits for the local area. Three Significant Natural Communities have been identified within the New York Study Area—Coastal Oak-Beech Forest, Post Oak-Blackjack Oak Barrens, and Red Maple-Sweetgum Swamp. Coastal Oak-Beech Forest habitat is located in the southwestern portion of the New York Study Area near Arthur Kill (see Figure 2). The Coastal Oak-Beech Forest community consists of hardwood forest with oaks and American beech occurring in dry, well-drained sandy soils of the Atlantic coast (NYNHP 2022). Common species found in this community include black oak (*Quercus velutina*), white oak (*Quercus alba*), scarlet oak, and chestnut oak (*Quercus montana*). The Coastal Oak-Beech Forest community comprises 5.1 acres (20,639 meter [m^2]) of the New York Study Area.

The second Significant Natural Community type, Post Oak-Blackjack Oak Barrens, is located in the northwestern portion of the New York Study Area adjacent to the Red Maple-Sweetgum Forest (see Figure 2). The Post Oak-Blackjack Oak Barrens community is characterized by open barrens on slopes and ridges with stunted canopy and sparse ground cover (NYNHP 2022). Dominant species in this community are post oak (*Quercus stellata*), scarlet oak (*Quercus coccinea*), and blackjack oak (*Quercus marilandica*) (NYNHP 2022). The Post Oak-Blackjack Oak Barrens community comprises 0.2 acre (809.4 m^2) of the New York Study Area. Finally, the Red Maple-Sweetgum Swamp is located in two locations of the New York Study Area: (1) the central portion of the New York Study Area which is hydrologically connected to the Swamp Creek Marshes Coastal Habitat and Swamp Creek; and (2) the southwestern portion of the New York Study Area adjacent to the Post Oak-Blackjack Oak Barrens (see Figure 2). The Red Maple-Sweetgum Swamp community is dominated by sweetgum (*Liquidambar styraciflua*) and red maple (*Acer rubrum*) and is characterized by a well-developed shrub layer, located on poorly drained wet flats consisting of clay and

sandy loams (NYNHP 2022). The Red Maple-Sweetgum Swamp community comprises 15.1 acres (61,108 m^2) of the New York Study Area.

In addition to Significant Natural Communities, three named Significant Coastal Habitat Communities are also located within and/or adjacent to the New York Study Area. Lemon Creek Designated Habitat is located in the southwestern portion of the New York Study Area approximately 3 miles (5 km) southwest of Great Kills Harbor. The habitat consists of an approximately 70-acre (283,280 m^2) tidal wetland system along Lemon Creek from Princes Bay upstream to Woodvale Avenue. Lemon Creek Habitat is ecologically significant, the only undisturbed tidal wetland area on the south shore of Staten Island and provides habitat for a diverse group of wildlife (NYDOS, 1992a). A total of 2.9 acres (11,736 m^2) of the Lemon Creek Designated Habitat occurs within the New York Study Area (see Figure 2).

The Fresh Kills Designated Habitat is a Significant Coastal Habitat Community located in the central portion of the New York Study Area along Arthur Kill and totals approximately 1,000 acres (4 km^2) of tidal wetlands associated with three tidal creeks (Main Creek, Springville Creek, and Richmond Creek) (NYDOS, 1992b). These tidal flat marshes and mudflats provide some of the most valuable habitats for fish and other wildlife in Richmond County; however, Arthur Kill and surrounding areas have experienced significant disturbances from anthropogenic activities. A total of 24.3 (98,339 m^2) acres of the Fresh Kills Designated Habitat occurs within the New York Study Area (see Figure 2).

The Saw Mill Creek Marsh Designated Habitat occurs within the central portion of the New York Study Area along Saw Mill Creek. This area consists of a series of ravines that drain into Arthur Kill and is comprised of a mixture of semi-deciduous hardwood forests, herbaceous wetlands, and expansive marshland totaling approximately 54 acres (218,530 m^2). (NYSDEC, 2022b). Approximately 12.1 acres (48,967.0 m^2) of the Sawmill Creek Marshes Designated Habitat occurs within the New York Study Area (see Figure 2).

2.3 NYSDEC Natural Heritage Program

An NYSDEC Natural Heritage Program project screening request was submitted on December 22, 2022, for the New York Study Area; a response was received January 31, 2023. Table 3 provides the results of the NYSDEC Natural Heritage Program response letter indicating species within and adjacent to the New York Study Area.

Table 3. Results of NYSDEC Natural Heritage Program Database Request

Species	Common Name	NY State Conservation Status[1]	Typical Habitat
Haliaeetus leucocephalus	Bald Eagle	Threatened	**Nesting:** tall trees or on pinnacles or cliffs near water (NatureServe, 2022). **Breeding**: coastal areas, bays, rivers, lakes, reservoirs (NatureServe, 2022).
Kinosternon subrubrum	Eastern Mud Turtle	Endangered	**General**: shallow, slow moving fresh or brackish water with soft bottom and abundant

Species	Common Name	NY State Conservation Status[1]	Typical Habitat
			vegetation; also wet meadows (NatureServe, 2022).
Sceloporus undulatus	Eastern Fence Lizard	Threatened	**General**: wooded landscapes with open areas.
Ixobrychus exilis	Least Bittern	Threatened	**Breeding**: emergent wetlands, primarily freshwater, but occasionally brackish marshes. Prefers marshes with scattered woody vegetation (NatureServe 2022). **General**: Brackish and saline swamps and marshes (NatureServe 2022).
Podilymbus podiceps	Pied-billed Grebe	Threatened	**General/Breeding**: ponds and marshes in inlets, along edges of rivers, lake and reservoirs, and occasionally estuarine wetlands.
Falco peregrinus	Peregrine Falcon	Endangered	**Breeding:** Peregrine falcons prefer open country from tundra, savannah and seacoasts, to high mountains, as well as open forests and tall buildings. Nests are built on high ledges, 50 to 200 feet off the ground (NYSDEC 2023).
Megaptera novaeangliae	Humpback Whale	Endangered	**Habitat:** Open ocean (NOAA 2023).
Smilax pulverulenta	Powdery Carrion Flower	Endangered	**Habitat:** In NY, two populations occur along the banks of a stream at the base of a slope. A third population is in a heavily disturbed successional oak-hickery forest near a playground, small wetland, and public golf course (NYNHP 2012a).
Lemna perpusilla	Minute Duckweed	Threatened	**Habitat:** Can be found in kettlehole ponds, the surface of rivers, in ponds, springs, rivers and lakes, particularly quiet waters (NYNHP 2012b).
Eupatorium torreyanum	Torrey's Thoroughwort	Threatened	**Habitat:** Has been found in sandy, open habitats, often in grasslands or dunes, but also in openings with shrub thickets or dry oak woods in NY> Some of these sites are adjacent to coastal plain ponds or brackish marshes, and several of the currently known sites are associated with human disturbance such as trails, reservoirs, or airports (NYNHP 2023).
Quercus phellos	Willow Oak	Endangered	**Habitat:** In NY, Willow Oak has been found in floodplain forests, maritime grasslands, and roadside forests and woodlands (NYNHP 2010a).
Pinus virginiana	Virginia Pine	Endangered	**Habitat:** In NY, as elsewhere, this tree is associated with habitats of low productivity due to poor, dry soils. It has been found at openings within coastal oak forests, barrens of

Species	Common Name	NY State Conservation Status[1]	Typical Habitat
			pitch pine and/or of scrub oak, and open, rocky summits (NYNHP 2007).
Viburnum nudum var. *nudum*	Southern Wild Raisin	Endangered	**Habitat:** This species is associated with sweetgum swamps on Staten Island (NYNHP 2012c).
Hypericum stragulum	Low St. John's Wort	Endangered	**Habitat:** In NY, this species occurs along a rutted road through pine barrens; partly shrubby, partly rough mown section of powerlines; in open oak wooded hills & in rough mown field; grassy openings around old farm yards in woods mostly of black and white oak; dry, open oak woods on eroded bank between footpath on canyon rim and steep shale cliffs (NYNHP 2012d).
Magnolia virginiana var. *virginiana*	Sweetbay Magnolia	Endangered	**Habitat:** In NY, this tree grows in red maple hardwood swamps and red maple sweetgum swamps. Sometimes they are isolated within the swamp or quite close to development. The soils can be wet, saturated, or somewhat drier near development (NYNHP 2012e).
Diospyros virginiana	Persimmon	Threatened	**Habitat:** In NY, they have been found in coastal oak-hickory forests, in swampy woods with blackgum, red maple, and spicebush, and along the margin of coastal ponds and wet depressions (NYNHP 2010b)
Cyperus echinatus	Globe Flat Sedge	Endangered	**Habitat:** The few records of this species in NY are from open, disturbed areas, including serpentine grasslands, meadows kept open by fire and other disturbance, and the upland edge of a high salt marsh (NYNHP 2010c).
Ascelpias viridiflora	Green Milkweed	Threatened	**Habitat:** A milkweed of open areas on serpentine, calcareous, sandstone, or diabase bedrock, or sometimes in open sandy soil. These areas include recently burned slopes on serpentine rock, serpentine grasslands, mowed golf course rough atop serpentine bedrock, open maritime grassland habitats on sandy soil, open limestone slopes within cedar glades, open rocky summit grasslands on diabase rock formations, open calcareous rocky summits, alkaline sandstone ridges within open cedar glades, old pastures with alkaline soils, open cedar glades with exposed sandstone, and dry shaley slopes (NYNHP 2004).

Species	Common Name	NY State Conservation Status[1]	Typical Habitat
Gratiola virginiana	Virginia Hedge Hyssop	Endangered	**Habitat:** Anthropogenic (man-made or disturbed habitats), shores of rivers or lakes, wetland margins (Nature Plant Trust 2023).
Cenchrus tribuloides	Dune Sandspur	Threatened	**Habitat:** maritime sand dunes and beaches (NYNHP 2022).
Vitis vulpina	Winter Grape	Endangered	**Habitat:** mixed forest sloping to a steam, banks of large body of water, climbing trees along riverbanks (NYNHP 2022).
Pycnanthemum muticum	Blunt Mountain Mint	Threatened	**Habitat:** wet, sandy, coastal habitat (e.g., wet swales between dunes, coastal plain ponds) (NYNHP 2022).
Sabatia angularis	Rose Pink	Endangered	**Habitat:** human-disturbed openings in successional shrublands and grasslands (NYNHP 2022).
Lespedeza stuevei	Stuve's Bush Clover	Threatened	**Habitat:** disturbed openings dominated by grasses and wildflowers within pitch pine scrub oak barrens and woods and coastal oak-hickory woods (NYNHP 2022).

2.4 Land Use/Land Cover Mapped within the New York Study Area

Land cover and vegetation occurring within the New York Study Area were evaluated using current National Land Cover Database (NLCD) mapping (Yang et al. 2019). The New York Study Area encompasses approximately 1,845 acres (7.6 km^2) and primarily consists of developed lands of varying densities (see Table 6 and Figure 3).

Table 4. Vegetation/Land Cover within the New York Study Area

Land Cover Class	Acres	Percent Cover (%)
Open Water	55.6	4.0
Developed, Open Space	82.7	5.9
Developed, Low Intensity	162.1	11.6
Developed, Medium Intensity	377.3	27.0
Developed, High Intensity	470.1	33.7
Deciduous Forest	39.1	2.8
Shrub/Scrub	1.6	0.1
Grassland/Herbaceous	4.7	0.3
Pasture/Hay	2.1	0.2

Land Cover Class	Acres	Percent Cover (%)
Woody Wetlands	91.1	6.5
Emergent Herbaceous Wetlands	110.1	7.9
Total	**1,396.4**	**100.0**

Source: NLCD, 2019 (Yang et al., 2019).

2.5 Descriptions of Habitat Types Mapped within the New York Study Area

The New York Study Area ranges from shallow, flat shorelines and dunes to the east, to open-water back bay tidal marshes, to deciduous and mixed forests along the proposed onshore interconnection cable corridors and substations. Common characteristics of coastal terrestrial habitats that occur within and directly adjacent to the New York Study Area and dominant vegetation species are as follows:

- *Deciduous and Scrub-Shrub/Grassland and Herbaceous Field:* Deciduous and mixed forests are the dominant naturally occurring habitat type in this region of New York. Forested land encompasses approximately 61% of the State of New York (18.6 million acres [<1 million km^2]); however, these areas are not distributed evenly across all counties. The average urban tree cover percentage in Kings County is approximately 10.1 to 20%, and the average urban tree cover in Richmond County is approximately 20.1 to 30% (USDA, 2018). The most common cover type of forest in the Long Island/Staten Island area is a semi-deciduous to mixed deciduous-evergreen maritime Oak/Hickory Forest. This forest type consists of common broadleaf species such as holly (*Illex opaca*), beech (*Fagus grandifolia*), oak (*Quercus* sp.), and red cedar (*Juniperus virginiana*); coastal oak-pine (*Quercus virginiana*), oak hickory, oak-beech, and oak-laurel forests of uplands, such as morainal slopes and ridges; red maple-tupelo (*Acer rubrum-Nyssa sp.*) and white cedar (*Thuja occidentalis*) swamps of lowlands; oak-tulip tree (*Liriodendron tulipifera*) forests of highlands, such as on morainal ridges of northern Long Island; and pitch pine-oak (*Pinus rigida*) of outwash plains. The shrub understory is also characteristic for the region and includes species such as: huckleberry (*Gaylussacia* sp.), blueberry (*Vaccinium* sp.), holly, and sheep laurel (*Kalmia angustifolia*). Some wildlife species that prefer deciduous forests include the American goldfinch (*Carduelis tristis*), cedar waxwing (*Bombycilla cedrorum*), and eastern cottontail (*Sylvilagus floridanus*). More mature forests are more likely to house black bears (*Ursus americanus*), porcupines (*Erethizon dorsatum*), and pileated woodpeckers (*Dryocopus pileatus*).

    - Typical scrub-shrub/herbaceous fields in Long Island occur along and are generally associated with Hempstead Plains grassland communities (NYFA, 2022). This inland habitat functions for grassland bird species and a diversity of herbaceous and woody shrub vegetation; however, these habitats are not suitable for many wildlife species along the edges, particularly where active human influence is persistent such as highways, railroads and other forms of residential, commercial, and industrial development.

- Open Water: Freshwater rivers and other waterbodies occur on Long Island and Staten Island and provide habitat to a variety of floral and faunal species. Specially, some common aquatic species

that can be found throughout freshwater, perennial streams include large/smallmouth bass (*Micropterus salmoides/Micropterus dolomieu*), northern pike (*Esoc lucius*), yellow perch (*Perca flavescens*), and carp (*Cyprinus carpio*) among many others.

Although not directly within the New York Study Area, dune and beach habitat occur immediately adjacent to the east of the New York Study Area in several beachfronts on Staten Island:

- *Shoreline*: The sandy, coastal shoreline consists of dunes made up of the foredune and secondary dunes leading seaward to the beach berm or backshore (the flat, dry section of the beach normally used for recreation above the high tide line), to the foreshore (area that is exposed to constant wave action, intertidal areas between mean low water to the high tide zone) continuing under water to the nearshore area, submerged area below mean water to 29.5 feet (9 m) (Wootton et al., 2016). These coastal, terrestrial habitats are subject to constant change due to wave and wind action, currents, and storm activities. The constant change, open environment, lack of freshwater, and sparse vegetation makes this habitat inhospitable to most species except those specifically adapted to these conditions or for species who utilize the area as transients for foraging purposes such as Gulls (*Larus* spp.), sand crabs (*Emerita* spp.) and Plovers/Lapwings (*Charadrius* spp.).

- *Dune*: Westward of the shoreline is the dune habitat. Dunes, much like a typical beach profile, are also constantly changing in response to short- and long-term processes associated with wind and wave action, storms, and seasonal variations. There are an estimated 130 miles (209 km) of maritime dunes on Long Island (approximately 100 miles [161 km] on the south shore) covering approximately 4,700 to 14,000 acres (19 km^2 to 57 km^2) (NYNHP, 2022).

    - Common wildlife species that inhabit dunes are whitetail deer (*Odocoileus virginianus*), rabbits (*Sylvilagus floridanus*), common terns (*Sterna* spp.), and other ground-nesting shorebirds among many others. These species typically graze, nest or rest amongst the American beachgrass (*Ammophila breviligulata*), seaside goldenrod (*Solidago sempervirens*), and Asiatic sand sedge (*Carex kobomugi*). Although dunes along the coast make up a very narrow stretch of land in New York, a small number of highly specialized species with adaptations to thrive in such harsh conditions inhabit these areas. Due to their specialized adaptations and the limited available habitat, many are either state or federally listed threatened or endangered species.

- *Tidal Marsh/Back-Bay/Coastal River*: Tidal salt marshes can be found throughout coastal New York and contain numerous plant and animal species, particularly avian and fish species, that have adapted to saline conditions and temperature extremes (MTEC, 1995). Tidal marsh creeks have tidal currents that continuously deposit sediment and nutrients from bays into rivers making the salinity change rapidly from salt to brackish water. This deposition of sediment and nutrients also allows specially adapted plant species to thrive in these areas. Many areas of Long Island contain low salt marsh communities which occur in sheltered areas of the coast. The mean tidal range of low salt marshes on Long Island is typically 32 inches (1 m) and often form in basins with an average depth of 5 feet (2 m) or greater (NYFA, 2022).

- Plant species typical of these back-bays and salt marshes include annual salt marsh aster (*Aster subulatus*), big cordgrass (*Spartina cynosuroides*), saltmarsh cordgrass (*Spartina alterniflora*), salt hay (*Spartina patens*), marsh elder (*Iva frutescens*), and common reed (*Phragmites australis*) (MTEC, 1995).

- Common wildlife species, including fish, that occur within these areas include the white perch (*Morone americana*), striped bass (*Morone saxatilis*), bluefish (*Pomatomus saltatrix*), alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*) diamondback terrapin (*Malaclemys terrapin*), snapping turtle (*Chelydra serpentina*), mud turtle (*Kinosternon subrubrum*), raccoon (*Procyon lotor*), and muskrat (*Ondatra zibethicus*). The striped bass, alewife and blueback herring are among a small group of fish that are anadromous, living predominantly in marine or brackish waters but migrate into fresh water in the spring to spawn.

- Salt marsh habitats provide nesting and foraging habitat for resident and seasonal avian species. In addition, during of the spring and fall migration, many avian species use this habitat as a stopover to rest and feed. Representative bird species found in these coastal habitats include the American bittern (*Botaurus lentiginosus*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), willet (*Catoptrophourus semipalmatus*), laughing gull (*Larus atricilla*), and seaside sparrow (*Ammospiza maritima*). In addition to common bird species found in salt marsh habitats, some federal- and state-listed threatened and endangered species also utilize these habitats.

3.0 FIELD INVESTIGATIONS

Field investigations of vernal pools and field/desktop habitat assessment studies were conducted within the New York Study Area by EDR in June 2022, July 2022, October 2022, and August 2023.. During all field studies, wildlife species observed, including threatened and endangered species, within the Study Areas were noted.

3.1 Vernal Pool Methodology

Vernal Pool Surveys consisted of systematically investigating the entire New York Study Area. For each potential vernal pool area, data was collected that included photographs, documenting existing conditions within and adjacent to potential vernal pool areas, and collecting geographic location data for vernal pool features (as applicable) using a Global Positioning System [GPS] with reported sub-meter accuracy. Vernal pools were identified based on a variety of biological, hydrological, and physical characteristics including:

1. Evidence suggesting inundation for at least two consecutive months between March and September
2. Hydrological isolation (no permanent inlets or outlets of flowing surface water)
3. Observed absence of fish species within the pool
4. Presence of standing water
5. Sparse or no vegetation growing within pool
6. Water-stained leaves within/adjacent to the pool
7. Evidence of moss trim lines/buttressing/watermarks on nearby trees
8. Connectivity to adjacent upland forest habitat
9. The presence of obligate and/or facultative indicator species within and/or near the pools.

3.2 Habitat Suitability Assessment Methodology

Habitat surveys were performed within the New York Study Area and immediately adjacent areas in June 2022, July 2022, October 2022, and August 2023. Visual assessments were conducted to determine the type of habitats observed based on vegetation community types, as well as immediately adjacent areas wherever possible. Wildlife species observed during field investigations, including threatened and endangered species, were GPS located and habitat usage noted.

As the Project has matured, modifications to the onshore routes and parcels under consideration for onshore components such as the substation have occurred following field efforts. To supplement for areas that were not field-delineated, a desktop analysis was performed using Geographic Information System, current aerial imagery, and local knowledge from experienced professionals. Habitat types were digitized based on these resources and included in this assessment.

Areas that could not be field evaluated were desktop evaluated using publicly available mapping, databases, and aerial photography. As design progresses, these areas will be verified in the field and this report will be updated with those results accordingly.

4.0 RESULTS

This section presents the habitats observed within the New York Study Area and summarizes the results of the vernal pool survey and an assessment of the observed habitats to support regulated wildlife species.

4.1 Habitat Types within Study Area

Generally, the New York Study Area occurs within established linear developed rights-of-way (ROWs) such as roadways, railroads, transmission line ROWs, and recreational trails. As a result, many of the habitats observed have experienced some level of past and ongoing disturbance, particularly due to established populations of non-native invasive species. The following habitat types were observed within the New York Study Area:

- Developed/Disturbed Areas: This type of habitat included areas such as roads, recreational trails, railroad corridors, buildings (residential, commercial, or industrial) maintained landscapes, and other areas associated with the built environment including agricultural lands.

- Forest – Mixed: this habitat type generally occurred inland along the pedestrian bike path/transmission line ROW and was dominated by white oak (*Quercus alba*), pitch pine (*Pinus rigida*), black gum (*Nyssa sylvatica*), red oak (*Quercus rubra*), black oak (*Quercus velutina*), and red maple (*Acer rubrum*) in the canopy. The understory was dominated by pitch pine, spicebush (*Lindera benzoin*), honeysuckle (*Lonicera japonica*), raspberry (*Rubus idaeus*), and eastern red cedar (*Juniperus virginiana*). The herbaceous layer was dominated by grasses, round greenbrier (*Smilax rotundifolia*), Canada goldenrod (*Solidago canadensis*), and spotted knapweed (*Centaurea stoebe*).

- Forest – Deciduous: This habitat type occurred throughout the New York Study Area, along public roads and undeveloped areas. The canopy was dominated by black gum, sweet gum (Liquidambar styraciflua), red oak, white oak, black locust (*Robinia pseudoacacia*), Norway maple (*Acer platanoides*), wild cherry (Prunus avium), and sassafrass (*Sassafras albidum*). The understory was dominated by roundleaf greenbrier, multiflora rose (*Rosa multiflora*), pitch pine, and black raspberry (Rubus occidentalis). The herbaceous layer was dominated by garlic mustard (*Alliaria petiolate*), Canada goldenrod, poison ivy (*Toxicodendron radicans*) and numerous grass species.

- Forest – Evergreen: This habitat type occasionally occurred in the New York Study Area in forested areas off of public roads and maintained ROWs. This habitat type was dominated by pitch pine (*Pinus rigida*), white pine (*Pinus strobus*), white oak in the canopy and mountain laurel (*Kalmia latifolia*) in the shrub layer.

- Forested Wetlands: Mainly found in wooded areas within a gully along the pedestrian bike path. The canopy is dominated by red maples; spicebush, black gum, red maple saplings, and blueberry

(*Vaccinium corymbosum*) in the understory. The herbaceous layer is dominated by a sparse cover of cinnamon fern (*Osmundastrum cinnamomeum*) and black gum seedlings.Herbaceous: This habitat type was mainly located in heavily disturbed areas adjacent to roadways and ROWs. Dominant herbaceous species included grasses, Chinese bush clover (*Lespedeza cuneata*), roundleaf greenbrier, deer tongue (*Dichanthelium clandestinum*), Canada goldenrod, mugwort (*Artemisia vulgaris*), wrinkle-leaf goldenrod (*Solidago rugosa*), spotted knapweed, white clover (Trifolium repens), asters (*Symphyotrichum novae*), poison ivy, pokeweed, crown vetch (*Securigera varia*), Virginia creeper, and wild grape. Shrubs occurred occasionally and usually in small patches and included red cedar, multiflora rose and holly (*Ilex aquifolium*). Trees lined the outskirts of the fields and were dominated by red oak, white oak, black oak, sassafras and wild cherry.

- Herbaceous Wetlands occurred throughout the New York Study Area and consisted of freshwater and tidal wetland areas within the New York Study Area.
    - Tidal areas were dominated by smooth cordgrass (*Spartina alterniflora*), glasswort (*Salicornia depressa*), seaside goldenrod (*Solidago sempervirens*), saltmeadow cordgrass (*Spartina patens*), sea lavender (*Limonium carolinianum*), and common reed (*Phragmites australis*).
    - Freshwater areas were dominated by reed canary grass (*Phalaris arundinacea*), broadleaf cattail (*Typha latifolia*), marsh-mallow (*Althaea officinalis*) and hairgrass (*Deschampsia cespitosa*)
- Scrub–Shrub: This habitat is generally comprised of deciduous, mixed, and evergreen species, and is typically occurred along artificial berms such as the railroad and roadway corridors, maintained portions transmission line ROWs, and isolated patches adjacent to developed areas. Common species found in the shrub layers included: black oak saplings, wild cherry saplings, shining sumac (*Rhus copallinum*), sassafras saplings, silver maple saplings (*Acer saccharinum*), eastern red cedar, tree of heaven (*Ailanthus altissima*), multiflora rose, poison ivy (*Toxicodedron radicans*), Virginia creeper (*Parthenocissus quinquefolia*), Japanese honeysuckle (*Lonicera japonica*), high tide bush (*Iva frutescens*), and common reed *(Phragmites australis*).
- Shrub-Scrub Wetlands: This habitat type occasionally occurred in the New York Study Area. The shrub layer was dominated by Eastern red cedar and multiflora rose. Herbaceous species consisted of grasses, Virginia creeper and poison ivy.
- Open Water/Open Water Wetlands: This habitat type consisted of streams and rivers in the New York Study Area. Waterways within the New York Study Area are associated with the following waterways and associated tributaries: Arthur Kill Tidal Strait, Main Creek, Richmond Creek, and Raritan Bay. Any ponded areas in the New York Study Area are likely to be influenced by tidal fluctuations and man-made barriers.

Developed/Disturbed areas were the most abundant within the New York Study Area (72%). The remainder of habitat types largely occurred along roadways and therefore few species were observed. Table 5 provides

the types and acreage of habitat types found within the New York Study Area. Wildlife species that were observed include transient individuals flying overhead and included species such as: Herring Gull (*Larus argentatus*), Laughing Gull (*Leucophaeus atricilla*), House Sparrow (*Passer domesticus*), Mourning Dove (*Zenaida macroura*) and other common avian species adapted to developed/disturbed habitat types. No federal- or state-listed threatened and endangered species were observed within the New York Study Area during field studies. Each of these habitats' location and extent within the New York Study Area is shown on the mapping presented in Appendix D.

Table 5. Habitat Type Cover Within the New York Study Area

Habitat Type	Area (acres)	Area (m^2)	Percent Cover (%)
Developed/Disturbed	1,006.8	4,074,391.4	72.1
Forest – Deciduous	108.2	437,886.4	7.7
Forest – Evergreen	0.3	1,336.2	0.02
Forest – Mixed	28.8	116,354.6	2.1
Forested Wetland	16.9	68,339.2	1.2
Herbaceous	37.9	153,403.3	2.7
Herbaceous Wetland	113.4	458,883.7	8.1
Scrub-Shrub	19.6	79,367.4	1.4
Scrub-Shrub Wetland	1.0	3,898.3	0.1
Open Water/Open Water Wetlands	64.0	259,116.3	4.6

4.2 Vernal Pool Survey Results

An evaluation based on the methodology presented in Section 3.1 determined that no areas within the New York Study Area would satisfy the criteria to be classified as a vernal pool.

4.3 Observed Habitat Suitability for Federal and State-Listed Species

As described in Section 4.1, most of the habitat observed within the New York Study Area are disturbed and influenced by human activity and/or degraded due to non-native invasive species and does not provide critical habitat for any of the federal- or state-listed threatened and endangered species documented to occur in this area. The USFWS defines critical habitat as areas that are essential to the conservation of an endangered or threatened species and that may require special management and protection. Table 6 summarizes the federal- and state-listed threatened and endangered species and provides an assessment if any critical habitat was observed within the New York Study Area based on the requirements presented in Tables 1 and 3.

Table 6. Federal- and State-Listed Species – Critical Habitat Assessment Summary

Species	Common Name	Federal/State Status	Critical Habitat in New York Study Area	Comments
Amaranthus pumilus	Seabeach Amaranth	Federal - Threatened	No	The New York Study Area does not provide suitable habitat due to the lack of dunes.
Charadrius melodus	Piping Plover	Federal - Threatened	No	The New York Study Area does not contain suitable habitat due to the lack of dune and beach habitat. Individuals could utilize beach areas adjacent to the Study Area for foraging opportunities.
Calidris canutus rufa	Red Knot	Federal - Threatened	No	Individuals could utilize beach areas adjacent to the Study Area for foraging opportunities.
Sterna dougallii dougallii	Roseate Tern	Federal - Endangered	No	Individuals could utilize beach areas adjacent to the Study Area for foraging opportunities.
Haliaeetus leucocephalus	Bald Eagle	State - Threatened	Potentially	Individuals could utilize trees along the waterfront of Arthur Kill Tidal Strait, Atlantic Ocean, and New York Harbor.
Kinosternon subrubrum	Easter Mud Turtle	State - Endangered	Potentially	Individuals could utilize areas of open waters in the New York Study Area.
Sceloporus undulatus	Eastern Fence Lizard	State - Threatened	Potentially	Individuals could utilize areas of deciduous and mixed forest in the New York Study Area.
Ixobrychus exilis	Least Bittern	State - Threatened	Potentially	Individuals could utilize herbaceous and scrub-shrub wetlands in the New York Study Area, however some of these may consist of brackish water, which is not ideal habitat for the species.
Podilymbus podiceps	Pied-billed Grebe	State - Threatened	Potentially	Individuals could utilize marsh and wetland habitat located along the edge of Arthur Kill Tidal Strait, Atlantic Ocean, and New York Harbor.
Cenchrus tribuloides	Dune Sandspur	State - Threatened	No	The New York Study Area does not contain suitable habitat due to the lack of dune and beach habitat.

Species	Common Name	Federal/State Status	Critical Habitat in New York Study Area	Comments
Vitis vulpina	Winter Grape	State - Endangered	Potentially	This species could be found in the New York Study Area in the few locations where forested areas are located along the banks of large bodies of waters.
Pycnanthemum muticum	Blunt Mountain Mint	State - Threatened	No	The New York Study Area does not contain suitable habitat due to the lack of bogs, low meadows, and damp woods.
Sabatia angularis	Rose Pink	State - Endangered	Potentially	This species could occur in herbaceous, disturbed openings in the New York Study Area.
Lespedeza stuevei	Stuve's Bush Clover	State - Threatened	Potentially	This species could occur in herbaceous, disturbed openings in the New York Study Area.

Additionally, many of these species (particularly avian species) could occur within the New York Study Area as transient individuals for foraging opportunities or during migrations.

4.4 Habitat Suitability for Migratory and Resident Wildlife Species

As previously described, the New York Study Areas is characterized by significant development and disturbed vegetation habitats because most of the Study Area encompasses roadways and developed/disturbed sites. Most habitats within the New York Study Area or directly adjacent serve as edge habitat between larger contiguous habitat and the developed/disturbed nature of most of the New York Study Area. While these habitats have the potential to provide critical habitat for federal- and/or state-listed threatened and endangered species, these habitats provide nesting, cover, foraging and other life cycle stages for species adapted to human development and disturbance.

Migratory bird species identified in Section 2.1 could occur within the New York Study Area during their spring and autumn migration and use the forested and tidal wetland areas within the New York Study Area. Species using habitats within the New York Study Area would be temporary and for short durations. Migratory bird species could also occur as transient individuals; however, this area exhibits a distinct lack of natural vegetation to support most wildlife species, including migrating bird species.

Resident wildlife species occur through the New York Study Area in developed and natural areas. These species are well adapted to use of disturbed and natural habitats and transition between these areas as needed.

5.0 CONCLUSIONS

EDR conducted a vernal pool survey and habitat suitability assessment in June 2022, July 2022, October 2022, and August 2023. Due to ongoing Project developments, EDR also conducted a desktop analysis for habitat suitability to account for additional areas potentially occupied by Project components. The habitat suitability assessment identified 10 habitat types in the New York Study Area, with the most abundant habitat type being developed/disturbed (72%) due to the location of the Study Area within roadways and the suburban and urban landscape of Staten Island and Long Island. The remainder of the habitat types are considered marginal because of the edge effect being within or adjacent to existing linear development (e.g., highways, railroads, and utility transmission lines) and other commercial, residential, and industrial development. These habitats have been disturbed from previous development and is subject to ongoing disturbance in the form of high-traffic use of roads, and railroads. No vernal pools were identified or are mapped within the New York Study Area.

Although no federally designated critical habitat exists in the New York Study Area, it is possible for critical habitat to occur. Habitat mapped in the New York Study Area could provide habitat to federal and state-listed species, however it should be noted that much of the habitat mapped is surrounded by developed areas with frequent and ongoing anthropogenic effects. Therefore, while the habitat may be present, such disturbances may deter many listed species. Wildlife species that were observed and are expected to occur in the New York Study Area include transient individuals flying overhead and included species such as the herring gull (*Larus argentatus*), laughing gull (Leucophaeus atricilla), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*) and other common avian species adapted to developed/disturbed habitat types. Discussions with the USFWS and NYSDEC will continue to occur in order to determine the need for any avoidance/mitigation measures.

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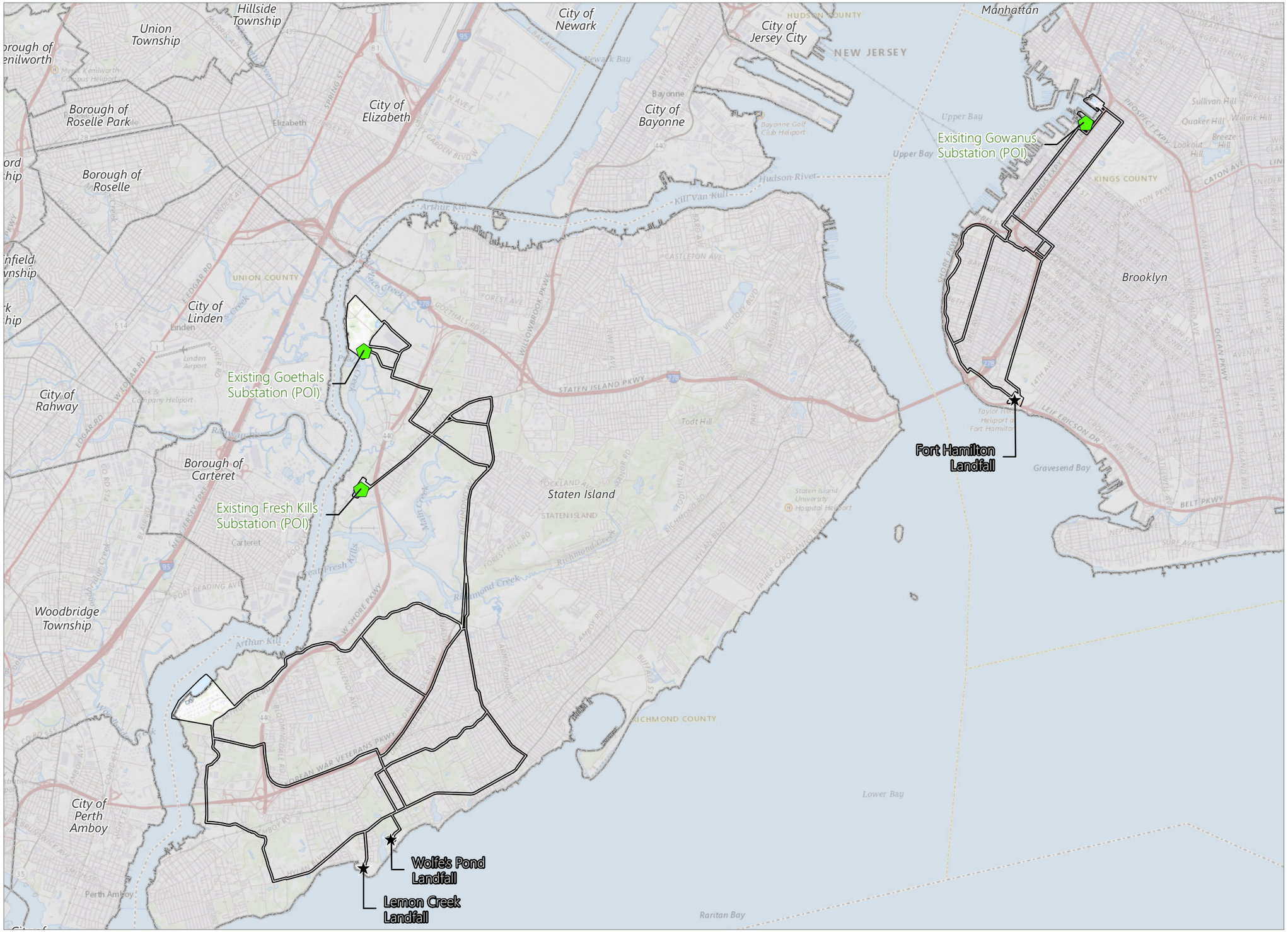
Appendix A

Figures

Figure 1: Project Location Map

Figure 1. Project Location



Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

Boroughs of Brooklyn, Staten Island
Kings and Richmond Counties,
New York

Habitat Suitability Assessment Report

★ Landfall Location

⬟ Point of Interconnection

▭ Study Area

▭ Municipal Boundary

0 0.5 1 2

Miles

Prepared August 29, 2023
Basemap: Esri ArcGIS Online "USGS Topo" map service.

ATLANTIC SHORES offshore wind

EDR

Figure 2: Habitat Project Mapping

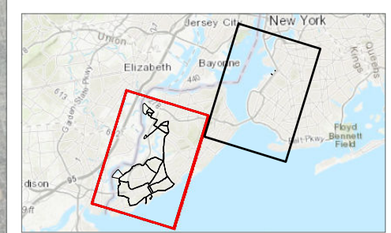
Figure 2. Habitat Project Mapping

Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

Boroughs of Brooklyn, Staten Island
Kings and Richmond Counties,
New York

Habitat Suitability Assessment Report

- Significant Coastal Habitat
- Significant Natural Community
- Landfall Location
- Point of Interconnection
- Study Area



0 1,000 2,000 4,000
Feet

Prepared August 29, 2023
Basemap: Esri ArcGIS Online "World Imagery" map service.
No significant coastal communities.

ATLANTIC SHORES offshore wind

EDR

Figure 2. Habitat Project Mapping

Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

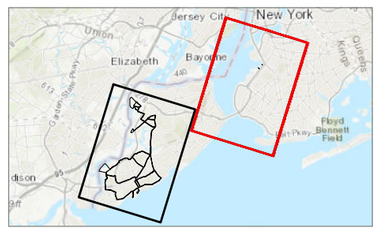
Boroughs of Brooklyn, Staten Island
Kings and Richmond Counties,
New York

Habitat Suitability Assessment Report

★ Landfall Location

⬟ Point of Interconnection

▭ Study Area



0 1,000 2,000 4,000

Feet

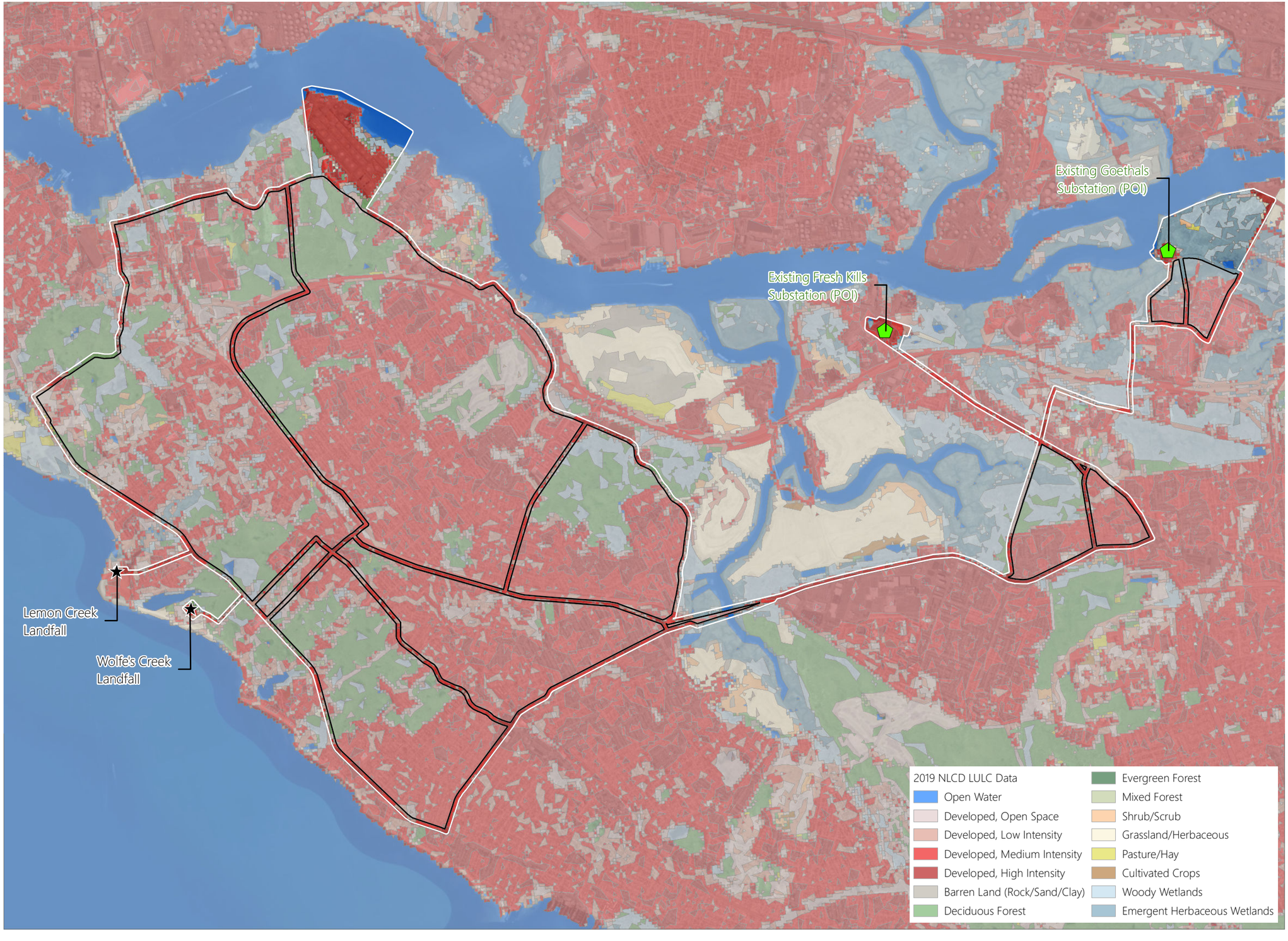
Prepared August 29, 2023
Basemap: Esri ArcGIS Online "World Imagery" map service.
No significant coastal communities.

ATLANTIC SHORES offshore wind

EDR

Figure 3: Land Use/Land Cover

Figure 3. Land Use/Land Cover



Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

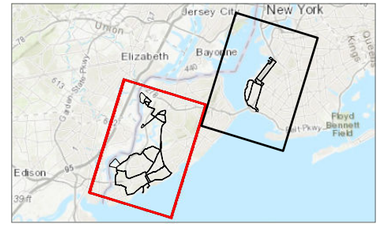
Boroughs of Brooklyn, Staten Island
Kings and Richmond Counties,
New York

Habitat Suitability Assessment Report

★ Landfall Location

⬟ Potential Point of Interconnection

▭ Study Area



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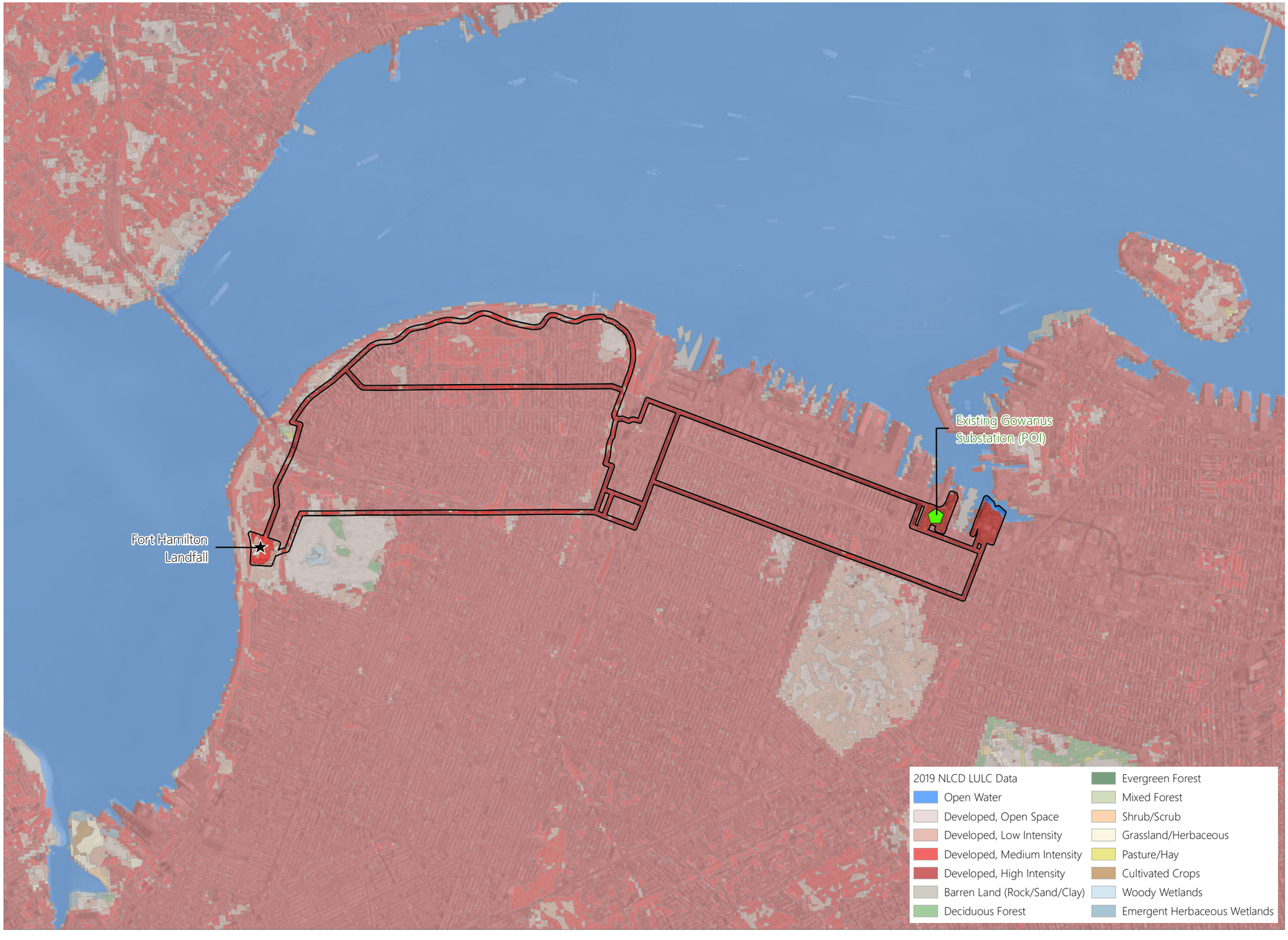
Prepared August 30, 2023

Basemap: Esri ArcGIS Online "World Imagery" map service.

ATLANTIC SHORES offshore wind

EDR

Figure 3. Land Use/Land Cover

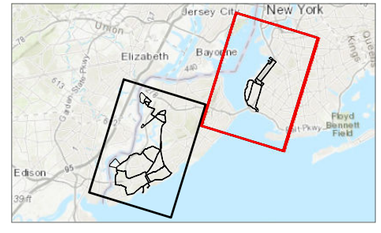


Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

Boroughs of Brooklyn, Staten Island
Kings and Richmond Counties,
New York

Habitat Suitability Assessment Report

★ Landfall Location
⬟ Potential Point of Interconnection
▭ Study Area



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Prepared August 30, 2023
Basemap: Esri ArcGIS Online "World Imagery" map service.

ATLANTIC SHORES offshore wind

EDR

Appendix B

USFWS IPaC and NYNHP Consultation Results

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Long Island Ecological Services Field Office
340 Smith Road
Shirley, NY 11967-2258
Phone: (631) 286-0485 Fax: (631) 286-4003

In Reply Refer To:
Project Code: 2023-0009620
Project Name: Atlantic Shores - NY

October 27, 2022

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

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:

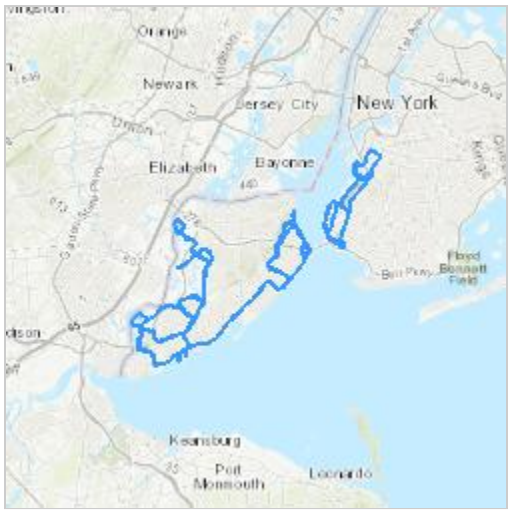
Long Island Ecological Services Field Office
340 Smith Road
Shirley, NY 11967-2258
(631) 286-0485

Project Summary

Project Code: 2023-0009620
Project Name: Atlantic Shores - NY
Project Type: Power Gen - Wind - Offshore
Project Description: Transmission system with interconnection cable route and substation options in New York

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.5719643,-74.08721303773191,14z



Counties: Kings and Richmond counties, New York

Endangered Species Act Species

There is a total of 5 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 Fisheries[1], 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.

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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.

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern *Sterna dougallii dougallii* Population: Northeast U.S. nesting population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Seabeach Amaranth *Amaranthus pumilus*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8549

Critical habitats

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

IPaC User Contact Information

Agency: EDR
Name: Caitlin Pfeil
Address: 217 Montgomery Street
City: Syracuse
State: NY
Zip: 13202
Email cpfeil@edrdpc.com
Phone: 5857464704

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

April 26, 2022

Scott McBurney
EDR Renewables, Inc.

Re: Atlantic Shores Offshore Wind Habitat Suitability Study
County: Kings, Richmond Town/City: City Of New York

Dear Scott McBurney:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the project study area or in its vicinity.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Division of Environmental Permits.

Sincerely,

Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program

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The following state-listed animals have been documented in the vicinity of the Atlantic Shores Offshore Wind Project Study Area.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed.

For information about any permit considerations for the project, contact the NYSDEC Division of Environmental Permits.

The following species has been documented nesting about .25 mile from the proposed Mt. Loretto Landfall Site and connected cable route.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*
Bald Eagle *Breeding*	*Haliaeetus leucocephalus*	Threatened	

Proposed interconnection cable routes will follow NYS Route 440 and Arthur Kill Road adjacent to the west and east sides of Clay Pit Ponds State Park Preserve, where the following species have been documented near the roads.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*
Eastern Mud Turtle	*Kinosternon subrubrum*	Endangered	
Fence Lizard	*Sceloporus undulatus*	Threatened	

The proposed Goethals point of interconnection, and the proposed interconnection cables leading to it along River Road, Edward Curry Avenue, and NYS Route 440 are adjacent to the wetlands along Pralls and Sawmill Creeks, where the following species have been documented.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*
Least Bittern *Breeding*	*Ixobrychus exilis*	Threatened	
Pied-billed Grebe *Breeding*	*Podilymbus podiceps*	Threatened	
Bald Eagle *Breeding*	*Haliaeetus leucocephalus*	Threatened	

The following species has been documented nesting on the Outerbridge Crossing and on the Verrazano-Narrows Bridge within .5 mile of proposed interconnection cables and of the proposed Brooklyn South Landfall Site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*
Peregrine Falcon *Breeding*	*Falco peregrinus*	Endangered	

This report only includes records from the NY Natural Heritage database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

The following rare plants, rare animals, and significant natural communities have been documented in the Atlantic Shores Offshore Wind Project Study Area or its vicinity.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental review conducted as part of the planning and approval process. Field surveys of the study area may be necessary to determine the presence of a species in the study area, particularly for sites that may contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The plants in this report are listed as Endangered, Threatened, or Rare by New York State, and are a vulnerable natural resource of conservation concern. Plants near the study area may also occur on the study area in suitable habitat

The animals in this report, while not listed by New York State as Endangered or Threatened, are rare in New York and are of conservation concern.

The natural communities in this report are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is either an example of a community type that is rare in the state, or a high-quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Mount Loretto State Unique Area

The following plants have been documented at the proposed Mt. Loretto Landfall Site or in the proposed interconnection cable route leading to it, or within .25 mile of them in the Mount Loretto State Unique Area.

Winter Grape	*Vitis vulpina*	Endangered	Critically Imperiled in NYS

2019-06-14: Directly on the route of the proposed interconnection cable in the State Unique area, on trees along the east side of the road (Kenny Road) just north of a vernal pond, GPS 40.5069, -74.2180.

Dune Sandspur	*Cenchrus tribuloides*	Threatened	Imperiled in NYS

2021-09-25: The plants are growing on a sand beach, including at the proposed Mt. Loretto Landfall Site.

Swamp Marsh Pennywort	*Hydrocotyle ranunculoides*	Endangered	Critically imperiled in NYS

2019-06-14: East end of Mt. Loretto Pond about 140 yards west of proposed interconnection cable route and about 70 yards south of Hylan Boulevard; also at west end of pond, about 70 yards south of where cable route turns north from Hylan Blvd.

Tall Dune Panic Grass	*Panicum amarum* var. *amarum*	Rare	Vulnerable in NYS

2021-09-25: Upper edge of the sand beach, about 160 yards east of proposed interconnection cable route.

Pesimmon	*Diospyros virginiana*	Threatened	Imperiled in NYS

2019-06-14: Oak forest, about 325 yards west of proposed interconnection cable route.

Great Plains Flat Sedge	*Cyperus lupulinus* ssp. *lupulinus*	Threatened	Critically Imperiled in NYS

2015-09-02: In beach sand about .25 mile east of proposed interconnection cable route.

Virginia Hedge Hyssop	*Gratiola virginiana*	Endangered	Critically Imperiled in NYS
Minute Duckweed	*Lemna perpusilla*	Threatened	Imperiled in NYS

2018/2019: Vernal pool at edge of bluff, about .25 mile east of proposed cable route and 225 yards south of Hylan Blvd.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATUS

North Mount Loretto State Forest

Between Amboy Road and Hylan Boulevard the proposed interconnection cable route runs through the following significant natural community in North Mount Loretto State Forest south of Amboy Road.

Coastal Oak-Beech Forest — High Quality Occurrence of Uncommon Community Type

This is a small forest with moderate disturbance and areas of maturing to mature forest. Low percentage of exotic species.

Primrose-leaved Violet *Viola primulifolia* var. *primufolia* Threatened Imperiled in NYS

2019-09-15: North Mount Loretto State Forest, about 200 yards east of proposed interconnection cable route. Wet sandy loam in swamp forest, along trail.

Korean War Veterans Parkway roadside, Huguenot

The following plant has been documented adjacent alongside the Korean War Veterans Parkway (NYS Route 909C), a proposed interconnection cable route, at the intersection with Huguenot Avenue and to the west.

Rose Pink *Sabatia angularis* Endangered Critically Imperiled in NYS

2020-08-06: The plants were in openings in dense shrubs above the mowed areas on the south side of Korean War Veterans Parkway at the underpass under Huguenot Avenue, and about 140 yards to the west on the north side of the highway at light pole #R813.

NYS Route 440 roadside, Rossville

The following plant has been documented adjacent to NYS Route 440, a proposed interconnection cable route, about 125 yards west of Arthur Kill Road in Rossville.

Blunt Mountain Mint *Pycnanthemum muticum* Threatened Imperiled in NYS

2008-07-17: Near the top of the slope in a shrub area adjacent to the south side of NYS Route 440 (West Side Expressway), between the expressway and an access road, in herbaceous and shrubby vegetation growing on the fill material that was probably filled over a wetland during the construction of the expressway.

The following plants have been documented along the proposed interconnection cable route on the east side of NYS Route 440, opposite Clay Pit Ponds State Park Preserve.

Rose Pink *Sabatia angularis* Endangered Critically Imperiled in NYS

On east side of NYS Route 440, west of Bloomingdale Road and south of Wirt Avenue, 2003-08-21: The plants are in dry oak woods bulldozed many years ago for development, in a small weedy buffer between condos and highway.

Stuve's Bush Clover *Lespedeza stuevei* Threatened Imperiled in NYS

On east side of NYS Route 440, west of Turner Street, 1985-08-29: On east-facing slope to drainage ditch, grassy with some landscaping plants.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Clay Pit Ponds State Park Preserve

Proposed interconnection cable routes will follow NYS Route 440 and Arthur Kill Road adjacent to the east and west sides, respectively, of Clay Pit Ponds State Park Preserve. The following species and communities have been documented in the State Park Preserve along or near these roads.

Red Maple-Sweetgum Swamp — High Quality Occurrence of Rare Community Type

Clay Pit Ponds, including on both sides of both NYS Route 440 and Arthur Kill Road: A forested swamp of moderate size with good diversity, but with several exotic species and altered hydrology due to development pressures. The community is partially buffered by adjoining natural communities of a small state park preserve, but is located within a heavily developed landscape.

Post Oak-Blackjack Oak Barrens — Rare Community Type, and Globally Rare

Clay Pit Ponds, including on both sides of both NYS Route 440 and Arthur Kill Road: This is a small oak-dominated barrens of small size with moderate diversity, with few exotic species. The core of the community is buffered by the surrounding natural area. Peripheral patches have recovery potential if buffers can be maintained around them, but heavy deer browse and impacts from trail use are a concern. Most of the community is located in a small state park surrounded by a densely developed landscape.

Torrey's Thoroughwort	*Eupatorium torreyanum*	Threatened	Imperiled in NYS

Multiple locations, including east side of Arthur Kill Road just north of Claypit Road; between NYS Route 440 and Veterans Road West north of the Englewood Avenue overpass; and west side of NYS Route 440/Veterans Highway West north of the State Park boundary, 2008-08-21: An open, dry oak woods with a high percentage of open, unvegetated sand.

Willow Oak	*Quercus phellos*	Endangered	Critically Imperiled in NYS

Along and between NYS Route 440 and Veterans Road West, opposite Sharrotts Pond south of Sharrots Road, 2008-08-20: The trees are growing along a major roadway in a wooded corridor that is bordered by maintained lawn.

Sedge Rush	*Juncus scirpoides* var. *scirpoides*	Endangered	Critically Imperiled in NYS
Short-leaved Pine	*Pinus echinata*	Endangered	Critically Imperiled in NYS
Virginia Pine	*Pinus virginiana*	Endangered	Critically Imperiled in NYS
Whorled Mountain Mint	*Pycnanthemum verticillatum* var. *verticillatum*	Endangered	Critically Imperiled in NYS

Above four species: Along west side of NYS Route 440, at and north of State Park boundary, 2008-08: Sandy openings within a post oak-blackjack oak barrens community.

Slender Spike Grass	*Chasmanthium laxum*	Endangered	Critically Imperiled in NYS

About 150 yards west of NYS Route 440, at north boundary of State Park, 2021-09-26.

Southern Wild Raisin	*Viburnum nudum* var. *nudum*	Endangered	Critically Imperiled in NYS
Low St. John's Wort	*Hypericum stragulum*	Endangered	Critically Imperiled in NYS

Above four species, within .1 mile east of Arthur Kill Road near Claypit Road, 2008-08-21: The plants are growing in a wet, sandy opening in the forest.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATUS

Magnolia Swamp, Bloomfield

At and near the intersection of Edward Curry Avenue and South Avenue, the proposed interconnection cable route runs through the southern portion of a site called Magnolia Swamp.

Sweetbay Magnolia	*Magnolia virginiana* var. *virginiana*	Endangered	Critically Imperiled in NYS

2018-06-19: Trees are northwest and southwest of the corner of South Avenue and Edward Curry Avenue (up to #1000 South Avenue). Sweetgum swamp with sweetgum, red maple, red oak, tupelo and swamp white oak as dominants. Also present are grey and black birch. The understory is predominantly *Vaccinium corymbosum* with *Smilax glauca*. Skunk cabbage and trout lily are in the herbaceous layer.

Red Maple-Sweetgum Swamp			High Quality Occurrence of Rare Community Type

Magnolia Swamp: This is a moderate size, mature example with minimally disturbed core and <1% cover of exotic plants. Vulnerable in an urban setting with little connectivity to natural landscape.

Rose Pink	*Sabatia angularis*	Endangered	Critically Imperiled in NYS

Field on north side of Edward Curry Avenue between Glen Street and NYS Route 440. 2003: Southwest portion of field, just north of Edward Curry Avenue. Successional old field developing into successional shrublands. Soil somewhat sandy and well-drained. 2020: North end of field just east of NYS Route 440, in mowed area right next to woodland.

Bloomfield Wetlands

The following species has been documented in wetlands, pools and ditches in the vicinity of the proposed interconnection cable route along River Road and of the proposed Goethals Point of Interconnection; and in wetlands south of Neck Creek west of the proposed cable route along NYS Route 440.

Atlantic Coast Leopard Frog	*Lithobates kauffeldi*	Unlisted	Critically Imperiled in NYS

2008: Shallow (1-2.5 ft deep), open wetlands with nearly no canopy.

Sawmill Creek Wetlands

The following species have been documented in the wetland and adjacent woods along Sawmill Creek, southwest of the intersection of the proposed interconnection cable routes along Edward Curry Road and NYS Route 440.

Persimmon	*Diospyros virginiana*	Threatened	Imperiled in NYS

Woods along Sawmill Creek and along Chelsea Road, some patches about .15 mile west of NYS Route 440 and another about .15 mile south of Edward Curry Avenue, 2019-06-13: Red maple swamp with pin oak and red maple. Sandy hummocks and depressions with water in the woods. The herbaceous layer consists of mayflower, cinnamon fern, and marsh fern.

Seaside Dragonlet	*Erythrodiplax berenice*	Unlisted	Imperiled in NYS

Sawmill Creek State Tidal Wetlands, about .25 mile east of NYS Route 440 and about .25 mile south of Edward Curry Avenue, 2008-06-17: Salt marsh.

Richmond Avenue Bridge

The proposed interconnection cable route follows along Richmond Avenue; the following species has been documented nesting at the Richmond Avenue bridge over Richmond Creek, at the western end of LaTourette Park.

Barn Owl	*Tyto alba*	Protected Bird	Critically Imperiled in NYS
	Breeding		

2001: Nest found under the bridge.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Wolfes Pond Park

The proposed interconnection cable route along Hylan Boulevard will cross Wolfes Pond Park, and the route along Seguine Avenue and the Lemon Creek Landfall Site are near the park. The following species have been documented in the Park near these project components.

Powdery Carrion Flower	*Smilax pulverulenta*	Endangered	Critically Imperiled in NYS

Within .1 mile south of Hyland Boulevard, 2022: Mature hardwood woods with red maple, tulip tree, and sweetgum, and a dense to moderately dense herbaceous layer.

Minute Duckweed	*Lemna perpusilla*	Threatened	Imperiled in NYS
Swamp Marsh Pennywort	*Hydrocotyle ranunculoides*	Endangered	Critically Imperiled in NYS

Above two plants: Wolfes Pond, within .2 mi south of Hylan Boulevard, 2021-09-25: The plants are growing in shallow standing water. At the northern end of Wolfe's Pond the duckweed covers the entire surface.

Dune Sandspur	*Cenchrus tribuloides*	Threatened	Imperiled in NYS

Beach at Wolfes Pond Park, extending to within .2 mile of Seguine Avenue and the Lemon Creek Landfall Site, 2021-09-25: The plants are growing on the upper edge of the sand beach, in some areas in a small linear band and in other areas in a flat expansive upper section of beach.

South Beach

The following rare plants and animals have been documented near the proposed South Beach Landfall Site and the proposed interconnection cable route along Father Capodanna Boulevard in South Beach.

Globe Flat Sedge	*Cyperus echinatus*	Endangered	Critically Imperiled in NYS

Large open grassland starting .1 mile northwest of Father Capodanna Boulevard and extending to Mason Avenue, bounded by Quintard Street on the northeast; southeast corner is about .2 mile from proposed South Beach Landfall Site, 2020-08-26: Large open grassland with very sandy soil.

Seaside Dragonlet	*Erythrodiplax berenice*	Unlisted	

This rare dragonfly was found in the open grassland described above, 2008-06-23.

Martha's Pennant	*Celithemis martha*	Unlisted	Imperiled in NYS
Rambur's Forktail	*Ischnura ramburii*	Unlisted	Imperiled in NYS
Needham's Skimmer	*Libellula needhami*	Unlisted	Vulnerable in NYS

Above three rare dragonflies: Pond and marsh about .15 mile northwest of Father Capodanna Boulevard along Wentworth Avenue, and about .2 mile northwest of proposed South Beach Landfall Site, 2007/2009: Pond and marsh with cattails or reeds, sedges/grasses, and shrubs.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*

Bloomingdale Park

The following significant community and rare plant occur in Bloomingdale Park, both about .1 mile north of the proposed interconnection cable route along Korean Veterans Highway.

Red Maple-Sweetgum Swamp — Rare Community Type

Bloomingdale Swamp: Three small patches in a heavily disturbed site in an urban landscape. If left undisturbed and undeveloped, natural regeneration may increase the size of this occurrence. Canopy structure and composition good, diversity in lower strata relatively poor.

Sweetbay Magnolia *Magnolia virginiana* var. *virginiana* — Endangered — Critically Imperiled in NYS

Bloomingdale Park, just east of Maguire Avenue, 2019-04-27.

Mill Creek, Richmond Valley

The following plant occurs along Mill Creek just north of the Staten Island Railroad track and within .1 mile north of the proposed interconnection cable route along Richmond Valley Road.

Willow Oak *Quercus phellos* — Endangered — Critically Imperiled in NYS

1995-03-22: Floodplain forest and woods along slopes to the creek.

Amboy Road

The following rare plant occurs within 225 yards east of the proposed interconnection cable route along Amboy Road, and about 125 yards southwest of the intersection of Sharrot Avenue and Bedell Street.

Virginia Pine *Pinus virginiana* — Endangered — Critically Imperiled in NYS

2006-09-12: Woods north of Resurrection Cemetery.

Johnson Street

The following rare bird occurs along Johnson Street, less than .1 mile northwest of the proposed interconnection cable route along Arthur Kill Road.

Chuck-will's-widow *Antrostomus carolinensis* — Protected Bird — Critically Imperiled in NYS
Breeding

2003-06-16: The birds were heard in a mixed woodlot on Johnson Street adjacent to several private residences.

Grymes Hill

Grymes Hill is a hill west of the proposed interconnection cable route along Targee Street and northwest of ithe intersection of Targee Street and Broad Street.

Green Milkweed *Asclepias viridiflora* — Threatened — Imperiled in NYS

Within .1 mile west of Targee Street and within .1 mile northwest of the intersection of Targee Street and Broad Street, 2016-07-20: Bluestem-dominated grasslands.

Serpentine Barrens — Rare Community Type, and Globally Rare

Grymes Hill Serpentine, .2 mile northwest of the intersection of Targee Street and Broad Street: The community is in good condition with natural erosion processes intact, but very small and in a highly urbanized landscape.

This report only includes records from the New York Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

Figure 1. USGS Project Location Map

Atlantic Shores Offshore Wind – New York Study Area

Boroughs of Brooklyn, Staten Island
Kings and Richmond Counties,
New York

Habitat Suitability Assessment Report

- Landfall Location
- Point of Interconnection
- In-Water Interconnection Cable Route
- Study Area

0 0.5 1 2
Miles

Prepared March 9, 2022
Basemap: Esri ArcGIS Online "USGS Topo" map service.

ATLANTIC SHORES offshore wind

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Appendix C

Photograph Documentation

Photo 1. Disturbed/Developed Habitat Surrounded by Herbaceous Habitat Along River Road.

Photo 2. Herbaceous Wetland Habitat Located Along Father Capodanno Boulevard.

Photo 3. Open Water Habitat Surrounded by Disturbed/Developed Habitat Located Along River Road.

Appendix D

Habitat Assessment Mapping

Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

Boroughs of Brooklyn, Staten Island
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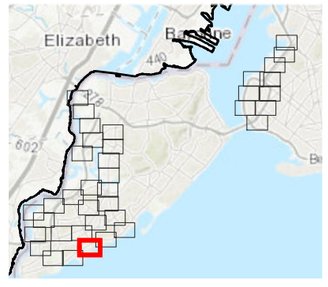
Habitat Suitability Assessment Report

- Study Area

Habitat Assessment

- Developed/Disturbed
- Forest - Deciduous
- Forest - Mixed
- Forested Wetland
- Herbaceous
- Herbaceous Wetland
- Open Water Wetland
- Scrub-Shrub Wetland
- Water



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Prepared August 30, 2023
Basemap: NYSDOP "2022" orthoimagery map service.

ATLANTIC SHORES offshore wind

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Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

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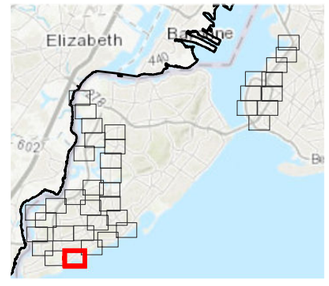

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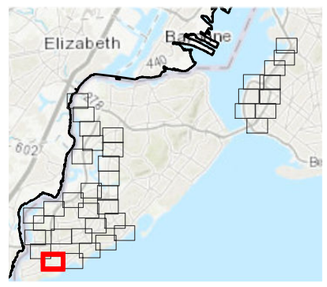

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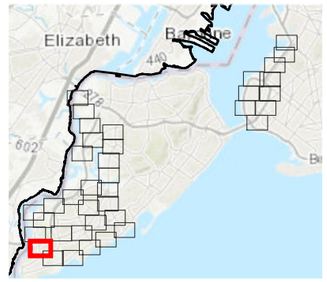

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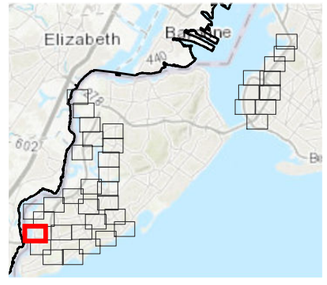

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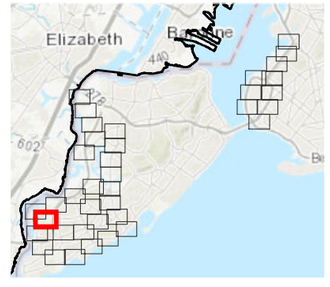

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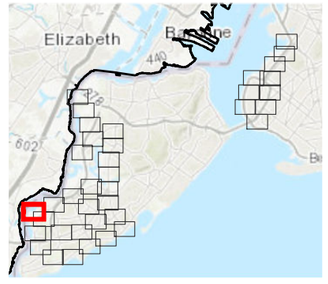

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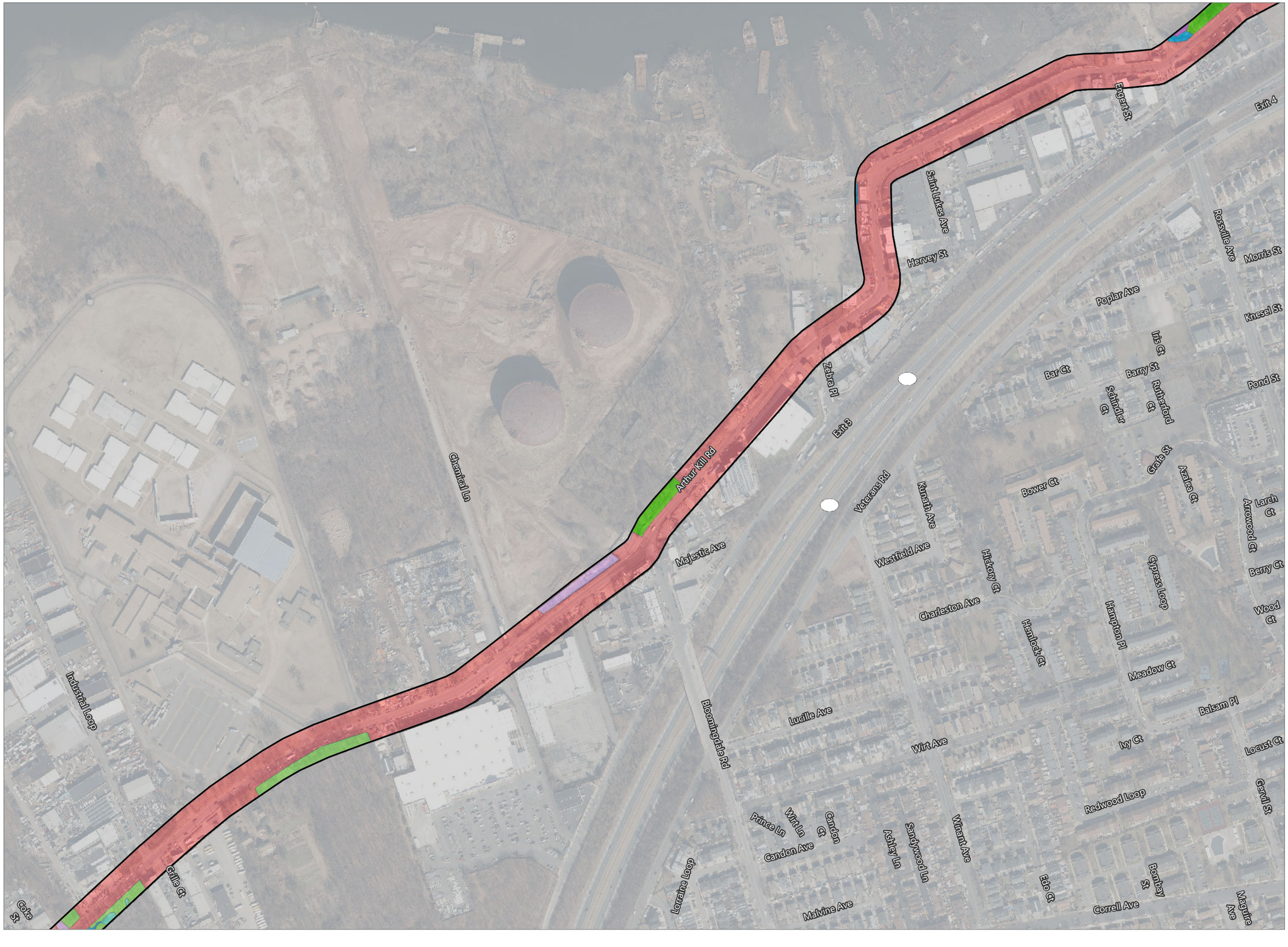

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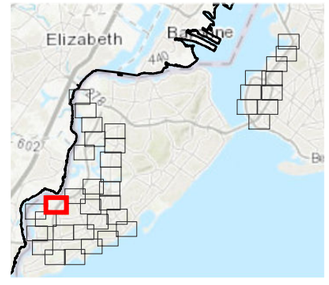

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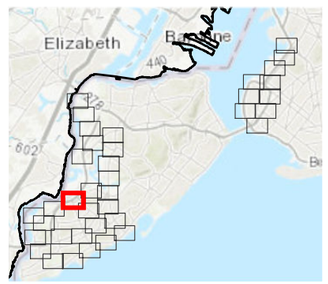

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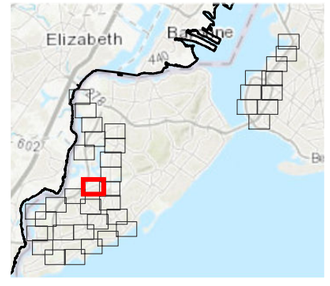

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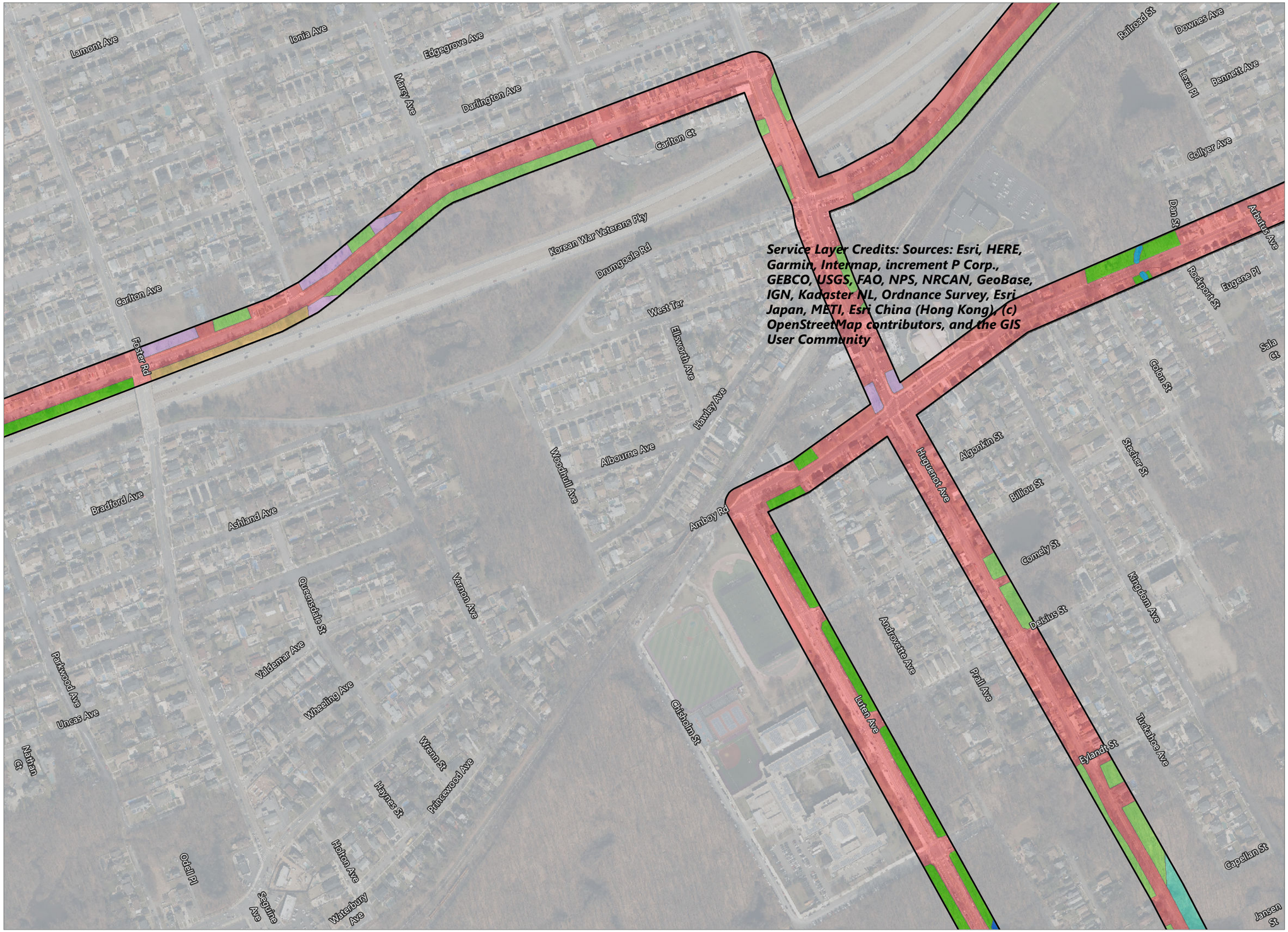

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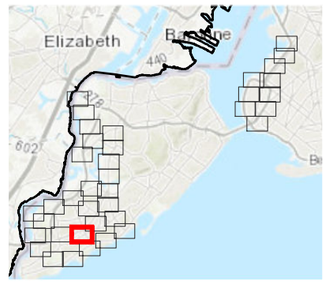

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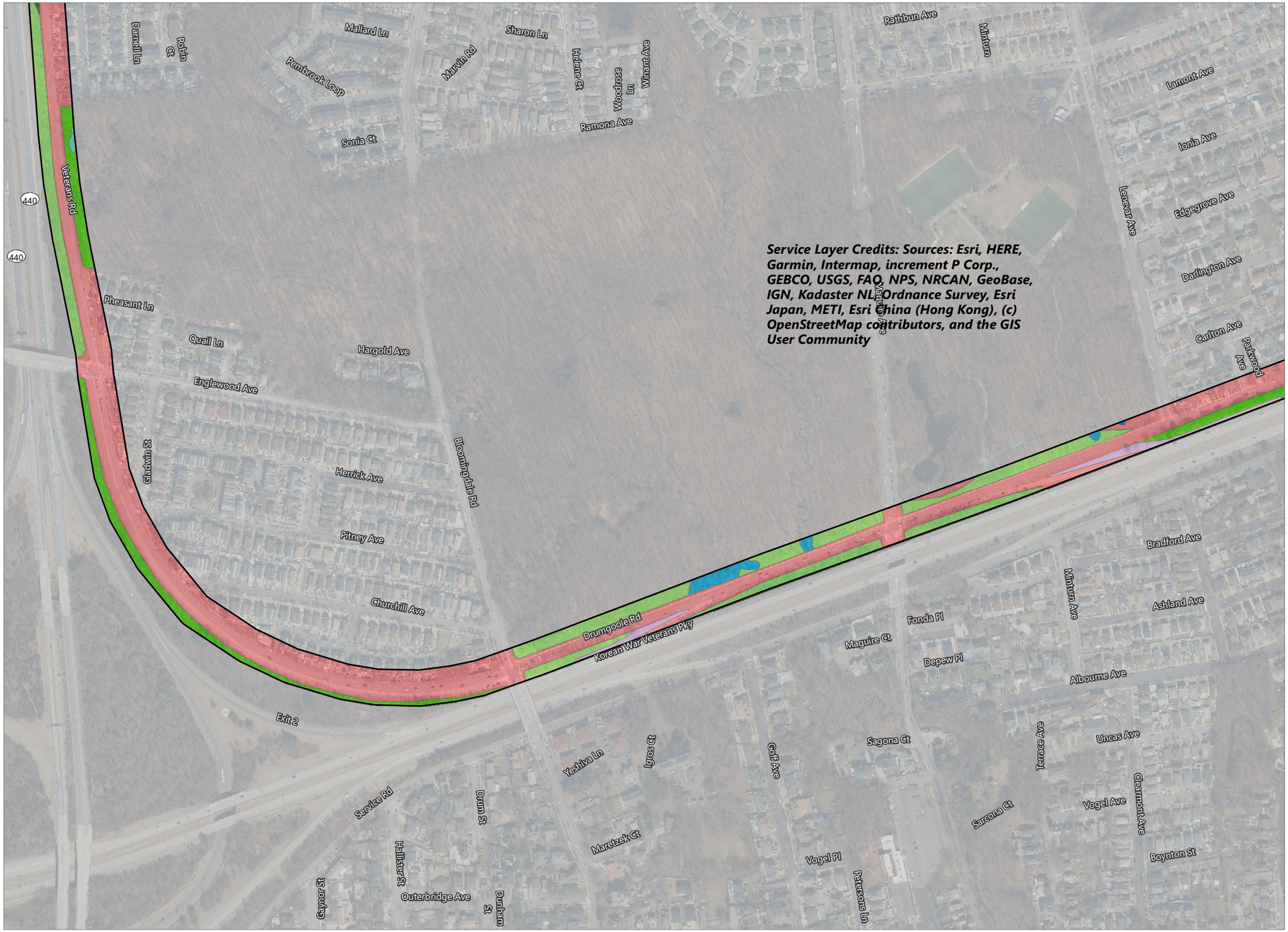

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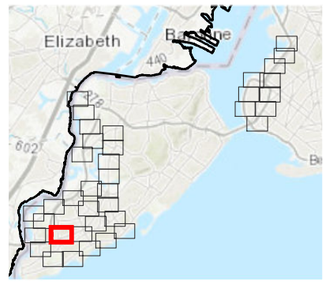

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Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

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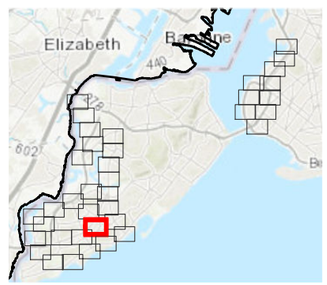

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ATLANTIC SHORES offshore wind

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Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

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Habitat Suitability Assessment Report

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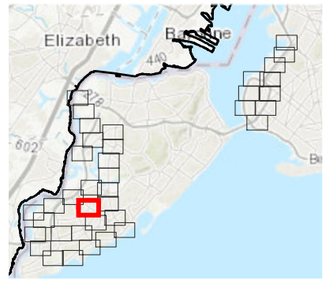

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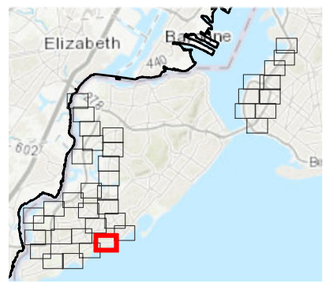

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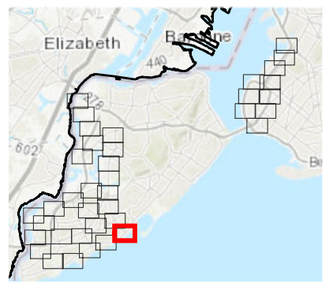
Habitat Suitability Assessment Report

Study Area
Habitat Assessment
Developed/Disturbed
Forest - Mixed



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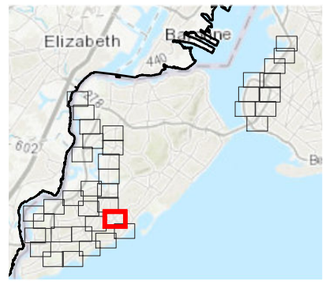

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Study Area
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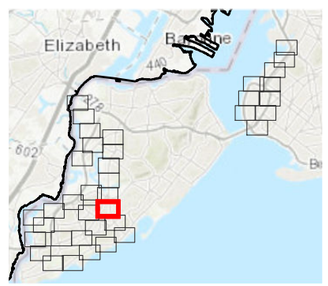
Forest - Mixed
Herbaceous



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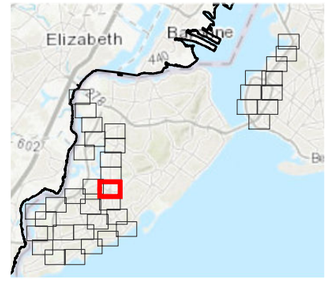

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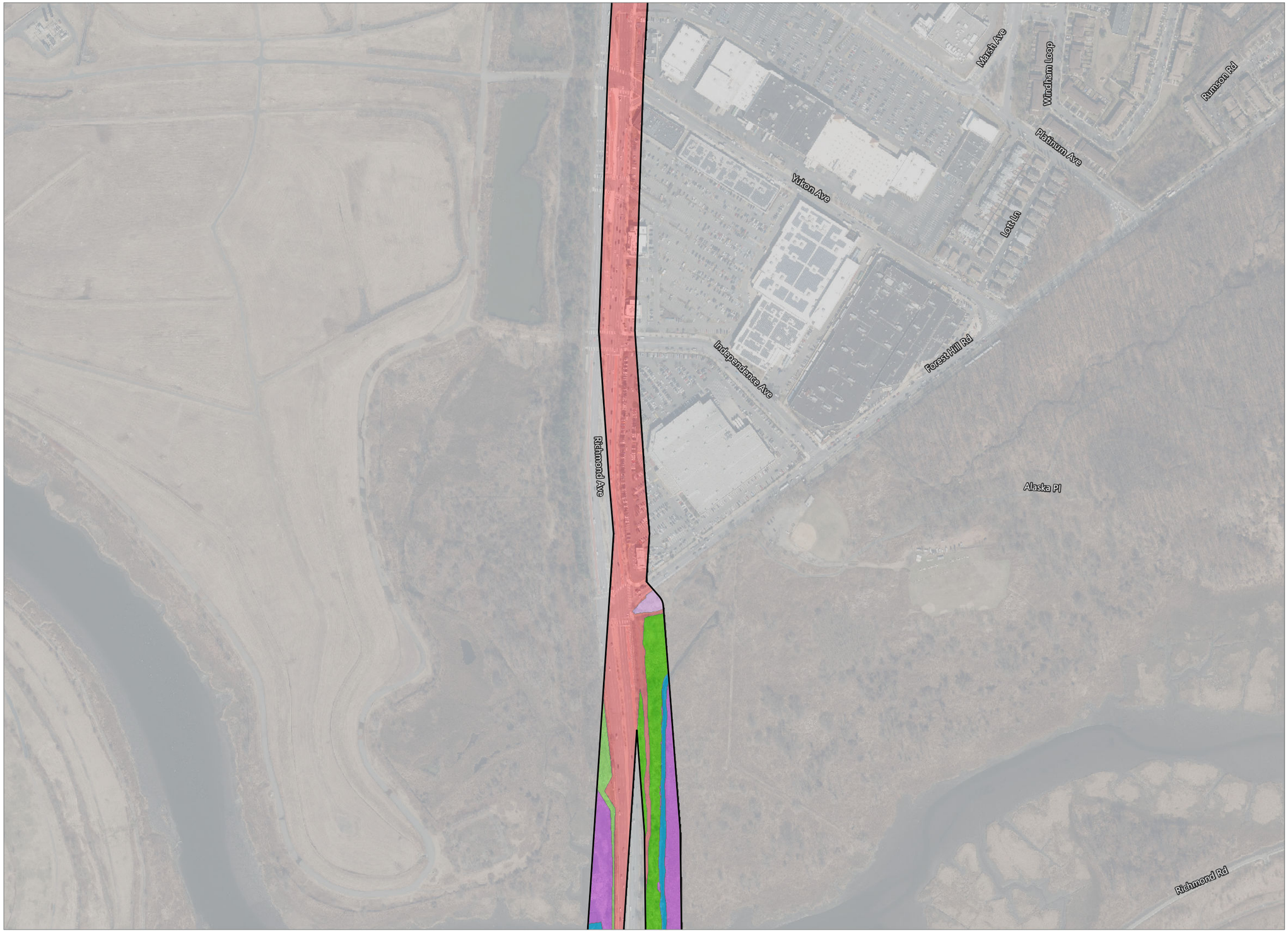

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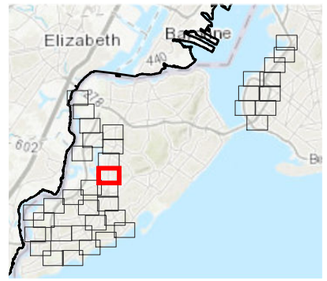

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Study Area
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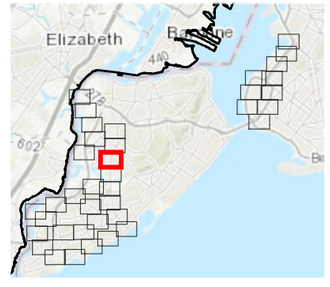

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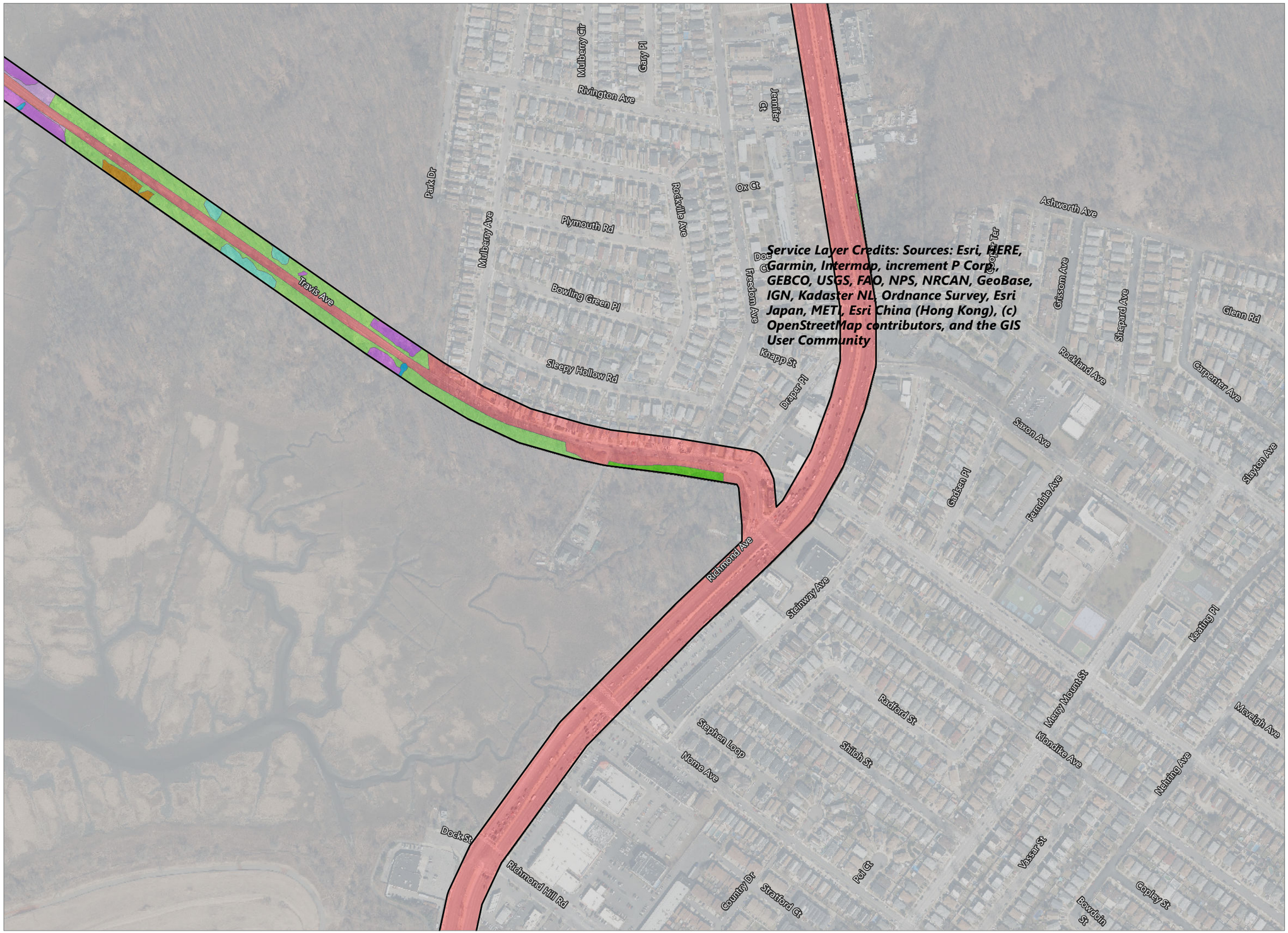

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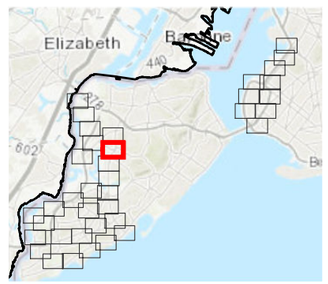

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Study Area
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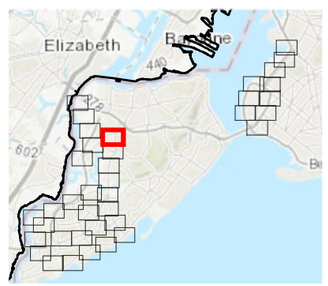
Developed/Disturbed
Forest - Deciduous



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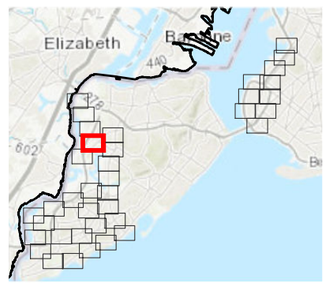
- Forest - Mixed
- Forested Wetland
- Herbaceous
- Herbaceous Wetland
- Open Water Wetland
- Water



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Prepared August 30, 2023
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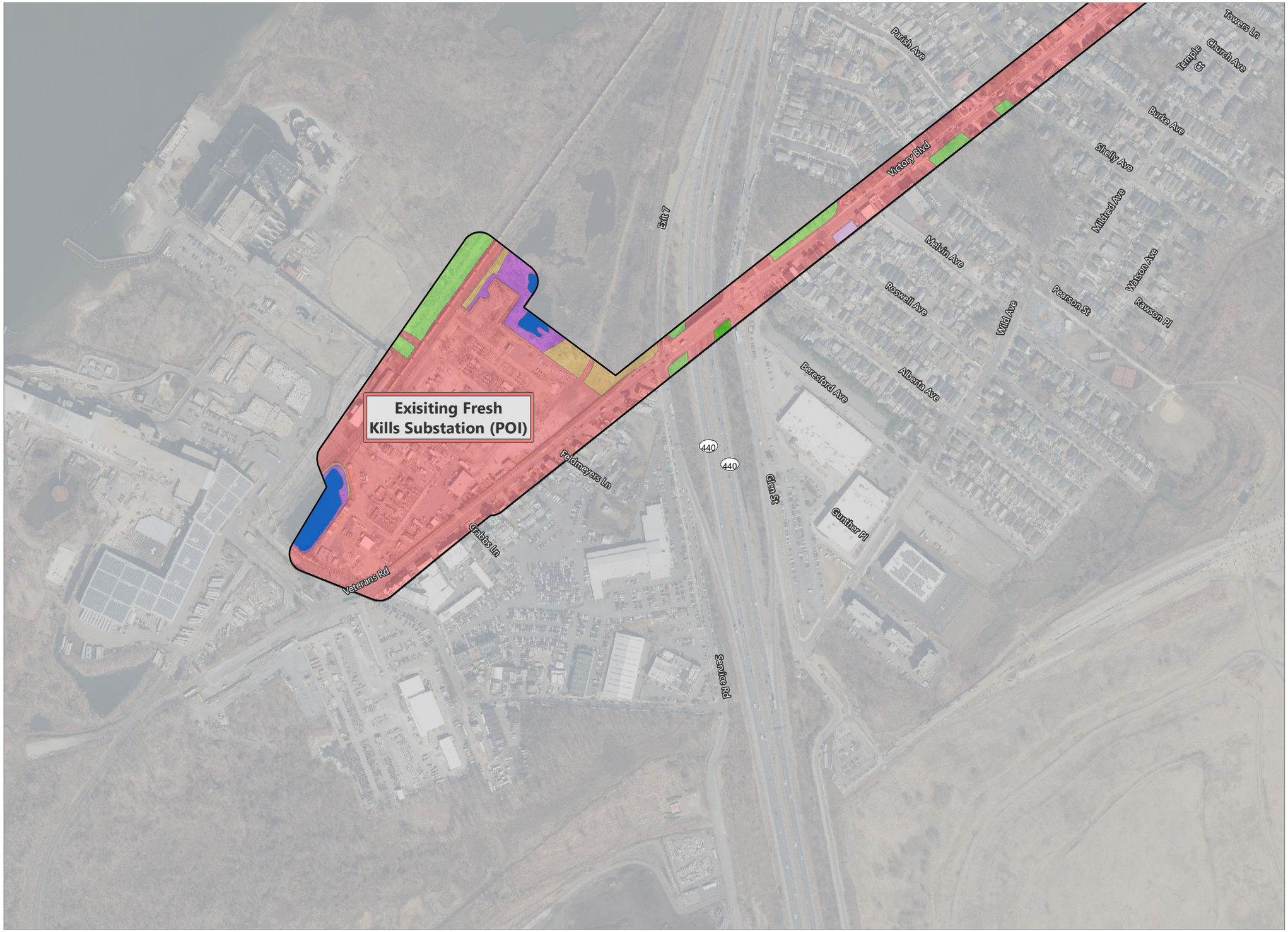
ATLANTIC SHORES offshore wind

EDR



Atlantic Shores North Offshore Wind – New York Onshore Project Study Area

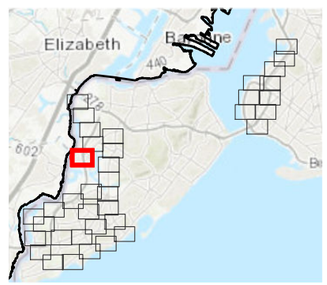
Boroughs of Brooklyn, Staten Island
Kings and Richmond Counties,
New York

Habitat Suitability Assessment Report

Study Area

Habitat Assessment

- Developed/Disturbed
- Forest - Deciduous
- Forest - Mixed
- Herbaceous
- Herbaceous Wetland
- Open Water Wetland
- Scrub-Shrub



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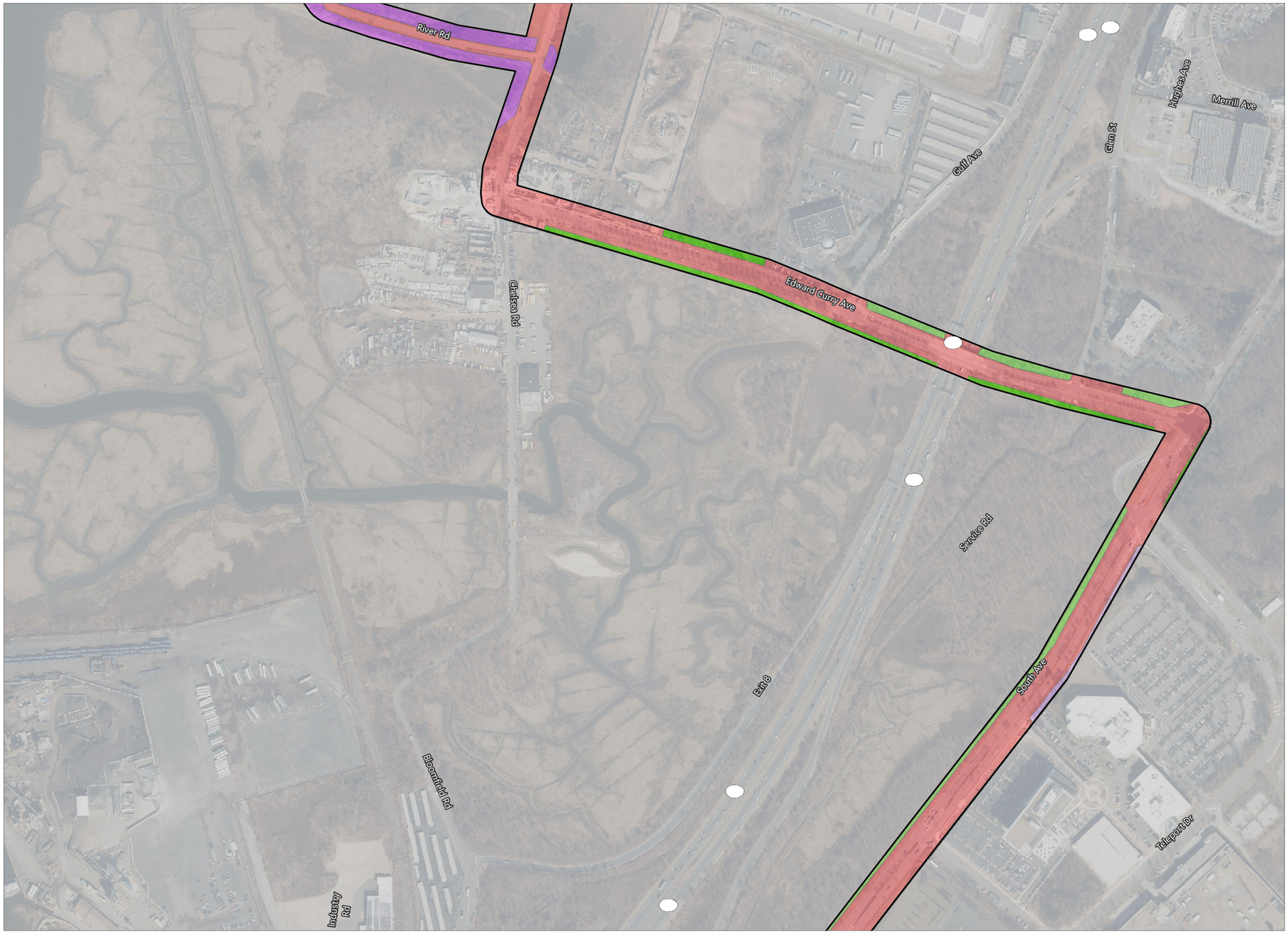

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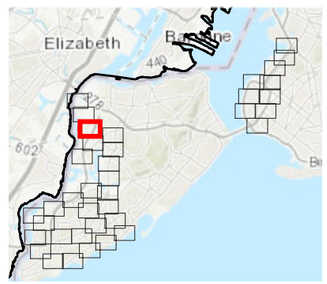
Habitat Suitability Assessment Report

Study Area
Habitat Assessment
Developed/Disturbed
Forest - Deciduous
Forest - Mixed
Herbaceous
Herbaceous Wetland
Open Water Wetland



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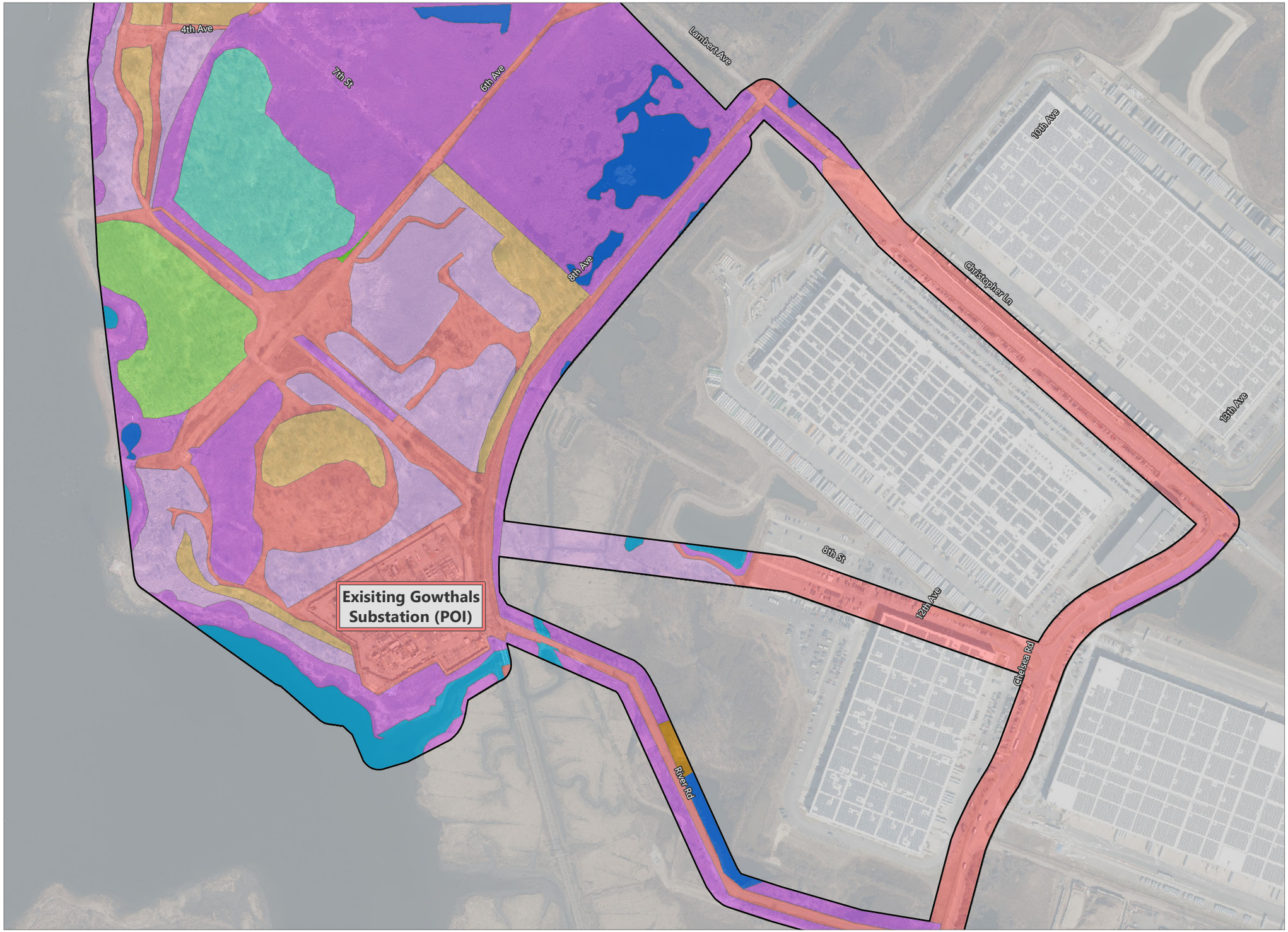

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- Scrub-Shrub Wetland
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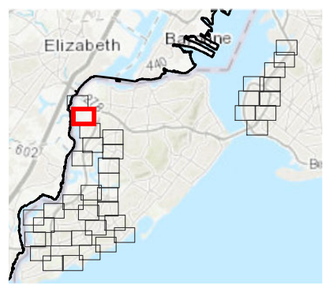

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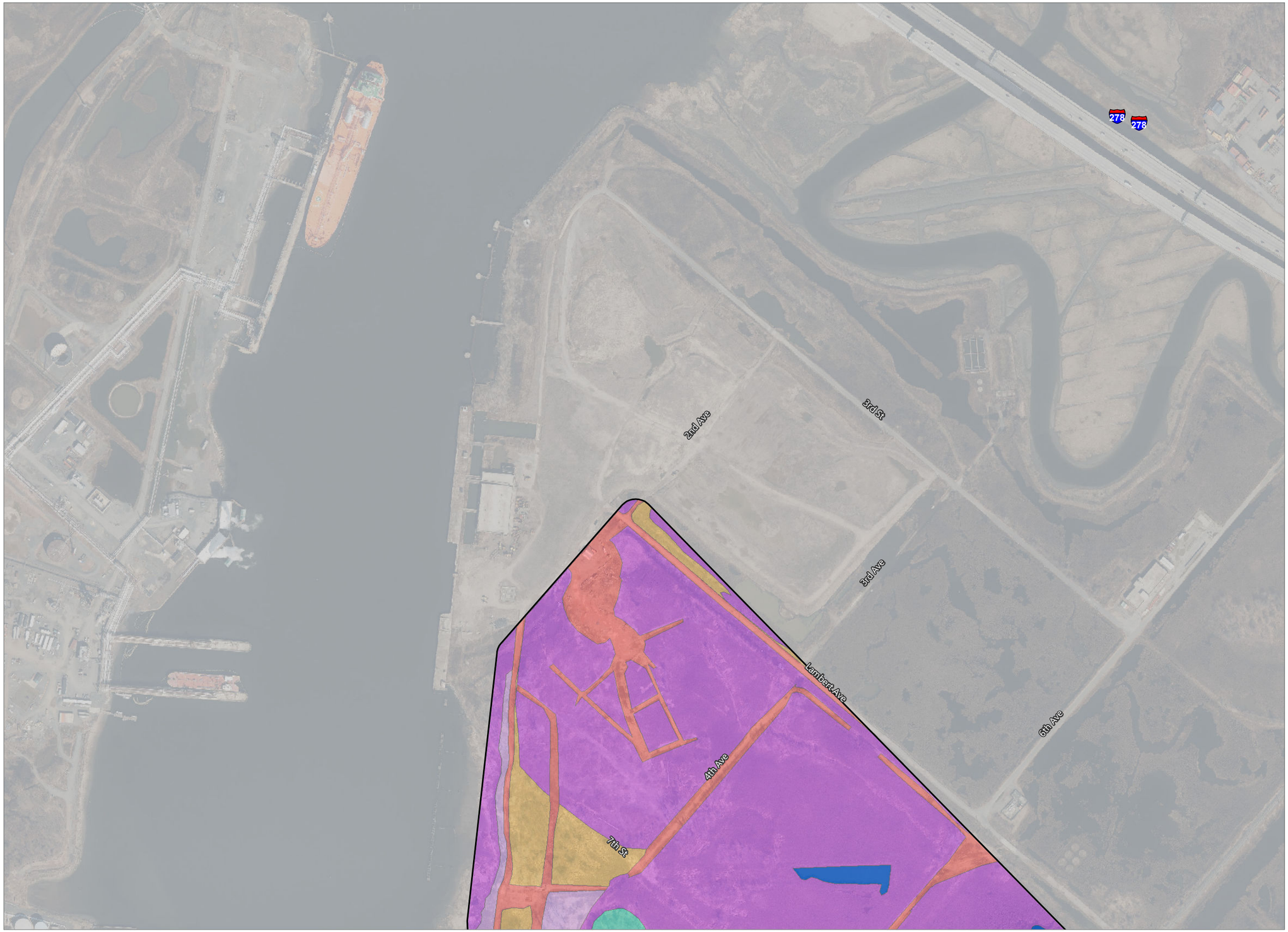

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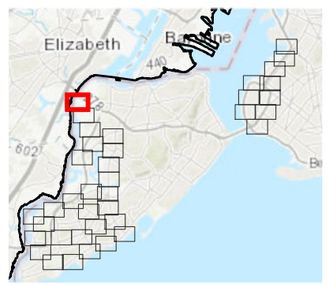

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Habitat Assessment
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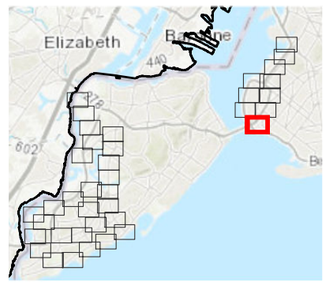
Forest - Deciduous
Herbaceous
Scrub-Shrub



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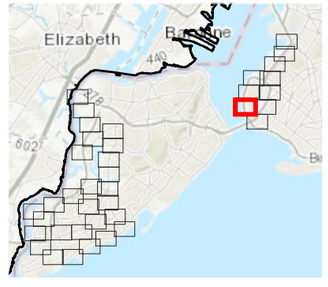

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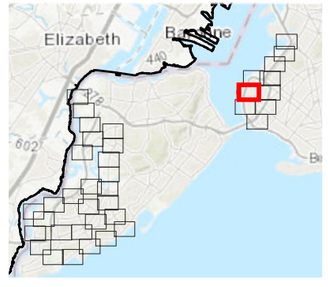

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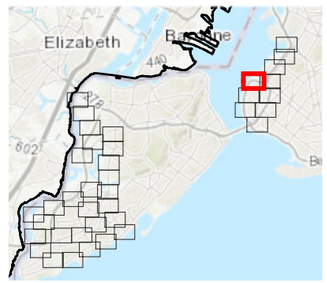
- Developed/Disturbed
- Forest - Deciduous



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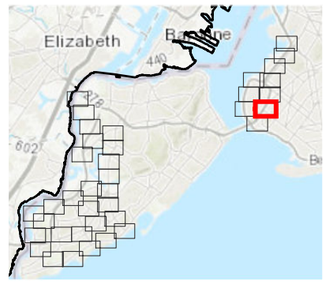
Habitat Assessment
Developed/Disturbed
Forest - Deciduous
Herbaceous



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Habitat Assessment
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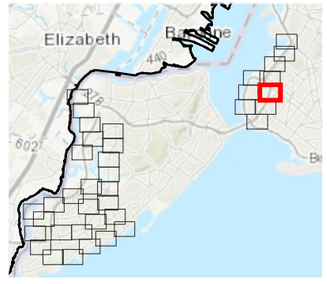
Forest - Mixed



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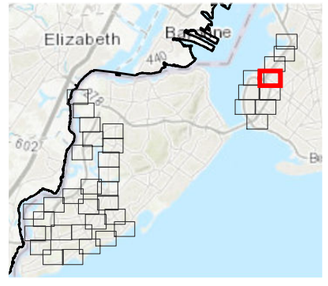

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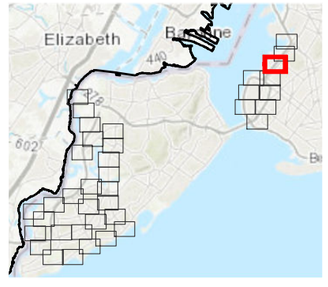

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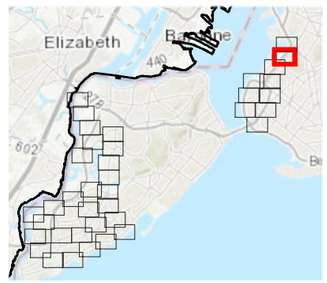
Water



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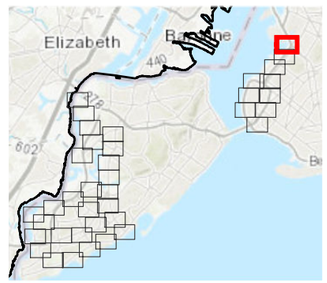
Water



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