Draft Integrated Interim Response Feasibility Report and Environmental Assessment for Actionable Elements

NEW YORK-NEW JERSEY HARBOR AND TRIBUTARIES COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

SUBAPPENDIX A-1A OAKWOOD BEACH ACTIONABLE ELEMENT SITE ENDANGERED SPECIES ACT - USFWS

July 2025

Table of Contents

1 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), New York District (District), has prepared this assessment to evaluate Federally-listed threatened and endangered species for the New York New Jersey Harbor and Tributaries (NYNJHAT) Coastal Storm Risk Management (CSRM) Feasibility Study, Integrated Interim Response Feasibility Report and Environmental Assessment on Actionable Elements.

The NYNJHAT Study was authorized as a result of the findings in the January 2015, USACE North Atlantic Coast Comprehensive Study (NACCS) which identified high-risk areas on the Atlantic Coast for warranting further investigation of flood and coastal storm risk management solutions including the NYNJHAT study. In February 2019, a NYNJHAT Feasibility Study Interim Report (Interim Report) was completed to document existing information and assumptions about the future, and to identify knowledge gaps that warranted further investigation because of their potential to affect plan selection. The Interim Report states the impacts from Hurricane Sandy highlighted the National need for a comprehensive and collaborative evaluation to managing risk for vulnerable populations within the North Atlantic region. In September 2022, a Draft Integrated Feasibility Report and Tier 1 (Programmatic) Environmental Impact Statement for the Comprehensive Plan was released detailing the additional analyses conducted following the Interim Report (2019) and what additional information was needed in the future for the remainder of Tier 1 and Tier 2 of the programmatic process.

The Endangered Species Act (ESA) of 1973 was passed to protect and recover imperiled species and the ecosystems upon which they depend. The ESA is administered by the USFWS and the National Marine Fisheries Service (NMFS). Under the ESA, species may be listed as either endangered or threatened, whereby species are either in danger of extinction through all, or a significant portion, of its range (endangered) or are species that are likely to become endangered within the foreseeable future (threatened). The ESA prohibits the “take” of protected species, including harassment, hunting, capturing, collecting, or killing.

Consultation with USFWS is required for any Federal action that may adversely affect ESA species. An adverse effect includes direct or indirect physical, chemical, or biological alternations to waters or substrate, species and their habitat, other ecosystem components, and quality and quantity of habitat. Consultation requires coordination between the Action Agency and the regulating agency with jurisdiction.

This document focuses on the Oakwood Beach Actionable Element Site, comprised of a CSRM-focused Nature Based Solution (NBS) wetland enhancement and dune restoration, as a feature of the NYNJHAT Study Comprehensive Plan. This document further serves as a mechanism for coordination.

1.1 PROJECT PURPOSE AND NEED

Storms have historically severely impacted the New York New Jersey Harbor region, including Hurricane Sandy most recently, causing loss of life and extensive economic damages.

In 2012, Hurricane Sandy caused considerable loss of life, extensive damage to property, and massive disruption to the North Atlantic Coast. The effects of this storm were particularly severe because of its tremendous size and the timing of its landfall during high tide. Twenty-six states were impacted by Hurricane Sandy, and disaster declarations were issued in 13 states. NY and NJ were the most severely impacted states, with the greatest damage and most fatalities in the NY Metropolitan Area. For example, a storm surge of 12.65 feet above normal high tide was reported at Kings Point on the western end of Long Island Sound and 9.4 feet at the Battery on the southern tip of Manhattan. Flood depths due to the storm tide were as much as nine feet in Manhattan, Staten Island, and other low-lying areas within the NY Metropolitan Area. The storm exposed vulnerabilities associated with inadequate coastal storm risk management (CSRM) measures and lack of defense to critical transportation and energy infrastructure.

The January 2015, USACE North Atlantic Coast Comprehensive Study (NACCS) identified high-risk areas on the Atlantic Coast for warranting further investigation of flood risk management solutions. In February 2019, a NYNJHAT Feasibility Study Interim Report was completed to document existing information and assumptions

about the future conditions, and to identify knowledge gaps that warranted further investigation because of their potential to affect plan selection. The Interim Report states the impacts from Hurricane Sandy highlighted the national need for a comprehensive and collaborative evaluation to manage risk to vulnerable populations within the North Atlantic region. To address the impacts and concerns associated with devastating storms, the USACE New York District has proposed measures to manage coastal storm risk in the NYNJ Harbor and its tributaries.

In response, the USACE New York District is investigating measures to manage future flood and coastal storm risk in ways that support the long-term resilience and sustainability of the coastal ecosystem and surrounding communities, and reduce the economic costs and risks associated with flood and storm events for the NYNJHAT Study Area (USACE 2019). The alternative concepts proposed would help the region manage flood risk that is expected to be exacerbated by relative sea level rise.

The scope of the draft Interim Response Actionable Element Environmental Analyses (EA) builds upon the September 2022 Draft Integrated Feasibility Report (FR) and Tier 1 (Programmatic) Environmental Impact Statement (EIS), as an interim action while the overall Comprehensive Plan continues to be studied, subject to future funding and appropriations. The Comprehensive Plan is a programmatic assessment described as containing two tiers, with September 2022 Draft Report initiating the Tier 1, or broad-level assessment, with plans for a future Tier 2 containing the detailed site-specific analyses including any design refinements and reasonable alternatives. This Draft Report is not a Tier 2, but rather an Interim Response to the Comprehensive Plan responsive to the larger Coastal Storm Risk Management (CSRM) authorization to assess a 2,500+ square mile radius in the New York-New Jersey Metropolitan Area. This interim response, like Tier 2, assesses the measures at a site-specific level, completing enough design maturity and analyses to disclose the potential effects of the Alternatives, and complete full environmental compliance. Interim responses often arise during the progress of a programmatic study, of which purpose and need is to respond to an immediate need for CSRM where able in the interim and corresponding with future legislative cycles (e.g. Water Resources Development Act (WRDA), while the more complex measures of the larger NYNJHAT Study require additional analysis, modeling, public engagement, and design maturity to complete. Interim response needs often arise during the elongated progress of a programmatic study, of which purpose is to respond to an immediate CSRM need in the interim that is corresponding with future legislative cycles (e.g. Water Resources Development Act (WRDA), while the more complex measures of the larger NYNJHAT Study require additional analysis, such as modeling, extended public engagement, and advancement of design maturity to completion. The purpose and need of this action is to manage risk to critical infrastructure and at-risk communities in areas of high susceptibility to storm surge. This Interim Response action addresses a critical need for CSRM measures in Harlem River, New York; East Riser, New Jersey; and Oakwood Beach, New York.

1.2 COORDINATION AND CONSULTATION HISTORY

Coordination with stakeholders has been a critical component of the NYNJHAT study since early 2017. The USACE New York District held many workshops and meetings with Cooperating and Participating Agencies and other stakeholders to share information on the study scope and purpose and formulation of alternatives, and to exchange ideas and information on natural and marine resources within the Study Area.

The USACE New York District announced the preparation of an Integrated Feasibility Report/Tiered EIS for the NYNJHAT study feasibility in the February 13, 2018 Federal Register pursuant to the requirements of Section 102(2)(C) of NEPA. The NEPA scoping period initially spanned 45 days from July 6 – August 20, 2018, but was extended to 120 days due to numerous requests from the public. The USACE New York District held a total of nine public scoping meetings during the public scoping period. In 2019, four New York Bight Ecological Model (NYBEM) workshops were held on January 3, March 11, June 6, and November 14 to help inform the NYBEM model set up to be used as a tool for assessing some direct and indirect effects of agency actions on regional ecosystems including the NYNJHAT Study, among others.

In February 2020, the NYNJHAT Study paused until October 2021 due to a lack of Federal funding. Following study resumption, the USACE New York District held several Cooperating Agency meetings to facilitate open communication, share study progress, status updates, and data as it became available, including an Engineering

presentation on the study alternatives, a presentation on the TSP, and a presentation on the NYBEM development progress. In September 2022, a Draft Integrated FR/Tier 1 (Programmatic) EIS was released for stakeholder, agency, and public review and comment. Following a substantial public review period of 175+ days, and approximately 2,700 comments received, many comments required a need for, among other requests, more consideration for Nature-Based Solutions to be incorporated into the Study. Ultimately, these comments informed the future of the NYNJHAT Study, and introduced the need for further coordination with public and resource agencies as the Study progresses.

Previously, in August 2022, the USACE and the USFWS initiated a scope of work for the preparation of a Fish and Wildlife Coordination Act Report (FWCAR) pursuant to the Fish and Wildlife Coordination Act 48 Stat. 401, as amended; 16 U.S.C 661 et seq., to provide information on fish and wildlife resources, including listed species under the ESA, and trust resources within the NYNJHAT Study Area. The USFWS provided a PAL letter until further information would become available to allow for the preparation of a FWCAR for the comprehensive study, or for the Tier 2 documents.

Due to the schedule timeline following Study resumption, USACE requested the USFWS advance to the preparation of a Fish and Wildlife Coordination Act Report (FWCAR) instead of a PAL for the Actionable Element Sites. The FWCAR will be coordinated with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), US Environmental Protection Agency (EPA), NYSDEC, NJDEP, and other agencies/organizations as appropriate, regarding the Interim Response Actionable Element area resources, potential project related impacts, and the measures that should be adopted to prevent the loss of or damage to fish and wildlife resources, as well as recommendations to avoid, minimize, or compensate for impacts resulting from the Alternatives, including the Action Alternative. The USACE anticipates a Draft FWCAR will be received between the Draft and Final Integrated Interim Response FR/EA, prior to January 2026, and a Final FWCAR thereafter following a review and comment period. This Subappendix, as well as the Integrated Interim Response FR/EA, will be updated with the FWCAR findings and recommendations for inclusion in the Final Integrated Interim Response FR/EA.

2 STUDY AREA

2.1 COMPREHENSIVE PLAN

The Study Area of the NYNJHAT Study includes the NY Metropolitan Area, including New York City (NYC) which is the most densely populated city in the United States, and five of the six largest cities in New Jersey by population. The shorelines of some of the NYNJHAT Study Area is characterized by low elevation areas, developed with residential and commercial infrastructure, and is subject to tidal flooding during storms. The Study Area covers more than 2,150 square miles and comprises parts of 25 counties in New Jersey and New York, including Bergen, Passaic, Morris, Essex, Hudson, Union, Somerset, Middlesex, and Monmouth Counties in New Jersey; and Rensselaer, Albany, Columbia, Greene, Dutchess, Ulster, Putnam, Orange, Westchester, Rockland, Bronx, New York, Queens, Kings, Richmond, and Nassau Counties in New York.

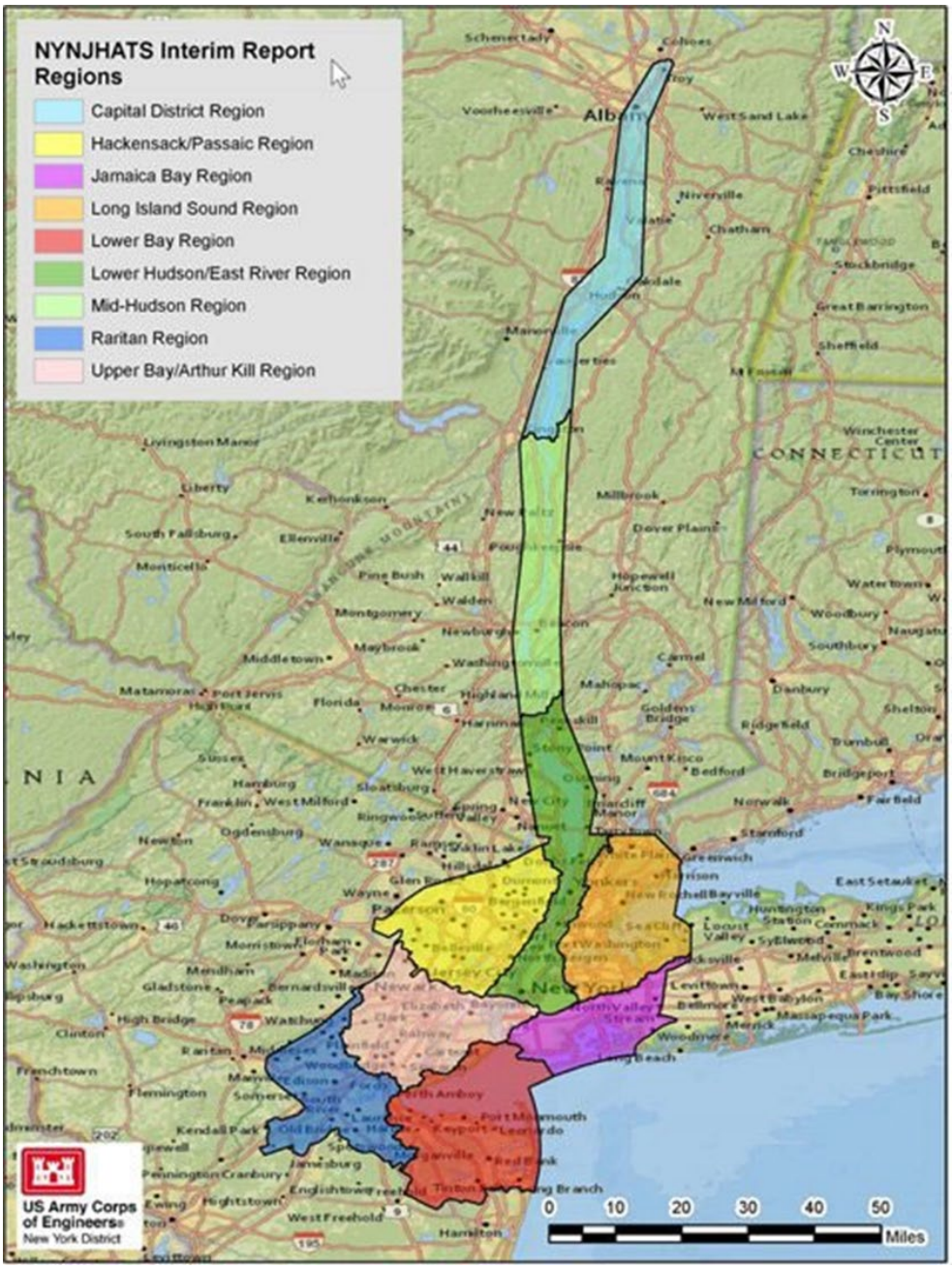

Figure 1. NYNJHAT Study Area

2.2 ACTIONABLE ELEMENT SITE – OAKWOOD BEACH

The Actionable Element Site identified within the Study Area is identified as Oakwood Beach, located in Richmond County, Staten Island, New York and a part of Great Kills Park, under the National Park Service jurisdiction Gateway National Recreation Area. This Actionable Element Site is located within the Lower Bay Planning Region of the overall Comprehensive Plan.

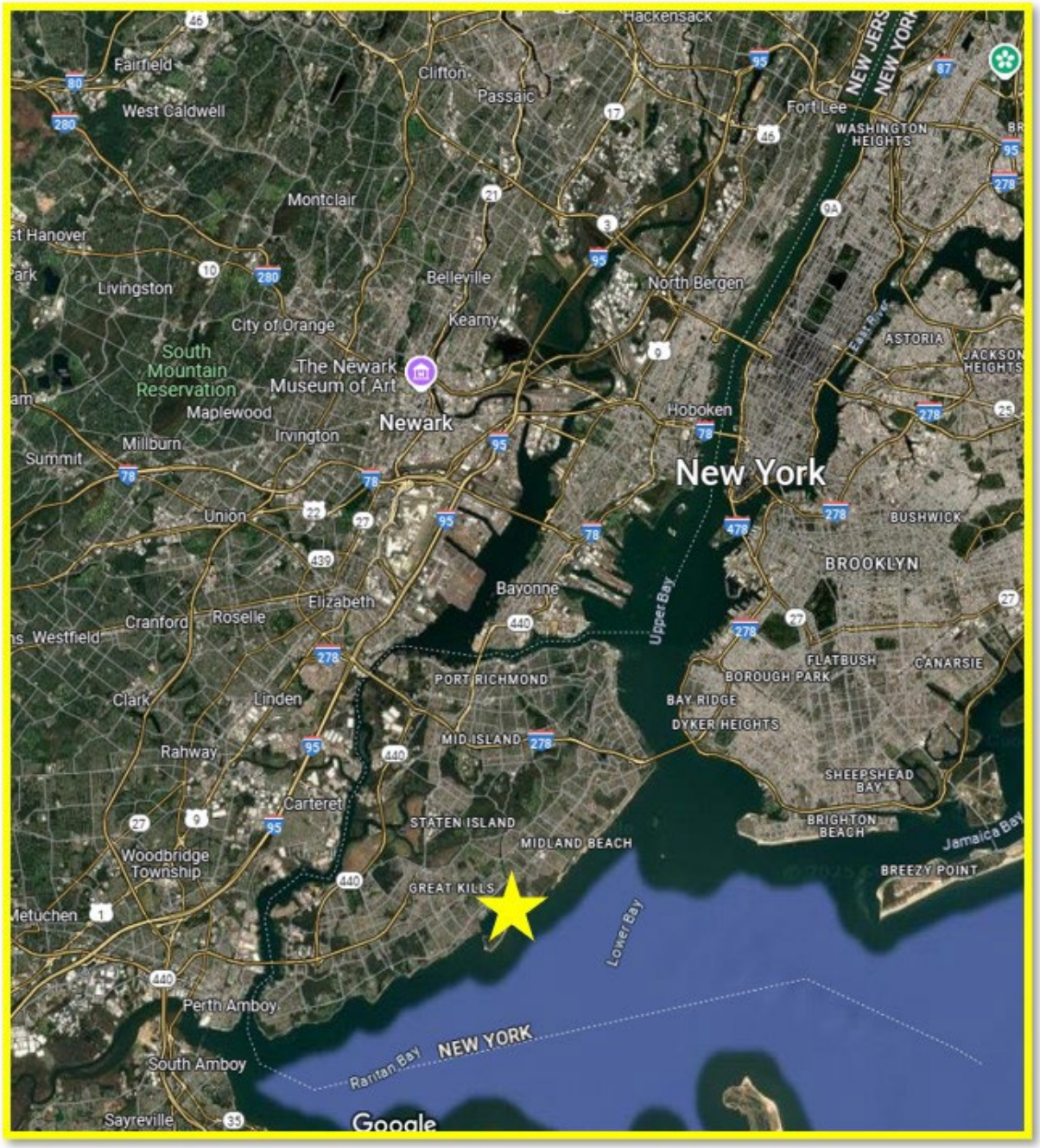

Figure 2. Oakwood Beach Actionable Element Site Location

3 OAKWOOD BEACH ACTIONABLE ELEMENT SITE

3.1 PROJECT DESCRIPTION

The Oakwood Beach Actionable Element Site is a Coastal Storm Risk Management (CSRM) nature-based feature of the NYNJHAT Study Overall Comprehensive Plan, managing high-frequency flood risk serving as a natural buffer, while also being complementary to the South Shore of Staten Island Project (presently under construction) and to Great Kills National Park. The proposed Actionable Element will also manage wildfire risk for the affected area. This CSRM-focused Nature-Based Solution (NBS) wetland enhancement includes three primary components: removal of non-native invasive plants, creation of a vegetative mosaic with native plants and tidal channels, and dune restoration, described in more detail below.

Removal of Non-Native Plants and Creation of Native Vegetative Mosaic and Tidal Channels:
The project proposes the removal of approximately 22.38-acres of non-native invasive Common Reed (*Phragmites australis*) and replacement with a vegetative mosaic of Low Salt Marsh (11.5 acres), High Salt Marsh (4.5 acres), Maritime Grassland (4.5 acres), Maritime Dune (5.5 acres), with upland buffers of Maritime Shrubland (3 acres) and Maritime Woodland (1 acre). Native plants will be established, with a particular focus on *Spartina alterniflora*, *Spartina patens* (salt meadow cordgrass), and *Distichlis spicata* (salt grass) for the created low and high marsh habitats. Any existing native plants that are salvageable will be salvaged and transplanted in the appropriate habitat. A network of tidal channels and/or pools with three main branches will be created within the vegetative mosaic supporting the created habitat, referred to as the North Channel, Middle Channel, and South Channel, totaling approximately 1.30-acres.

Dune Restoration:
Along the shoreline, seaward, and south of the created vegetative mosaic and adjacent to the mudflats and Lower Bay, a dune restoration feature is proposed for shoreline stabilization integral to maintaining the essential function of the restored wetland. The dune will consist of approximately 5.5 acres of clean sand with an elevation range up to 10-feet above mean sea level.

Additional Plan Features:
Riprap will be placed at several locations at the site to support erosion control and channel protection, including an approximate 1,115 cubic yards (CY) area to the east of the restored dune at the southeastern border adjacent to the Lower Bay between the existing riprap and main tidal channel (where a deteriorated wooden seawall is currently), 55-CY along the southwestern banks of the main tidal channel where existing riprap has eroded, 600-CY on the southeastern bank of the main tidal channel convergence with an eastern branching tidal channel where existing riprap is placed, and 700-CY at the inlets of the created tidal channels (along with coir fiber mats).

A maintained trail will be developed on the westernmost edge of the site through the proposed maritime meadow, connecting an existing adjacent concrete bike/walking path to the parking lot for Great Kills Park to be utilized for O&M and public access.

Two osprey nest platforms are proposed in the created maritime shrublands located within central the tidal channel network.

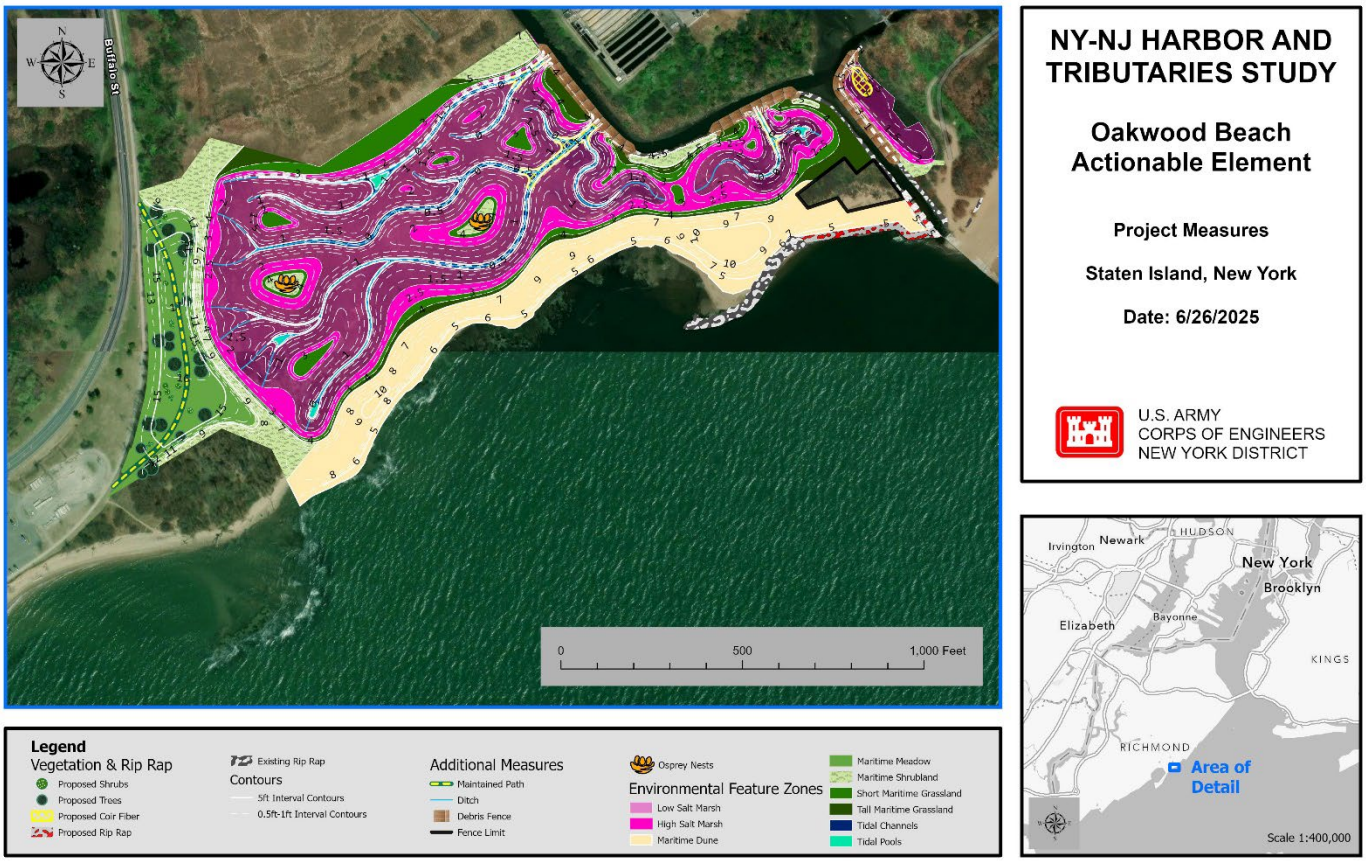

Figure 3. Oakwood Beach Actionable Element Site Project Figure

3.2 ACTIONABLE ELEMENT PROJECT OBJECTIVES

The primary objectives of this Actionable Element Site are to manage coastal storm risk to communities by restoring and enhancing natural coastal habitats that attenuate wave energy, and are complimentary to the overall NYNJHAT Comprehensive Plan, which will simultaneously provide ecological value through the removal of invasive species, and increasing habitat diversity for natural resilience that is highly desired by the non-federal sponsors and partners, public, and stakeholders throughout the larger NYNJHAT Study Area to incorporate nature-based solutions (NBS).

As excerpted from the New York City Department of Environmental Protections Habitat Restoration Plan:

This restoration will maximize the replacement of the disturbed habitat with salt marsh naturally excluding Phragmites australis (common reed) – the invasive species responsible for the wildfires -- by bringing tidal flow into the interior of the project site area through a network of proposed channels via the existing tidal channel connected to the Lower New York Bay.

Currently, the site contains dense stands of common reed (Phragmites australis) which outcompete native vegetation that provides forage, cover, and other types of habitat for local and migrating wildlife species. To accomplish the project goals, hydrologic and topographical modifications are proposed to eliminate the standing crop of common reed and introduce tidal flow that will support low and high intertidal salt marsh habitat.

Elevations to be achieved are those which predominantly support the low salt marsh habitat and eradicate common reed. The common reed root mass will be excavated to depths ranging approximately three to five feet. Tidal channels will be created, and the project area will be backfilled with approximately one foot of clean sand.

The clean sand will provide the planting medium necessary to support the tidal wetland and associated coastal upland habitats that will be created as part of the project.

The existing tidal channel will be analyzed to determine the placement and depth of tidal channels within the proposed project area. Proposed elevations will be chosen based on tidal levels that targeted plant communities require. Channels created within the proposed salt marsh will drain of salt water during ebbing tide, where some mixing and influence of groundwater and stormwater may occur, including within the proposed tidal pools. The proposed site design will maximize the elevation range of Mid Tide to Mean High Water that will support low marsh intertidal habitat. The creation of higher and lower points around the low salt marsh to establish both tidal salt pools and high marsh hummocks can be established throughout the site to increase habitat diversity and usage by coastal wildlife.

The existing site also contains a diverse patchwork of ecological systems that are worth preserving, both through protection and salvaging of existing plant material. The most notable ecological communities and features at the site include the maritime dune and beach and maritime shrubland. The proposed restoration plan incorporates and expands the extent and integrity of these communities preserving the maritime shrubland to the northeast of the site and expanding the existing dune to protect the salt marsh from future storms. Restoration plantings will be focused on Spartina alterniflora, Spartina patens (saltmeadow cordgrass), and Distichlis spicata (salt grass), for the created low and high marsh habitats.

The proposed higher diversity of intertidal marsh and maritime vegetated communities allows for the highest potential of biodiversity in plant and animal habitat once the project is completed. Targeted animal species include benthic invertebrates, marine herptiles, wading shorebirds and the species of fish that they typically forage for. The communities proposed offer the ideal habitat to support these species. The target habitats to be created/ restored with target elevation ranges and total acreage are included in Table 1, below:

Table 1. Target Natural Community

Target Natural Community	Elevation Range (above mean sea level, AMSL)	Acreage (total, non-contiguous)
Low Salt Marsh	-0.2 to 2.15 feet	11.5
High Salt Marsh	2.15 to 3 feet	4.5
Maritime Grassland	3 to 5 feet	4.5
Maritime Dune	Up to 10 feet	5.5
Maritime Shrubland	5+ feet	3
Maritime Woodland	6+ feet	1
Total Vegetative Community Acreage Created		**30**

Note: Approximates, may change quantities during Preconstruction, Engineering and Design. Source: (Hazen and Sawyer 2018)

3.3 EXISTING CONDITIONS SUMMARY

The Oakwood Beach Actionable Element Site is identified as a Federal and State listed wetland, with classification codes of Estuarine (E), Intertidal (2), Emergent, *Phragmites austrailis* [dominated], and Irregularly Flooded (P), as well as classification (NA-10) Class I, respectively. Vegetative communities present onsite includes non-native invasive common reed (*Phragmites austrailis*) dominance (approximately 22-acres) as well as some smaller vegetative communities of coastal shoals, bars and mudflats, maritime beach and maritime dune, successional maritime shrubland/forest, low salt marsh, and others in various quantities presented on the following table:

Table 2. Existing Vegetative Community

Vegetative Community	Acreage (total, non-contiguous)
Low Salt Marsh	1.43
Coastal Shoals, Bars, and Mudflats	6.07
Vegetated Coastal Shoals, Bars, and Mudflats	0.11
Salt Panne	0.09
Maritime Shrubland	1.06
Maritime Beach and Maritime Dune	5.98
Successional Maritime Shrubland/Forest	2.37
Common Reed/Non-Native Community	22.38
Total Vegetative Community Acreage	**39.49**

This Actionable Element Site is within a 100-year floodplain, Zone AE defined as an area with 1% chance of annual flood.

Existing habitat, although largely comprised of non-native invasive common reed, is anticipated to provide cover, shelter, foraging, and hunting for wildlife. USACE biologists have performed yearly bird monitoring along the Oakwood Beach shore since approximately 2017, noting observed presence of wildlife including wading, migratory, and predator birds, racoons, fox, and small fish and crabs in the existing tidal channel along the eastern border of the Site. Special status species potentially occurring in the vicinity of the Oakwood Beach Actionable Element Site include both Federal and State listed terrestrial species, such as piping plover, red knot, roseate tern, monarch butterfly (proposed). Aquatic special status species are present throughout the Comprehensive Plan Study Area, including the Lower Bay Planning Region where this Actionable Element Site is located; however, no aquatic threatened or endangered species are anticipated within the Actionable Element Site.

Four Marine Protected Areas (MPAs) are present within the Lower Bay Planning Region, one of which is collocated within this Actionable Element Site. This MPAs classification is zoned as “Multiple Use”, and is managed by the National Park Service (NPS). Commercial and recreational fishing is restricted. This Actionable Element Site is also present within a Coastal Zone Management Act boundary and NPS Great Kills Park.

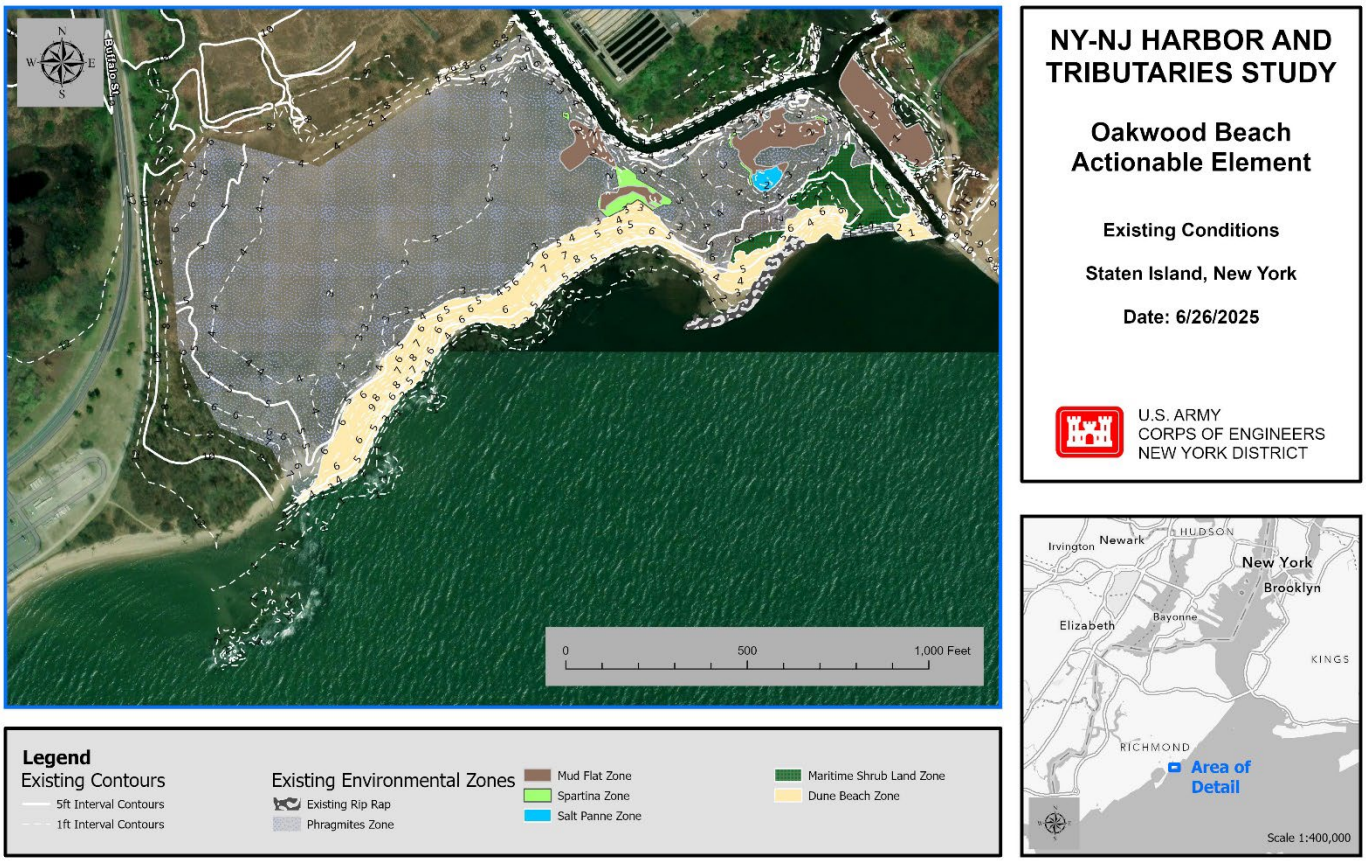

Figure 4. Oakwood Beach Actionable Element Site Existing Conditions

Threatened and endangered species, as well as vulnerable species of concern, with the potential to be present within the NYNJHAT Study Area, Lower Bay Planning Region and the Actionable Element Site were sourced from the Draft Integrated FR/Tier 1 (Programmatic) EIS, the USFWS IPaC database, the NMFS Section 7 Mapper, and the New York Natural Heritage Program website. A Fish and Wildlife Coordination Act Report (FWCAR) was requested from USFWS and a request for information was also submitted to the New York Natural Heritage Program, a response is pending at this time. The NYNHP website identifies that this Actionable Element site is in the location of plants listed as endangered, threated, or rare by New York State. Additionally, the NYNHP website notes the potential presence of several special status sea turtles, including Loggerhead (T), Leatherback (E), Green Turtle (T), and Kemp's or Atlantic Ridley (E). Additional information received from the USFWS and NYNHP will be incorporated into the Final Integrated Interim Response FR/EA.

Refer to the September 2022 Draft Integrated FR/Tier 1 (Programmatic) EIS for a list of all ESA species throughout the NYNJHATS Study Area.

Federal-listed terrestrial threatened and endangered species potentially present within the Comprehensive Plan Study Area, Lower Bay Planning Region are listed below, and those species identified as potentially present in the vicinity of the Actionable Element site, sourced from the IPaC database, are highlighted yellow:

Table 3. Federally Listed Terrestrial Species Potentially Present in the Lower Bay Planning Region and Actionable Element Site

Common Name	Scientific Name	Federal Status	New York State Status	Listing/Recovery Plan Citation	Region/Site Where

					Species May Occur
Mammals					
Indiana bat	*Myotis sodalis*	E	E	32 FR 4001; Draft Recovery Plan: USFWS 2007	LB
Northern long-eared bat	*Myotis septentrionali s*	T	T	80 FR 17973 18033	LB
Tricolored bat	*Perimyotis subflavus*	P	NL	FR 2022-18852	LB
Birds					
Piping plover	*Charadius melodus*	T	E	49 FR 44712; Recovery plan USFWS 2016	LB, AE
Red knot	*Calidris canutus rufa*	T	T	79 FR 73705; Draft Recovery plan: USFWS 2021	LB, AE
Roseate tern	*Sterna dougalli dougalli*	E	E	52 FR 42064; Recovery plan USFWS 1998	LB, AE
Bald eagle	*Haliaeetus leucocephalu s*	NL	T	N/A	LB
Reptiles					
Bog turtle	*Glyptemys muhlenbergii*	T	E	62 FR 59605 59623; Recovery plan: USFWS 2001	LB
Insects					
Monarch butterfly	*Danaus plexippus*	P	NL	85 FR 81813	LB, AE
Northeast beach tiger beetle	*Habroscelimorpha dorsalis dorsalis*	T	T	55 FR 32088; Recovery plan: USFWS 1994	LB
Rusty-patched bumble bee	*Bombas affinis*	E	NL	80 FR 56423 56432; Recovery plan: 85 FR 4334 4336	LB
Yellow-banded bumble bee	*Bombas terracola*	C	NL	Not Found	LB
Flowering Plants					
American chaffseed	*Schwalbea americana*	E	NL	57 FR 44703 44708; Recovery plan: USFWS 2019	LB
Knieskern beaked-rush	*Rhynchospor a knieskernii*	T	NL	56 FR 32978 32983; Recovery plan: USFWS 1993	LB
Seabeach amaranth	*Amaranthus pumilus*	T	T	58 FR 18035; Recovery plan: USFWS 1996	LB

Swamp pink	*Helonias bullata*	T	NL	53 FR 35076 35080; Recovery plan: USFWS 1991	LB

Notes: [1] Status Abbreviations – Threatened (T), Endangered (E), Candidate (C), Proposed (P), Not Listed (NL); [2] Region/Site Abbreviations - Lower Bay (LB) Planning Region, Actionable Element (AE) site vicinity. Yellow = sourced from the USFWS IPaC database as potentially occurring at the Actionable Element Site.

USACE biologists perform yearly bird monitoring along the Great Kills beaches and mudflats since 2017, including Oakwood Beach, and have reported some sightings of red knot, one piping plover, as well as State listed species over several survey years. Surveys take place from May 1 to June 15 and July 15 to November 30th. Most recently in 2024, USACE biologists reported observing 70 species and 4,190 individual birds, but no red knots during the survey windows.

Although not yet a federally or state listed species, saltmarsh sparrow (*Ammospiza caudacuta*) is a bird of particular concern. Although relevant habitat for saltmash sparrow is within the NYNJHAT Study Area, no habitat is anticipated to currently exist at the Actionable Element Site.

Additionally of note, Diamondback terrapins (*Malaclemys terrapin)*, are the only turtle species in North America that live in brackish water including coastal salt marshes, tidal creeks, estuaries, bays, and coves, coming ashore to nest (NYSDEC n.d.). Although not Federal or State listed as threatened or endangered, they are considered vulnerable and have been observed on nearby beaches.

3.4 EFFECTS AND CONSEQUENCES SUMMARY

The species identified as potentially present within the Lower Bay Planning Region and this Actionable Element Site were reviewed for potential to effect, based on the existing conditions and the proposed action, to determine if the species was likely to be present at the Site relative to suitable habitat, and if so further assess if there is an anticipated adverse or beneficial effect. Species that are anticipated to not have suitable habitat available at the Site are likely to have no effect.

Common Name	Scientific Name	Species Habitat Description	Potential Habitat Presence (Y/N)	Potential to adversely effect	Potential to beneficially effect
Mammals					
Indiana bat	*Myotis sodalis*	Maternal roosts under the bark of dead trees during the summer. Prefers riparian zones, floodplain habitat, and wooded wetlands.	Y	Potential habitat loss of live/dead trees, during excavation and vegetative clearing.	Replacement of trees, and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Northern long-eared bat	*Myotis septentrionalis*	Roosts under tree bark, bridges, and crevices of live and dead trees during the summer. Roosts sometimes in buildings, barns, sheds, under eaves, bridges and other manmade structures (USFWS 2022b)	Y	Potential habitat loss of live/dead trees, during excavation and vegetative clearing.	Replacement of trees, and conversion of low quality non-native invasive species dominated habitat to quality habitat.

Tricolored bat	*Perimyotis subflavus*	Caves, abandoned mines; where caves are sparse may be found roosting in road-associated culverts, forested habitats of live and dead deciduous hardwood trees, human structures.	Y	Potential habitat loss of live/dead trees, during excavation and vegetative clearing.	Replacement of trees, and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Birds					
Piping plover	*Charadius melodus*	Ocean beaches; sand dunes, tidal inlets, and tidal flats.	Y	Not anticipated. USACE biologist monitor Oakwood Beach shoreline and have not observed.	Restored dune and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Red knot	*Calidris canutus rufa*	Uses ocean beaches, tidal flats, and inlets for foraging and resting during migration.	Y	Not anticipated. USACE biologists monitor Oakwood Beach shoreline and have not observed.	Restored dune and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Roseate tern	*Sterna dougalli dougalli*	Ocean beaches and barrier islands with vegetation. Nests from Nova Scotia to Long Island.	Y	Potential disturbances to foraging habitat and temporary food chain disruption. Although not anticipated. USACE biologists monitor Oakwood Beach shoreline and have not observed.	Restored dune and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Reptiles					
Bog turtle	*Glyptemys muhlenbergii*	Sunny open freshwater wetlands, especially fens, bogs, and marshes bordering wooded areas.	N	Not anticipated. Habitat not present within action area as bog turtle's habitat is freshwater, not tidally influenced brackish water.	N/A
Insects					
Monarch butterfly	*Danaus plexippus*	Open wildflower meadows and	Y	Potential disturbance to	Restored dune and conversion of

		grasslands, including vegetated roadsides. Requires milkweed for egg laying, larval development, and protection of larvae.		habitat bordering beaches and drainage areas.	low quality non-native invasive species dominated habitat to quality habitat.
Northeast beach tiger beetle	*Habroscelimorpha dorsalis dorsalis*	Inter-tidal zone on undisturbed sandy beaches. Considered extirpated from New York.	Y	Potential disturbance to habitat on beaches, inlets, and dunes; however, this species is known to be extirpated from the area.	Restored dune and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Rusty-patched bumble bee	*Bombas affinis*	Prairies, woodlands, marshes, agricultural landscapes and residential parks and gardens	N	Not anticipated. Potential disturbance to foraging habitat and foot chain disruption; however, this species has not been recorded within 200 miles of the action area since 2007.	Restored dune and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Yellow-banded bumble bee	*Bombas terracola*	Mixed woodlands, farmlands, wildflower grasslands, seeps, and urban areas. Prefers wetland vegetation for pollinator activity.	Y	Potential disturbance to foraging, nesting, and breeding could impact habitat.	Restored dune and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Flowering Plants					
American chaffseed	*Schwalbea americana*	Sandy (sandy peat, sandy loam) acidic, seasonally-moist to dry soils in early successional habitats described as open, moist pine flatwoods, fire-maintained savannas	N	Not anticipated. Habitat is not known to occur in the action area.	N/A
Knieskern beaked-rush	*Rhynchospora knieskernii*	An obligate wetland species endemic to New Jersey; occurs in early successional wetland habitats, often on bog-iron substrates adjace to slow-moving streams in the Pinelands region.	N	Not anticipated. Habitat is not known to occur in the action area.	N/A

Seabeach amaranth	*Amaranthus pumilus*	Barrier islands, inlets, and overwash areas.	N	Not anticipated. USACE biologists have not observed during bird monitoring.	N/A
Swamp pink	*Helonias bullata*	Forested wetlands.	N	Not anticipated. Habitat not known to occur in Study Area.	N/A

Adverse Effects

The ESA prohibits the "take" of protected species, including harassment, hunting, capturing, collecting, or killing. Direct impacts from construction are not anticipated to result in a "take" of a regulated wildlife species due to the limited presence of these species at the project site. Prior to construction, threatened and endangered species surveys may be conducted as necessary to identify potential special status plants or wildlife species present, or with the potential to be present. Should species be identified as present, or potentially present, avoidance is the primary mitigation action to prevent adverse effects to these species. The proposed efforts at this Actionable Element Site are primarily focused on a terrestrial environment set back from the shoreline, aquatic threatened and endangered species, while potentially present in the vicinity, would not be expected within the Actionable Element Site. Since the site is coastally influenced with potential presence of shore-birds, USACE biologists/scientists may continue threatened and endangered species monitoring as they have done for the neighboring South Shore of Staten Island project. If necessary, biologists/scientists may also be present during construction to monitor for special status species and confirm avoidance during construction. Environmental windows will also be implemented, as appropriate for species of concern, anticipated to include at a minimum a no-construction window from November-March, as recommended for the South Shore of Staten Island USACE project adjacent to this Actionable Element Site, determined from several years of bird monitoring data collected by USACE biologists. Potential indirect effects may include the temporary disturbance and/or removal of habitat for foraging species and prey during construction. Although the threatened and endangered species will be avoided, there may be ancillary disturbances that cannot be avoided that may deter species, such as noise and vibrations although those are anticipated to be temporary, low, and addressed through no-construction windows.

No direct or indirect adverse effects from operation and maintenance of the site are anticipated to threatened and/or endangered species, as the site would continue to be monitored for establishment of the native habitat, to prevent the return on non-native habitat, preserving the quality of habitat for wildlife present. Maintenance may include non-native plant management, such as herbicide application and removal which could temporarily disturb terrestrial vegetation to eliminate non-native or invasive species, but would be negligible given that procedures would be established to avoid such impacts.

Beneficial Effects

The proposed project would remove non-native phragmites, and replace with native habitat, inclusive of a new network of tidal channels more suitable for an estuarine wetland habitat, providing additional areas for wildlife to forage and shelter. With the conversion to native habitat, the wetland would be better quality habitat for a variety of wildlife, birds, and fish from the creation of tidal channels, vegetative mosaic, and native salt marsh plantings. Additionally, as part of the action, the installation of two osprey nests within the central portions of the vegetative mosaic and network of tidal channels is proposed. Although not yet a federally or state listed species, the saltmarsh sparrow may benefit from the creation of high-marsh habitat, although both eBird and the Saltmarsh Sparrow Restoration Priority Mapper indicate no saltmarsh sparrows have previously been detected at this Actionable Element Site (BirdLife International 2020). The increased function and capacity of the CSRM wetland would be designed to function as a nature-based coastal storm risk management feature that could more naturally support the absorption of high frequency flood damages, and would be more readily able to function as a natural CSRM buffer for multiple lines of defense between the coast and surrounding communities. Increased benefits would be observed from managing fire risk that can have direct and indirect effects to the Oakwood

Beach neighborhood, wildlife, and fish, such as air quality concerns, smoke, fire damage, and storm damage related pollution.

3.5 POTENTIAL STRESSORS LIKELIHOOD OF EFFECT ASSESSMENT

Potential Stressor	Species			
	Mammals	Birds	Insects	Plants
Physical Seabed/Land Disturbance	NLAA	NLAA	NLAA	NLAA
Air Emissions	NLAA	NLAA	NLAA	NLAA
Habitat Conversion	NLAA	NLAA	NLAA	NLAA
Noise	NLAA	NLAA	NLAA	NLAA
Visible Structures	NLAA	NLAA	NLAA	NLAA
Land Use and Economic Change	NLAA	NLAA	NLAA	NLAA

Notes: NLAA (not likely to adversely affect) is the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. LAA (likely to adversely affect) is the appropriate conclusion when effects on listed species are expected to be measurable and significant. N/A (not applicable) means the stressor/species is not applicable to the action and will not be considered further.

Additional information received from the USFWS and NYNHP will be incorporated into the Final Integrated Interim Response FR/EA, including any conclusions to the adverse and/or beneficial effects of the Actionable Element Site.

4 LIST OF PREPARERS AND CONTRIBUTORS

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Matt Voisine, Biologist, U.S. Army Corps of Engineers, New York District

IPaC U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Richmond County, New York

Local office

Long Island Ecological Services Field Office

(631) 286-0485
(631) 286-4003

340 Smith Road
Shirley, NY 11967-2258

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. 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.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Piping Plover Charadrius melodus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Bald and Golden Eagle information is not available at this time

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated

information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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

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

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (FWS). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The FWS interprets the MBTA to prohibit incidental take.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Migratory bird information is not available at this time

Migratory Bird FAQs

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

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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

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

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

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

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

Proper interpretation and use of your migratory bird report

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

Interpreting the Probability of Presence Graphs
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To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

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No Data ()
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Survey Timeframe
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Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

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

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

This location overlaps the following wetlands:

ESTUARINE AND MARINE WETLAND
E2EM5P

FRESHWATER FORESTED/SHRUB WETLAND
PFO1A

RIVERINE
R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.