Raritan Bay and Sandy Hook Bay, Highlands, New Jersey Coastal Storm Risk Management Feasibility Study

Final Integrated Feasibility Report and Environmental Assessment
May 2020

Appendix A7:
Fish and Wildlife Coordination Act Report

FINAL
FISH AND WILDLIFE COORDINATION ACT
SECTION 2(b) REPORT

RARITAN BAY AND SANDY HOOK BAY
HIGHLANDS, NEW JERSEY
COASTAL STORM RISK MANAGEMENT
FEASIBILITY STUDY
MONMOUTH COUNTY, NEW JERSEY

Prepared by:

U.S. Fish and Wildlife Service
Ecological Services, Region 5
New Jersey Field Office
Galloway, New Jersey 08205

January 2020

United States Department of the Interior

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In Reply Refer To:
20-CPA-0107

Peter Weppler, Chief
Environmental Analysis Branch, New York District
U.S. Army Corps of Engineers
Jacob K. Javits Federal Building
New York, New York 10278-0090
Attention: Matthew Voisine

JAN 23 2020

Dear Mr. Weppler:

On November 4, 2019, the U.S. Fish and Wildlife Service (Service) has received the U.S. Army Corps of Engineers, New York District, Planning Division's (Corps) specific responses to the recommendations provided by the Service in the February 2016 draft Section 2(b) report for the *Raritan Bay and Sandy Hook Bay, Highlands, New Jersey, Coastal Storm Risk Management Feasibility Study.* On December 6, 2019, the Service received a copy of the Corps Final Feasibility Study in draft format. The enclosed final report is provided pursuant to Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401; 16 U.S.C. 661 *et seq.*) and pursuant to a Fiscal Year 2016 interagency agreement.

The information presented in this final report is also provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA) to ensure protection of federally listed (threatened and endangered) species. The following comments do not preclude separate review and comments by the Service on any forthcoming environmental documents pursuant to the National Environmental Policy Act of 1969 (83 Stat. 852; 42 U.S.C. 4321 *et seq.*).

Please note that the Service has not concurred with the Corps' determination of not likely to adversely affect for the federally listed (threatened) piping plover (*Charadrius melodus*). Further consultation pursuant to the ESA is required. The Service wishes to direct your attention to pages 5, 6, 12, and 13 of the attached final report. Noise to be generated by the proposed pile driving may adversely affect the nesting piping plovers on Sandy Hook beaches adjacent to the Study Area, requiring monitoring during the active nesting season or conducting pile driving activities (September 1 to March 14) outside the nesting season.

Any questions regarding this report should be directed to Carlo Popolizio at (609) 382-5271. The Service looks forward to continued cooperation with the Corps to ensure the successful implementation of the proposed project.

Sincerely,

Eric Schrading
Field Supervisor

Enclosure

cc: Kelly.Davis@dep.nj.gov
Matthew.Voisine@usace.army.mil

NJFO:ES:cpopolizio:RP:ES:cap: 1/13/20

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FINAL
FISH AND WILDLIFE COORDINATION ACT
SECTION 2(b) REPORT

RARITAN BAY AND SANDY HOOK BAY HIGHLANDS, NEW JERSEY COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY MONMOUTH COUNTY, NEW JERSEY

Prepared for:

U.S. Army Corps of Engineers
New York District
New York, New York 10278-0090

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Preparers: Carlo Popolizio
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January 2020

EXECUTIVE SUMMARY

The United States Army Corps of Engineers, New York District, has evaluated flood risk management within the Raritan Bay and Sandy Hook Bay, Highlands, New Jersey, Coastal Storm Risk Management Feasibility Study. The Study is designed to protect low-lying areas within the Borough of Highlands, Monmouth County, New Jersey that have long been prone to flooding events associated with tidal inundation from hurricanes and other storm events, resulting in significant property damage, resident displacement, and transport disruption.

The Corps (2015a) first evaluated five alternative coastal storm risk management strategies that included non-structural (house elevations and relocations), hard structural (floodwalls and bulkheads), and soft structural (beachfill and dune) measures, as well as a hybrid measure that sought to minimize environmental impacts by modifying current shoreline features (elevation of existing bulkheads and reinforcement of dunes with sand-covered seawalls on the existing beaches). The hybrid plan was found to be the most effective and efficient among the examined alternatives. During optimization of the hybrid plan, the Corps further developed five variations of the hybrid plan, which include buoyant swing gates and removable floodwalls. Of the five variations, Alternative 5E, which prioritized coastal storm risk management over water access by including stationary components, was supported by the New Jersey Department of Environmental Protection, was found to have the highest net benefits, and was chosen as the Tentatively Selected Plan.

The Service provides recommendations for the protection of federally listed species and species proposed for listing pursuant to the Endangered Species Act. Moreover, the Service updates the status of species being evaluated for possible listing under the Act. The Service further provides lists of migratory birds of conservation concern and fish; recommends plantings of vegetation suitable to pollinator conservation; and highlights the need for control of invasive plant species.

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I. INTRODUCTION

The United States Army Corps of Engineers, New York District (Corps), has evaluated flood risk management within the Raritan Bay and Sandy Hook Bay, Highlands, New Jersey, Coastal Storm Risk Management Feasibility Study (Study). The Study is designed to protect low-lying areas within the Borough of Highlands (Borough), Monmouth County, New Jersey that have long been prone to flooding events associated with tidal inundation from hurricanes and other storm events, resulting in significant property damage, resident displacement, and transport disruption (U.S. Army Corps of Engineers 2015a, 2019a).

Flood damage to structures adjacent to the Borough's shoreline occurs primarily due to Sandy Hook Bay tidal flooding, storm surge, and wave impacts associated with coastal tropical storms, hurricanes, and nor'easters. High winds from these storm events push water into Raritan Bay and cause an elevated rise in tide levels. The Borough experienced severe flooding during Hurricane Sandy in October 2012, a 190-year event that damaged or destroyed approximately 1,100 of the 1,500 structures. The SeaStreak Ferry, which serves many businesses throughout the northeast and provides mass transportation for commuters to New York City, was unable to operate for months after the ferry's terminal was destroyed by the storm.

Extensive urbanization within the Borough's coastline over the past century resulted in extensive destruction of dunes and beaches and increased the need to protect shorefront areas. In response to the severe damage sustained during Hurricane Sandy, the Borough committed to ensuring that the waterfront will be better constructed to withstand future storms and minimize future storm damage (Highlands Borough 2013). Despite efforts to construct effective shore protection structures, major losses from flooding and storm surges continue to plague the low-laying areas of the Borough (U.S. Army Corps of Engineers 2015a).

The Study was authorized by resolution of the Committee on Public Works and Transportation of the U.S. House of Representatives (House Document No. 464) adopted on August 1, 1990. The Hurricane Sandy Disaster Relief Appropriations Act of 2013 (Public Law 113-2) provided additional funding and authorization to complete the Feasibility Study. The non-Federal project partner, New Jersey Department of Environmental Protection (NJDEP), supports the National Economic Development (NED) Plan and is willing to enter into a Project Partnership Agreement (PPA) with the Corps for implementation (U.S. Army Corps of Engineers 2019a).

The U.S. Fish and Wildlife Service (Service) provides this Final Section 2(b) Report pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401; 16 U.S.C. 661 *et seq.*) (FWCA) and Section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA). In accordance with our Fiscal Year-2016 scope of work agreement entitled *Coastal Storm Risk Management Feasibility Study Raritan Bay and Sandy Hook Bay, Highlands, Monmouth County, New Jersey,* the Service also provided a Draft Section 2(b) Report to the Corps on February 10, 2016.

In this final report, the Service provides information regarding fish and wildlife resources, including federally and State-listed threatened and endangered species; identifies ecologically sensitive sites in the Study Area; identifies fish and wildlife species within or in the vicinity of

the Study Areas and discusses potential impacts on these species that may result from implementation of flood control measures; identifies opportunities for fish and wildlife habitat improvements; and updates the current state of knowledge concerning the proposed activities and their potential adverse impacts on fish and wildlife resources.

II. DESCRIPTION OF THE PROPOSED ACTION

The Corps (2015a) first evaluated five alternative coastal storm risk management strategies that included non-structural (house elevations and relocations), hard structural (floodwalls and bulkheads), and soft structural (beachfill and dune) measures, as well as a hybrid measure that sought to minimize environmental impacts by modifying current shoreline features (elevation of existing bulkheads and reinforcement of dunes with sand-covered seawalls on the existing beaches). The Study Area and, within it, the Project Area are showed in Figure 1. The hybrid plan was found to be the most effective and efficient among the examined alternatives. During optimization of the hybrid plan, the Corps further developed five variations of the hybrid plan, which include buoyant swing gates and removable floodwalls. Of the five variations, Alternative 5E, which prioritized coastal storm risk management over water access by including stationary

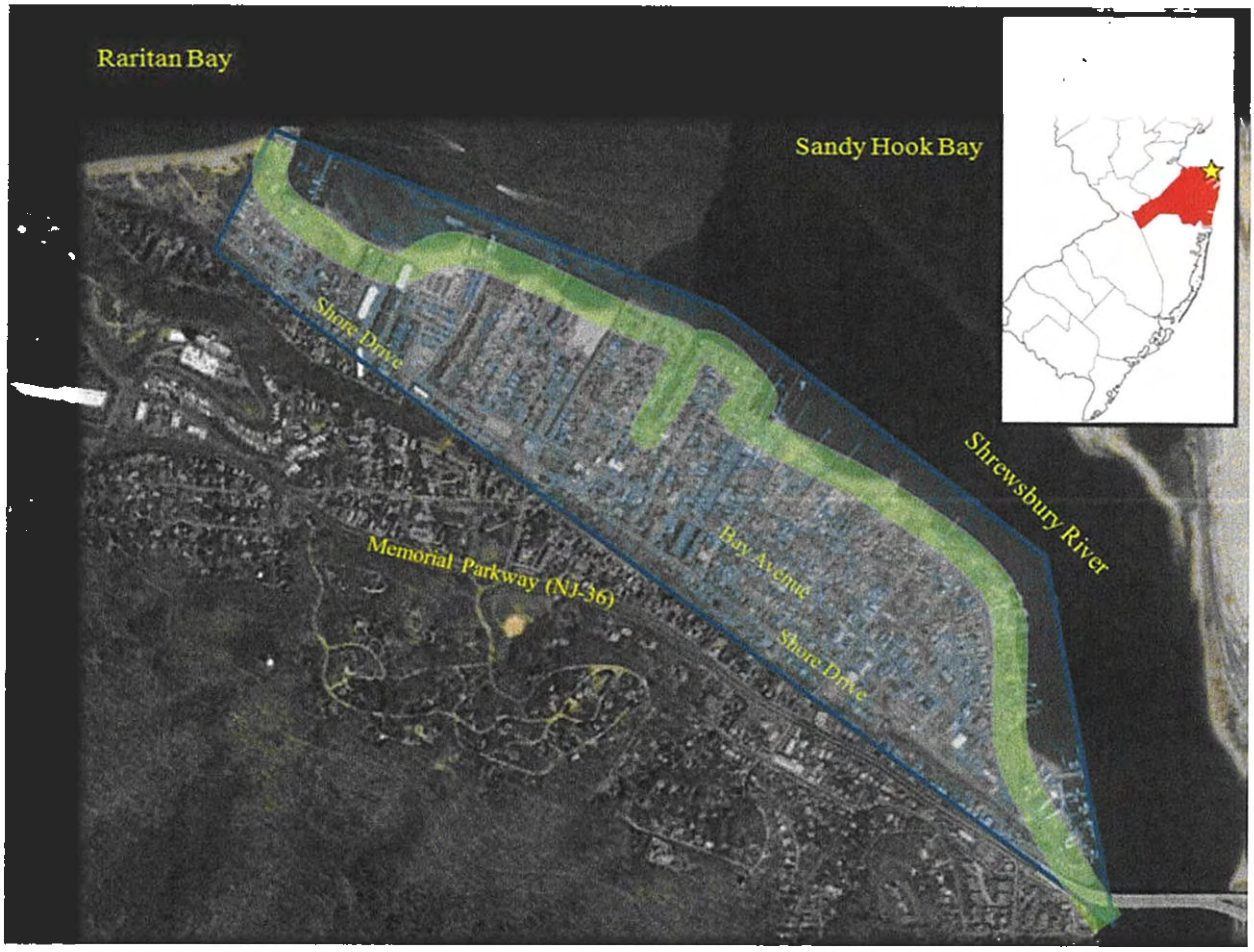

Figure 1. Highlands Borough. The Study Area is shown shaded in blue. The Project Area is shown highlighted in green (U.S Army Corps of Engineers 2015a, 2019a).

components, was supported by the NJDEP and was found to have the highest net benefits, making it the Tentatively Selected Plan (TSP).

Components of the TSP total 10,636 feet of shoreline and tie into high ground at each end of the Project Area (+10 feet NAVD 88 and +12.4 feet NAVD 88 respectively). For each segment of the TSP, project features will match the existing surroundings. Components of the TSP include 9,362 feet of T-type floodwall; 992 feet of I-type floodwall; 55-foot wide closure gate; pump station, with two operating pumps for a total capacity of 300 cubic feet/second; a 1.6-acre detention pond; and 1,600 feet of pressurized pipe (U.S. Army Corps of Engineers 2019a, Voisine pers. comm. 2019).

A private developer had proposed a new multi-use development along approximately 600 feet of shoreline at the westernmost end of the Project reach, incorporating a combination of raised ground surfaces and new bulkheads that would tie into the proposed Corps Project. The Corps confirmed that the multi-use development has been completed and raised to +14 NGVD (Voisine pers. comm. 2019).

Naturally occurring coastal dunes and beaches are dynamic systems that help protect lives and property from the effects of major natural coastal hazards such as hurricanes, storms, flooding and erosion. The presence of tidal wetlands can also attenuate storm surges (Wamsley *et al.* 2010). Levees and other man-made barriers that are constructed to reduce impacts from storm surge may also obstruct the drainage of flood waters from upland sources (U.S. Army Corps of Engineers 2013).

One of Borough's primary goals was to acquire parcels to increase open space (T&M Associates 2008); however, the built out nature of the Borough has been cited as a major impediment to developing parks and open space (New Jersey Future 2014). Increasing open space protects habitat for wildlife species and creates wildlife corridors between upland and coastal areas of the Borough while minimizing flood damage to private properties. The Borough's *Recreation and Open Space Plan* (T&M Associates 2008) identified several possible funding sources that could assist in implementing its open space acquisition plan; there may also be additional funding opportunities post-Hurricane Sandy, as the Federal Emergency Management Agency, Department of Housing and Urban Development and other agencies have provided funds for the purchase of flood prone properties for the purpose of converting them to open space or floodplain restoration.

Construction activities may disturb forested or scrub/shrub habitat. The New Jersey No Net Loss Reforestation Act (NNLRA) (N.J.S.A. 13:1L-14.1 *et seq.*) requires State entities to replant trees when trees are removed during development projects involving one-half acre or more. Because the NJDEP is the Corps non-Federal sponsor and will "operate, maintain, repair, replace, and rehabilitate the completed Project" (U.S. Army Corps of Engineers 2015a, 2019a), the Project should be reviewed by the NJDEP's Division of Parks and Forestry (NJDPF) to determine if the NNLRA is applicable.

III. STUDY AREA

The Borough of Highlands is located in the northeastern section of Monmouth County and is bounded on the north by Sandy Hook Bay and on the east by the Shrewsbury River. The entire Borough is located in the Atlantic Coastal Plain physiographic province. Surficial geologic elements are primarily composed of beach and nearshore marine sand of Holocene origin. Areas immediately inland and up-gradient are sandy alluvium and colluvium deposited primarily in the late Pleistocene epoch. Soils are primarily well drained urban land complexes, with medium runoff and variable capacity to transmit water (Ksat). Impervious surface is between 45 and 65 percent (New Jersey Department of Environmental Protection 2016). Stormwater runoff within the Study Area moves directly toward Sandy Hook Bay and the Shrewsbury River via the Borough's sewer system supplemented by four pump stations.

A coastal bluff reaches a maximum elevation of approximately 260 feet NAVD88 less than one quarter mile inland. Much of this area is developed as single family residences. While the sandy and loamy sand soils in this area are classified as well drained with low runoff and a high Ksat, the high gradient combined with impervious surface creates potential for high runoff during rainfall events. The large amount of surface runoff from the cliffs onto the low lying arcas during storm events has been documented as a problem, with the Borough's stormwater management system having difficulty handling the runoff (T&M Associates 2007). This area has experienced slumping and erosion that has resulted in property damage and public safety issues both above and below the bluff (New Jersey Future 2014). The Project Area consists of densely developed marine, commercial, and residential buildings at the western terminus, and extends eastward approximately 11,000 feet, bounded by the Sandy Hook peninsula. Wildlife resources are primarily limited to existing beach areas and a strip of woody vegetation ranging from 50 to 200 feet in width along the base of the coastal bluff, roughly paralleling Shore Drive along the southern edge of the Project Area.

IV. METHODS AND PROCEDURES

This Final FWCA Section 2(b) report incorporates information compiled from searches of the Service's New Jersey Field Office library and office files, information provided by the Corps, personal communications, the New Jersey Landscape Project [New Jersey Division of Fish and Wildlife (NJDFW) 2017], and the internet.

V. EXISTING CONDITIONS

A. FEDERALLY LISTED SPECIES

1. Northern Long-eared Bat

The Study Area is located within the summer breeding range of the northern long-eared bat (*Myotis septentrionalis*). The northern long-eared bat overwinters in caves and abandoned mines. After leaving hibernacula in April, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. The northern long-eared bat forages primarily on flying insects.

On April 2, 2015, the Service listed the northern long-eared bat as threatened under the ESA and established an interim 4(d) rule following drastic population declines caused by white-nose syndrome in the eastern and mid-western United States. The final 4(d) rule for the northern long-eared bat (effective January 13, 2016) prohibits purposeful take of northern long-eared bats throughout the species' range, except in instances of removal of northern long-eared bats from human structures, defense of human life (including public health monitoring), and removal of hazardous trees for protection of human life and property. In areas of the country impacted by white-nose syndrome (such as New Jersey), incidental take of northern long-eared bat is prohibited if it occurs within a hibernation site or results in tree removal activities within a quarter-mile of a hibernaculum. Incidental take is also prohibited from activities that remove or destroy any known occupied maternity roost tree, or any other trees within 150 feet of that maternity roost tree, during the pup-rearing season (June 1 through July 31).

There are no known northern long-eared bat hibernacula or maternity sites within or near Highlands, although this species is known to occur within or in the vicinity of the Study Area. Therefore, the Service concurs with the Corps' determination of no effect. The Service recommends the Corps utilize their Section 7(a)(1) authorities to further the purposes of the ESA by carrying out programs for the benefit of northern long-eared bat conservation.

2. Piping Plover

The federally listed (threatened) piping plover (*Charadrius melodus*) occurs near the Study Area. Piping plovers are present on the New Jersey shore during the breeding season, generally between March 15 and August 31. There have not been any observed nesting in Highlands or on nearby Raritan Bay beaches; the Service does not anticipate that any nesting activity would take place in the Project Area. However, there are known occurrences of the piping plover at Sandy Hook and Sea Bright, within one quarter mile of the Project Area.

The nearby Sandy Hook Unit of the Gateway National Recreation Area annually supports the largest number of nesting piping plovers in New Jersey. In 2019, there were 41 nesting pairs at Sandy Hook, some within less than one quarter mile to a mile away from the Project Area. The Service's Best Management Practices for conservation of piping plover recommend avoiding noise and disturbance within one mile during the nesting season and to seasonally restrict work that might disturb piping plovers during the nesting season of March 15 through August 31. Loud noises and other disturbances associated with heavy construction equipment likely to be utilized during construction phases of the proposed Project activities have potential to adversely impact nearby nesting piping plovers.

Construction activities conducted at any time from September 1 through March 14 will not affect nesting piping plovers. If any construction activities involving pile-driving or demolition are planned to extend into the restricted season, further consultation with the Service's New Jersey Field Office (NJFO) is required. The use of noise muffling devises on pile drivers and demolition equipment between March 15 and August 15 should be investigated. A Service ESA Section 7 consultation for a demolition and construction project on the State Route 36 Bridge, located adjacent to the proposed Study Area, determined that an increased noise level at or below 6 decibels (dBA, the A-weighted sound pressure level) above ambient was not

likely to affect nesting piping plovers on the nearby Sandy Hook beaches (Amy S. Greene Environmental Consultants, Incorporated 2008, U.S. Fish and Wildlife Service 2008b).

The Corps (2019b) has determined that the Project as proposed is not likely to adversely affect the piping plover. The Service agrees that there are no records of piping plovers nesting within the Project Area and, besides the existing bulkhead, the limited beach areas surrounded by residential dwellings or commercial buildings do not provide habitat for piping plovers. However, there are breeding piping plovers nearby on Sandy Hook beaches and some pairs are known to nest about a quarter of a mile away from the Project Area. The Corps (2019b) stated that the use of vibratory pile driving may cause noise disturbance to the piping plovers. The Service notes that any noise pushing piping plovers off their selected breeding territory is an adverse effect. The Corps (2019b) stated that current design level does not detail the type of pile driving, materials, or duration; during the Preconstruction Engineering and Design phase of the Project, the Corps will coordinate with the Service in order to mitigate any noise impacts (dBA at nest cannot exceed 6 dBA higher than ambient level). The Corps (2019b) determined that outdoor construction noise level may range from 78 to 89 dBA approximately 50 feet from a construction site. The Service has tentatively assessed that noise generated by the proposed demolitions and pile driving may be as high as 48 dBA at piping plover nesting areas a quarter mile away. Therefore, the Service does not concur with the Corps determination of not likely to adversely affect piping plovers. Further consultation pursuant to Section 7 of the ESA is required. Alternatively, the Corps may elect to conduct demolition and pile driving activities outside the March 15-August 31 nesting season.

3. Seabeach Amaranth

The federally listed (threatened) seabeach amaranth *(Amaranthus pumilus)* is known to occur on nearby beaches outside of the Project Area. Seabeach amaranth is an annual plant found on the dunes and upper reaches of Atlantic Ocean beaches. It appears to be intolerant of competition and does not occur on well-vegetated sites. It occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, and sand and shell material placed as beach replenishment or dredge spoil. Seabeach amaranth stems are fleshy and pinkish-red or red, small (0.5 – 1 inch in diameter) rounded leaves are spinach-green, clustered towards the tips of the stems. Flowering begins as early as June and continues until the death of the plant in late fall. Seed production may begin in July and continues until the death of the plant.

The Corps (2019b) has agreed to survey for seabeach amaranth one week prior to construction on the beaches, if construction is scheduled to occur during the growing season (May 15 – Nov 30). If any seabeach amaranth plants are identified, the Corps will install string-and-post fencing to allow a 3-meter buffer around each plant or group of plants. Fencing will be marked with flagging and signs. No intrusions (including personnel, equipment, or materials) will be allowed within fenced areas. Surveys and fencing will be coordinated with the Service before and during the construction period. Please note that seabeach amaranth is readily identifiable only after July 1; surveys conducted between May 15 and the end of June may result in false negative findings. Ongoing consultation pursuant to Section 7 of the ESA is required; please provide survey results to the Service for concurrence.

4. Red Knot

The Study Area is located within the range of the federally listed (threatened) rufa red knot (*Calidris canutus rufa*). The rufa red knot is a long-range migrant shorebird that breeds in the tundra of the central Canadian Arctic and has a winter range that stretches from the southern tip of South America to the southeastern and Gulf coasts of the United States. A few red knots have been observed on beaches in the vicinity of the Study Area and those sightings have occurred primarily during the fall migration season from August through November. While it is possible that red knot may briefly stop on Highlands beaches during fall, given the extremely limited amount of suitable foraging habitat available within the Study Area, the Service concurs that proposed Project activities are insignificant or discountable, and not likely to adversely affect the red knot.

5. Black Rail

In the northeastern United States, the eastern black rail (*Laterallus jamaicensis jamaicensis*) can typically be found in both inland freshwater locations and coastal salt marsh with dense cover, but can also be found in upland areas of these wetlands or marshes. The Service was petitioned in April 2010 to list the eastern black rail as an endangered or threatened species under the ESA. In September 2011, the Service published a 90-day finding that the petitioned action may be warranted and initiated a review of the subspecies. A 12-month finding based on that review was delivered to the Federal Register proposing to list the eastern black rail as a threatened species.

The eastern black rail is State-listed as endangered in New Jersey. The black rail is also State-listed as either endangered or threatened in six other states within the subspecies' range: Delaware, Illinois, Indiana, Maryland, New York, and Virginia. The Service has determined that habitat within the Study Area is unsuitable to the black rail; no adverse impacts are expected from Project activities.

6. Other Federally Listed Species

Except for the aforementioned species, no other federally listed threatened or endangered flora or fauna under Service jurisdiction are known to occur in the vicinity of the property. If additional information on federally listed species becomes available, or if Project plans change, this determination may be reconsidered.

7. Species under Review for Federal Listing

The Service is evaluating the species listed in Appendix I to determine if listing under the ESA is warranted. These species do not currently receive any substantive or procedural protection under the ESA, and the Service has not yet determined if listing of any of these species is warranted. However, the Corps and other Federal action agencies should be aware that these species are being evaluated for possible listing and may wish to include them in field surveys and/or impact assessments, particularly for projects with long planning horizons and/or long operational lives.

B. OTHER FISH AND WILDLIFE RESOURCES

1. Migratory Birds

Migratory birds are a Federal trust resource responsibility of the Service. Migratory birds are also protected pursuant to the Migratory Bird Treaty Act of 1918 (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703-712). Please refer to the U.S. Fish and Wildlife Service (2013) for a complete list of migratory birds in the United States. The FWCA requires the Secretary of the Interior, through the Service, to identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA. *Birds of Conservation Concern* (U.S. Fish and Wildlife Service 2008a) is the most recent effort to carry out this mandate. The overall goal of this report is to accurately identify the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the highest conservation priorities. A resource assessment by the Service's Information, Planning, and Conservation System (IPaC) identified a total of 24 Birds of Conservation Concern (BCC) to occur seasonally or year-round within the Project area (Appendix II) (USFWS 2016).

The Study Area lies within the Atlantic Coast Critical Bird Migration Area. Available habitat in this area provides potential nesting and foraging habitat for over 100 different migratory avian species (eBird 2016). Completion of the Project may require the removal of trees, shrubs, or other vegetation. Voisine (pers. comm. 2019) stated that vegetation removal should not exceed 0.25 acre. According to the NJDFW (2008), the general timing restriction to protect nesting migratory birds from tree or shrub/scrub removal is March 15 to July 31. Please be advised that the NJDFW and the Service informally agreed to modify the general timing restriction to April 1-August 31 to protect nests and unfledged chicks. This recommended seasonal restriction should be expanded to March 1 for nesting raptors.

2. Fish

Estuaries are critical and essential for maintaining healthy marine fisheries resources, as many fish species depend on this unique habitat during at least part of their life stages. The NMFS has designated habitats where federally managed fish species spawn, breed, feed, or grow to maturity as Essential Fish Habitat (EFH). Pursuant to Section 305 (b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265, as amended), the Corps made a determination that any adverse effect on EFH is not substantial, submitting documentation to NMFS for an abbreviated EFH consultation (Corps 2015b). A list of federally managed fish found to occur within or in the vicinity of the Project Area is provided in Appendix III. Other fish species that are important components of estuarine ecology and provide forage for area fish and wildlife include alewife (*Alosa pseudoharengus*), Atlantic menhaden (*Brevoortia tyrannus*), Atlantic needlefish (*Strongylura marina*), Atlantic silversides (*Menidia menidia*), bay anchovy (*Anchoa mitchilli*), blueback herring (*Alosa aestivalis*), conger eel (*Conger oceanicus*), crevalle jack (*Caranx hippos*), fourspine stickleback (*Apeltes quadracus*), hickory shad (*Alosa mediocris*), inshore lizzardfish (*Synodus foetens*), mummichog (*Fundulus heteroclitus*), oyster toadfish (*Opsanus tau*), rainwater killifish (*Lucania parva*), sheepshead minnow (*Cyprinodon variegatus*), silver perch (*Bairdiella chrysura*), smooth dogfish (*Mustelus canis*), spot (*Leiostomus xanthurus*), spotted hake (*Urophycis regius*), striped killifish (*Fundulus majalis*),

striped mullet (*Mugil cephalus*), striped searobin (*Prionotus evolans*), tautog (*Tautoga onitis*), threespine stickleback (*Gasterosteus aculeatus*), tidewater silversides (*Menidia beryllina*), white perch (*Morone americana*), white mullet (*Mugil curema*), and weakfish (*Cynoscion regalis*) (Lynch *et al.* 1977; New Jersey Department of Environmental Protection 1979; U.S. Fish and Wildlife Service 1997).

3. Pollinators

Pollinators contribute substantially to the economy of the United States and are vital in maintaining healthy ecosystems; yet, severe losses of honey bees, native bees, birds, bats, and butterflies, have been observed over the past few decades. Honey bee pollination alone adds more than $15 billion in value to agricultural crops each year in the United States (U.S. Department of Agriculture 2015). The number of honey bee colonies declined about 50 percent from 1940s levels; since the 2008 emergence of Colony Collapse Disorder (a phenomenon that occurs when the majority of worker bees in a colony disappear), annual losses of honey bee colonies averaged about 30.5 percent (U.S. Environmental Protection Agency 2014). Another pollinator species experiencing steep population decline is the monarch butterfly. The number of migrating monarch butterflies reached an all-time low in 2013-2014, reduced by 97 percent from the 1996-1997 high and by 90 percent from the 20-year average (Rendón-Salinas and Tavera-Alonso 2014).

With the potential Federal listing of the monarch butterfly the Service has a mandate to increase its habitat (milkweed and foraging food sources) by 100,000 acres, with a goal of 10,000 acres of new habitat in the northeast (which includes New Jersey). The Service is to work in collaboration with the Monarch Joint Venture (a partnership of Federal and State agencies, non-governmental organizations, and academic programs) to help achieve this goal. Areas along the landward slopes of dunes and areas where sand fill is to be placed behind bulkheads may provide opportunities to plant herbaceous vegetation that support pollinator species.

In an effort to ensure the sustainability of food production systems; avoid additional economic impact on the agricultural sector; and protect the health of the environment, President Obama established the Pollinator Health Task Force to expand Federal efforts to reverse pollinator losses and help restore populations to healthy levels. In a June 20, 2014 memorandum, the President called on Federal agencies, including the Service, the Corps, and the USDA to "develop... plans to enhance pollinator habitat, and subsequently implement, as appropriate, such plans on their managed lands and facilities, consistent with their missions and public safety;" and for the Corps to "incorporate conservation practices for pollinator habitat improvement on ... projects across the country" (Obama 2014).

4. Invasive Species

A substantial amount of soil could be displaced or compacted during construction, especially along bulkheads, access sites, and staging areas. Disturbed soils are often colonized by invasive plants species such as Japanese knotweed (*Polygonum cuspidatum*) and Japanese stilt grass (*Microstegium vimineum*). Once established, invasive plant species are difficult to control and may form monocultures that displace native plants. Service guidelines for habitat restoration

projects mandate post-project surveys be conducted for up to five years and, if at any time invasive species account for more than five percent of the vegetation present, a site specific invasive species control plan is to be developed and implemented. To help prevent invasive species from colonizing terrestrial areas, topsoil should be stockpiled and protected for post-construction replacement. Areas where soils have been compacted should be tilled with low ground-pressure equipment before topsoil replacement and seeding.

VI. SERVICE COMMENTS AND RECOMMENDATIONS

The Service provided comments and recommendations in the draft FWCA Section 2(b) Report are provided with the aim of assisting the Corps to implement Project activities in a manner that conserves, protects, and enhances fish, wildlife, and plants and their habitats. The following summarizes the Service's general conclusions and recommendations followed by the Corps' responses provided on October 30, 2019 and highlighted in italics. Service replies to Corps responses are underlined.

1. Provided plans for earthen walkovers on reinforced dunes do not indicate any railings along the paved paths. The Service recommends that railings be installed to restrict access and prevent erosion of the dunes.

   Corps response: The design plans have hand railings on the walkovers.

2. Contact the NJDPF to determine applicability to the NNLRA to the Project.

   Corps response: The NNLRA covers lands owned or maintained by the State. Private entities currently own the lands. For construction, the Borough of Highlands will purchase the land. The NNLRA is not applicable. The Service notes that NNLRA applies to State entities *(i.e., the NJDEP as non-Federal sponsor).*

3. Consider incorporating impact of sea-level rise, and the effect of increased runoff rates and loss of flood plain (due to existing and proposed Raritan Bay and Raritan River watershed flood risk management projects), into projections of anticipated flood levels.

   Corps response: In section 3.2.1, the District predicted sea level to rise + 0.7 feet over the 50–year Study period. The District incorporated sea level rise in the design of the Project.

4. Review Project objectives and components to ensure they are in accord with objectives and goals set forth by recent Corps and Hurricane Sandy Rebuilding Strategy Task Force (2013, 2014) (HSRS) initiatives promoting flood resiliency.

   Corps response: The Project goals for the Highlands are:
   1) Manage the risk of damages from flooding caused by storm surge due to coastal storms that impact Highlands through 2071.

2) *Develop a resilient and sustainable risk management solution for Highlands through 2071. The District is in accord with some of the HSRS goals; however, some of the goals are beyond the District's authority. The District's first goal aligns with the HSRS goals of: a) supporting small businesses and revitalizing local economies, b) building State and local capacity to plan for and implement long-term recovery and rebuilding, and c) addressing insurance challenges, understanding, and affordability.*

The Districts second goal aligns with the HSRS goals of: a) promoting resilient rebuilding through innovative ideas and a thorough understanding of current and future risk and b) ensuring a regionally coordinated, resilient approach to infrastructure investment. The HSRS goal of improving data sharing among Federal, State, and local officials, is part of every District project.

It is beyond the District's authority to align with the HSRS goal, addressing insurance challenges, understanding, and affordability.

3) Coordinate with NJDEP to determine the amount of wetland habitat within the Project area. If wetland habitat is determined likely to be impacted during Project construction, prepare a mitigation plan in accordance with NJDEP guidelines. Coordinate all mitigation planning with the Service and NJDEP to maximize benefits to wetlands and fish and wildlife habitats.

Corps response: The District is coordinating with NJDEP to determine the amount if wetland habitat impacted. The District will mitigate the wetland impacts through a wetland bank. The District will coordinate mitigation planning with the Service and NJDEP.

4) Sub-surface marine sediments in and near the Project Area are likely to contain high levels of contaminants. To prevent recontamination of benthic sediments and the marine environment, excavated sediments should be removed and transported to an appropriate disposal facility. Any sediment used for bulkheads or dune construction should come from an approved borrow area.

Corps response: The District searched Federal and State environmental databases for the presence of contaminated sediment. The District also conducted a series of subsurface sampling along the shoreline of Highlands. Both the database review and the sampling showed no concerns of contaminated sediment. However, if during construction any contaminated sediments are found, they will be removed and transported to an appropriate disposal facility.

5) Schedule any pile-driving and other loud construction or demolition activities outside of the piping plover nesting season of March 15 through August 31. If any construction activities are to take place during the nesting season further consultation with the NJFO is required. If construction causes noise levels to exceed 6 dBA above ambient in the vicinity of any nesting area, a Contingency Plan to monitor piping plover behavior may need to be developed. An integral part of the Contingency Plan

is that the monitor is authorized to stop pile driving and demolition activities if it is determined that piping plover behavior is being affected by the increase in noise.

Corps response: There are no reported piping plovers within the project alignment. Most of the project alignment is along existing bulkhead that does not provide beach habitat for piping plovers. The little beach areas that do exist, do not provide habitat for piping plovers. The beaches are very small, surrounded by homes or commercial buildings, and provide no foredune or washover areas. The Service concurs that there will be no impact to any plovers on-site due to lack of habitat. *However, there are breeding piping plovers nearby on Sandy Hook beaches about a ¼ of a mile away for the project alignment. The use of vibratory pile driving may provide noise disturbance to the piping plovers. If present, piping plovers may be exposed to in air noise from pile driving, but would be expected to avoid the area around active impact pile driving and extraction construction activities.* The Service notes that Section 7 consultation pursuant to the ESA is only for piping plovers nesting at Sandy Hook, approximately 0.25 mile away. *Pile driving activities would not occur at beaches that are designated as piping plover critical habitat.* The Service notes that there is no designated critical habitat for Atlantic coast breeding piping plovers. *Current design level does not detail the type of pile driving, materials, or duration. During the Preconstruction Engineering and Design (PED) phase of the Project, the District will coordinate with the Service in order to mitigate any noise impacts (dBA at nest cannot exceed 6 dBA higher than ambient level).* The Service concurs as long as "mitigation" means "stop work if birds are disturbed by the noise." This will require monitoring dBA levels in the nesting area, and possibly bird responses, which needs to be closely coordinated with NJFO and NPS. Based on two earlier bridge studies (Bosakowski *et al.* undated and Amy S. Greene Environmental Consultants 2008), the Service may raise the limit in the nesting area to 10 dBA above ambient. *Construction of the project would temporarily increase ambient noise levels in and around the construction sites. Based on data presented in Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances (U.S. Environmental Protection Agency 1971), the main phases of outdoor construction typically generate noise levels that range from 78 dBA to 89 dBA, approximately 50 feet from a construction site. Noise levels are estimated to decrease by approximately 6 dBA with every doubling of distance from a noise source. It should be noted that the standard attenuation rate for point source noise (e.g., pile driving) is 6 dBA, and the standard attenuation rate for line source noise (e.g., traffic related noise) is 3 dBA. These standard attenuation rates do not take into account any reduction factors, such as soft site, vegetation, or atmospheric conditions.* The Service has tentatively estimated noise levels from the proposed vibratory pile driving at *48 dBA a quarter mile (1,320) away.* Based on the attenuation rate given, what does the Corps project the noise levels to be in the nearest nesting area? *The threshold level for a significant noise impact is defined as a permanent increase in noise or prolonged periods of nighttime noise in noise-sensitive areas.* The Service notes that the threshold for "significant noise impact" may be either a National Environmental Policy Act (83 Stat. 852:42 U.S.C. 4321 *et seq.*) or Corps definition, but it is not relevant to ESA. The consultation standard is whether the Project may adversely affect a federally listed species, as per the Consultation Handbook (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1998). *Construction noise may at times be between 78 and 89 dBA outside the houses adjacent to the*

construction sites, depending on the type of construction activity that is conducted; noise levels inside the houses would be approximately 30 to 40 dBA lower. Not relevant. The Service needs the projection to the nearest nesting area. *Such measures may include but are not limited to construction windows and noise dampening measures.*

After a full evaluation of the piping plover life history, habitats in the project area, coordination with the Service, and proposed project activities, a "may affect, but not likely to adversely affect" determination was made by the Corps on populations of piping plover as a result of implementation of the proposed activities. The Service does not concur with this determination. Further consultation pursuant to Section 7 of the ESA is required by the Service.

6) During the seabeach amaranth growing season of May 15 through November 30, survey Project Area beaches within one week before the start of Project construction to identify habitat and/or presence. Continue to survey suitable habitat weekly. Use fence post and string to provide a 3-meter exclusion buffer around any identified plant.

   Corps response: The District will conduct seabeach amaranth surveys prior to the start of Project construction. Surveys in suitable habitat will continue weekly. The District will establish exclusion fencing according to Service protocol, if any seabeach amaranth is identified within the project area.

7) Utilize the Corps Section 7(a)(1) authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of northern long-eared bat.

   Corps response: Within the Highlands Project authority, the District is not authorized to carry out conservation measures for the benefit of northern long-eared bats.

8) Avoid the removal of trees or shrubs during the migratory bird nesting season of April 1 through August 31. If minimal suitable habit is to be disturbed, a visual survey to determine presence or absence of active bird nests may be immediately precede the planned disturbance, which may proceed if absence of nesting migratory birds is confirmed.

   Corps response: The District will plan to remove trees and shrubs during the non-breeding season. However, it is anticipated that low amount of trees will need to be removed. If trees are to be removed during the bird-breeding season, surveys will be conducted for nesting migratory birds.

9) Coordinate selection of staging areas and construction access sites with the Service to minimize impacts to wildlife habitat.

Corps response: The District welcomes the Service's recommendations for staging and construction access. The District will identify staging areas and access sites that minimize impacts to wildlife habitat.

10) Coordinate with the New Jersey Endangered and Nongame Species Program (ENSP) to verify the presence or absence of State-listed species in the Project Area. If present, institute measures (as recommended by ENSP) to avoid adverse impacts on these species.

Corps response: The District has coordinated with NJDEP-ENSP. The ENSP identified silver-haired bat hibernacula near the project area. The ENSP recommended tree clearing in the winter months.

11) Provide the Service with results of NMFS consultation concerning the Corps' determination of no adverse effect to EFH.

Corps: response: When completed, the District will provide the Service the results of the NMFS consultation pertaining to EFH.

12) Develop construction plans that provide for the enhancement of pollinator habitat to the maximum extent possible.

Corps response: The District will develop construction plans that provide for the enhancement of pollinator habitat to the maximum extent possible. Plans currently call for vegetation to be planted on the sand covered bulkheads. When and where appropriate pollinator habitat will be created.

13) Include native pollinator seed mixes into revegetation plans. While regional (*e.g.* Mid-Atlantic) pollinator seed mixes are commercially available and contain several native herbaceous species, the Service recommends initiating coordination among the Corps, the Service, and the USDA Natural Resources Conservation Service's Cape May Plant Material Center to develop a list of pollinator plants most genetically suitable for coastal New Jersey.

Corps response: The District will coordinate with USDA and the NJDEP to develop a list that contains pollinator plants that are suitable for the project area.

14) Plan construction activities to prevent colonization by invasive species of areas where construction activities have disturbed the soil. Stockpile topsoil and utilize low ground pressure equipment for post-construction replacement.

Corps response: The District will utilize best management practices to minimize colonization by invasive species in all aspects of the Project.

The Service submitted the Draft FWCA Section 2(b) Report dated February 10, 2016 to the NJDFW for review and comments. The NJDFW response letter is included in Appendix IV.

The NJDFW recommends:

1. Including the Atlantic sturgeon (*Acipenser oxyrhynchus*) in the list of federally listed marine species that may occur in or in the vicinity of the project area, requiring Section 7 consultation with NOAA - Protected Resources, Gloucester, Massachusetts (Attn. Mark Murray-Brown).

2. Providing the Corps' determination of no adverse effect on EFH to NOAA - Protected Resources.

Please keep this office informed of project meetings and schedules, environmental and wildlife investigations or studies, and formulation of any new Project alternatives. The Service strives to provide recommendations that promote long-term benefits for ecological resources and appreciates the opportunity to comment on the Corps' current design plans for implementation of Highland flood risk management activities. The Service also looks forward to providing further assistance to the Corps for minimizing impacts to area fish and wildlife resources and ensuring a successful completion of the proposed Project.

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APPENDIX I

New Jersey Species Being Evaluated for Possible Listing under the Endangered Species Act

New Jersey Species Being Evaluated for Possible Listing under the Endangered Species Act

Listing Actions: For species that are the subject of a petition, the U.S. Fish and Wildlife Service (Service) will ultimately issue findings (*i.e.*, determinations if listing is warranted). A prioritized 7-year schedule for issuing findings, and for taking listing actions on other species being evaluated for possible listing, is detailed in the Service's Listing Workplan, available at: https://www.fws.gov/endangered/what-we-do/listing-workplan.html.
For more information on the listing process, see the attached fact sheet and visit: http://www.fws.gov/endangered/what-we-do/listing-overview.html.

12-Month Findings: The Service has received petitions to list the following species under the Endangered Species Act (ESA). For each of these species, the Service has issued a positive "90-day" finding, which is our determination that substantial information exists in the petition and our files indicating that listing may be warranted. The next step will be a status review for each species, followed by a "12-month" finding, according to the schedule given in the Listing Workplan.

Golden-winged warbler (*Vermivora chrysoptera*)
Spotted turtle (*Clemmys guttata*)
Red-bellied turtle (Northern red bellied cooter) (*Pseudemys rubriventris*)
Wood turtle (*Glyptemys insculpta*)
Tricolored bat (*Perimyotis subflavus*)
Green floater (*Lasmigona subviridus*)
Monarch butterfly subspecies (*Danaus plexippus plexippus*)
Regal fritillary (*Speyeria idalia*)
Clubtail dragonfly (Septima's clubtail) (*Gomphus septima*)
Morse's little plain brown sedge (caddisfly) (*Lepidostoma morsei*)
Boykin's lobelia (*Lobelia boykinii*)
Mountain doll's daisy (*Boltonia montana*)

Discretionary Status Reviews: In addition to the petitioned actions listed above, the Service is evaluating the following species to determine if listing under the ESA is warranted. These species are also included in the 7-year Workplan.

- Little brown bat (*Myotis lucifugus*)
- Salt marsh sparrow (*Ammodramus caudacutus*)
- Frosted elfin (*Callophrys irus*)
- Eastern beard grass [arogos] skipper (*Atrytone arogos arogos*)
- Appalachian grizzled skipper (*Pyrgus wyandot*)

Protections and Planning: None of the above-listed species currently receive any substantive or procedural protection under the ESA, and the Service has not yet determined if listing any of these species is warranted. However, Federal action agencies and other project proponents should be aware that these species are being evaluated for possible listing. Particularly for projects with long planning horizons and/or long operational lives, proponents may wish to include these species in field surveys and/or impact assessments.

Species Proposed for Listing Whose Range Includes New Jersey

Under Section 7(a)(4) of the ESA, a Federal agency must confer with the Service on any agency action that is likely to jeopardize the continued existence of any species that the Service has proposed to be listed, or that is likely to result in the destruction or adverse modification of critical habitat proposed to be designated for such species.

- Black rail (*Laterallus jamaicensis*)

APPENDIX II

Birds of Conservation Concern in the Highlands, New Jersey Area

Common Name	Scientific Name	Season Found at Location
American Oystercatcher	*Haematopus palliatus*	Year-round
American Bittern	*Botaurus lentiginosus*	Breeding
Black Skimmer	*Rynchops niger*	Breeding
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Breeding
Blue-winged Warbler	*Vermivora pinus*	Breeding
Fox Sparrow	*Passerella iliaca*	Wintering
Great Shearwater	*Puffinus gravis*	Migrating
Gull-billed Tern	*Gelochelidon nilotica*	Breeding
Hudsonian Godwit	*Limosa haemastica*	Migrating
Least Bittern	*Ixobrychus exilis*	Breeding
Least Tern	*Sterna antillarum*	Breeding
Peregrine Falcon	*Falco peregrinus*	Wintering
Pied-billed Grebe	*Podilymbus podiceps*	Year-round
Prairie Warbler	*Dendroica discolor*	Breeding
Purple Sandpiper	*Calidris maritima*	Wintering
Red Knot	*Calidris canutus rufa*	Wintering
Rusty Blackbird	*Euphagus carolinus*	Wintering
Saltmarsh Sparrow	*Ammodramus caudacutus*	Breeding
Seaside Sparrow	*Ammodramus maritimus*	Year-round
Short-eared Owl	*Asio flammeus*	Wintering
Snowy Egret	*Egretta thula*	Breeding
Upland Sandpiper	*Bartramia longicauda*	Breeding
Wood Thrush	*Hylocichla mustelina*	Breeding
Worm Eating Warbler	*Helmitheros vermivorum*	Breeding

APPENDIX III

Essential Fish Habitat in the Highlands Study Area

Common Name	Scientific Name	Life Stage Found at Location
Atlantic Butterfish	*Peprilus triacanthus*	Larvae, Adult, Juvenile
Atlantic Cod	*Gadus morhua*	Adult
Atlantic Herring	*Clupea harengus*	Adult, Juvenile, Larvae
Bluefin Tuna	*Thunnus thynnus*	Juvenile
Bluefish	*Pomatomus saltatrix*	Adult, Juvenile
Clearnose Skate	*Raja eglanteria*	Adult, Eggs
Little Skate	*Leucoraja erinacea*	Juvenile
Longfin Inshore Squid	*Doryteuthis pealeii*	Juvenile, Adult, Eggs
Monkfish	*Lophius spp*	Eggs, Larvae
Red Hake	*Urophycis chuss*	Larvae, Juvenile, Eggs
Sandbar Shark	*Charcharinus plumbeus*	Juvenile, Adult
Scup	*Stemotomus chrysops*	Adult, Juvenile Larvae Eggs
Silver Hake	*Merluccius bilinearis*	Larvae, Juvenile, Eggs, Adult
Skipjack Tuna	*Katsuwonus pelamis*	Adult
Smooth Dogfish	*Mustelus canis*	Juvenile, Adult
Summer Flounder	*Paralichthys dentatus*	Adult, Juvenile, Larvae
Tiger Shark	*Galeocerdo cuvier*	Juvenile
Window Pane Flounder	*Scopthalmus aquosus*	Eggs, Larvae, Juvenile, Adult
Winter Flounder	*Pseudopleuronectes americanus*	Larvae, Eggs, Juvenile
Winter Skate	*Leucoraja ocellata*	Juvenile
Witch Flounder	*Glyptocephalus cynoglossus*	Larvae
Yellowtail Flounder	*Pleuronectes ferruginea*	Larvae Eggs

APPENDIX IV

Coordination with the New Jersey Division of Fish and Wildlife

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NATURAL AND HISTORIC RESOURCES
DIVISION OF FISH AND WILDLIFE
P.O. BOX 420; MAIL CODE: 501-03
TRENTON, NJ 08625-0420
TEL: (609) 292-2965; FAX: (609) 984-1414
VISIT OUR WEBSITE: WWW.NJFISHANDWILDLIFE.COM
David Golden, Director

PHIL MURPHY
Governor

SHEILA OLIVER
Lt. Governor

RAY BUKOWSKI
Acting Commissioner

November 19, 2019

Mr. Eric Schrading, Field Supervisor
United States Fish & Wildlife Service
4 E. Jimmie Leeds Road, Unit 4
Galloway, NJ 08205

Dear Mr. Schrading:

The NJ Division of Fish & Wildlife (DFW) would generally concur with the assessment and recommendations found in Draft Fish and Wildlife Coordination Act, Section 2b Report, addressing potential environmental impacts to fish and wildlife resources from the U.S. Army Corps of Engineers, New York District (Corps) *Raritan Bay and Sandy Hook Bay, Highlands, New Jersey, Coastal Storm Risk Management Feasibility Study*.

In the last paragraph of the section titled, FISH AND WILDLIFE RESOURCES, Federally Listed Species, NJDFW would propose that Atlantic Sturgeon should be included in the list of federally-listed marine species that may occur in the Project area. DFW would understand not including the whales at this location.

Also while DFW, would agree that NMFS should be contacted for coordination on impacts to EFH. DFW would suggest NOAA – Protected Resources (Mark Murray-Brown in Gloucester, Mass.) be contacted for coordination necessary to fulfill consultation requirements pursuant to Section 7(a)(2) of the ESA.

Under SERVICE COMMENTS AND RECOMMENDATIONS, #13 might read "Provide the Service with results of NMFS consultation concerning the Corp's determination of no adverse effect to EFH and NOAA – Protected Resources for determination of federally listed species under their purview.

If there are any questions concerning these comments, please feel free to contact Kelly Davis of my staff (908-236-2118). We hope this information is of service to you.

Sincerely,

David Golden, Director
NJ Division of Fish & Wildlife

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Land Use Regulation
Mail Code 501-02A, P.O. Box 420, Trenton, NJ 08625-0420
Fax # (609) 777-3656
www.state.nj.us/dep/landuse

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

November 17, 2014

Ms. Ann Marie Dilorenzo
Department of the Army
New York District Corps of Engineers
Jacob K. Javits Federal Building
New York, NY 01278-0090

Dear Ms. DiLorenzo:

This letter is intended to explain the method that the State of New Jersey has been using to determine the appropriate amount of mitigation required when wetlands are filled, or otherwise permanently altered by any project. For your information, our methodology is accepted by, and also used by our Federal partners (the Army Corps of Engineers Regulatory Branch, U.S. Fish and Wildlife Service, EPA, and National Marine Fisheries Service) when we undertake combined State/Federal mitigation projects.

I re-examined the Habitat Evaluation Procedures (HEP) to determine how, or if, it could be applied for the purposes of determining appropriate wetland mitigation. Although the U.S. Fish and Wildlife Service mentions that it could be used for determining "compensation" it focuses on wildlife species habitat and the replacement of "habitat units." While wetlands provide wildlife habitat, they provide many other functions and values that are not addressed or incorporated into the HEP evaluation process which is why it is not appropriate for use in this context.

You stated that you are required to make a functional assessment to determine how much mitigation is required. This is consistent with both State and Federal rules. However, after extensive field evaluation of several different functional assessment models, the Department and its Federal partners have determined that these models rely heavily on personal experience, even when properly applied (by a group and not an individual). Because we could not find a functional assessment model that provided consistent results, New Jersey moved to a ratio approach for determine adequate mitigation quantity as a surrogate for functional assessment.

The ratio method assumes that the loss of a wetland always merits at least one to one replacement, regardless of whether it is of "high" or "low" functional value. Additional mitigation, beyond the one to one, is almost always required and the additional amount depends upon the wetland mitigation method proposed, as described below:

Creation is defined as taking an area that never was a wetland, and creating wetlands. The Department requires mitigation at a 1:1 ratio for creating coastal wetlands and at a 2:1 ratio for freshwater wetlands. The difference relates to hydrology which is easier to achieve in a tidal system then in a freshwater system. Also, where creation has been attempted for freshwater wetlands, it is usually less than 50% successful. Thus we require twice the amount of mitigation assuming that at a minimum the project will replace the lost wetland resource.

Restoration (also known as re-establishment) means taking an area that does not currently meet the definition of a wetland, but that once did, and restoring it to wetland conditions. The Department requires mitigation at a 1:1 ratio for restoring tidal wetlands and at a 2:1 ratio for freshwater wetlands. Again, the

difference is that hydrology is the key to restoring these areas, and as discussed above under "creation" it is often easier to successfully reintroduce to an area tidal hydrology than freshwater hydrology.

Enhancement (also known as rehabilitation) is defined as taking an area of existing wetlands that is not fully functional and of "low" ecological value, and enhancing it to make it more functional and to raise the overall ecological value. Because wetlands may vary greatly on the need for enhancement, the credit given depends upon the amount of ecological improvement that is proposed for a specific wetland system. If you begin with a mostly functional wetland and proposed minor improvements (for example, hand removal of invasive species with supplemental planting), the required ratio may be 10:1 (that is, you will be required to enhance 10 acres for each acre of wetland impact). If you begin with a mostly dysfunctional wetland, and must alter hydrology, enrich soils and do extensive replanting in order to make it functional, the required ratio is 3:1. We have also given credit ratios between those two for activities that fall somewhere in between. The reason for ratios in excess of 1:1 is that filling completely removes a wetland from the ecosystem while enhancement improves an existing wetland but does not contribute to "no net loss" of wetlands.

Preservation means taking a wetland of high ecological value that is under imminent threat and preserving it by placing a permanent conservation restriction on it. The Department requires that 27 acres of wetlands be preserved for every acre of wetland impacts (27:1). The reason for this high ratio is that filling completely removes a wetland from the system, while preserving an existing wetland, regardless of how high value, does not contribute to "no net loss" of wetlands.

I hope this helps you to better understand the method that we have been using to determine how much mitigation is sufficient to replace wetlands lost to legal permitting, and why the Department is not satisfied with the use of HEP or with a proposed mitigation ratio for the South River project of less than 2:1. The State's method represents several years of experience and evaluation of how to make mitigation requirements consistent, predictable, and ecologically relevant.

Please note that you may also consult with the local Army Corps of Engineers - Regulatory Branch for further guidance on acceptable means of calculating the amount of mitigation necessary in order to satisfy the Department's specific mitigation requirements. If you have any additional questions, feel free to contact me at Susan.Lockwood@dep.nj.gov or at (609)984-0580.

Sincerely,

Susan D. Lockwood

Susan D. Lockwood
Environmental Specialist 4

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
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Environmental Analysis Branch

October 30, 2019

Mr. Eric Schrading
Field Office Supervisor
U.S. Fish and Wildlife Service
New Jersey Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, New Jersey 08205

Dear Mr. Schrading:

The U.S. Army Corps of Engineers, New York District (District) received your February 10, 2016 draft Section 2(b) Fish and Wildlife Coordination Act Report (FWCAR) for the Raritan Bay and Sandy Hook Bay, Highlands, New Jersey, Coastal Storm Risk Management Integrated Feasibility Study and Environmental Assessment (FR/EA). The District paused the study after you submitted the FWCAR due to public support and has now resumed the study. The proposed plan has not changed since you submitted the Draft FWCAR.

The District and the non-federal sponsor, New Jersey Department of Environmental Protection (NJDEP) are proposing approximately 10,636 linear ft. of raised bulkheads, raised ground surfaces, floodwalls, and reinforced dunes, tying into high ground (+10 ft. NAVD 88 to +12.4 ft. NAVD88) at each end along the shoreline of Highlands, NJ.

The draft FWCAR provided a comprehensive description of pertinent environmental resources in the project area, which will be helpful in the preparation of the final Highlands FR/EA.

The District provides the following responses to your comments as provided in the draft FWCAR:

1. Provided plans for earthen walkovers on reinforced dunes do not indicate any railings along the paved paths. The Service recommends that railings be installed to restrict access and prevent erosion of the dunes.

<u>District Response</u>

The design plans have hand railings on the walkovers.

2. Contact the NJDPF to determine Project applicability to the NNLRA.

District Response

The NNLRA covers lands owned or maintained by the State. Private entities currently own the lands. For construction, the borough of Highlands will purchase the land. The NNLRA is not applicable.

3. Consider incorporating impact of sea-level rise, and the effect of increased runoff rates and loss of flood plain (due to existing and proposed Raritan Bay and Raritan River watershed flood risk management projects), into projections of anticipated flood levels.

District Response

In section 3.2.1, the District predicted sea level to rise + 0.7 feet over the 50–year study period. The District incorporated sea level rise in the design of the project.

4. Review Project objectives and components to ensure they are in accord with objectives and goals set forth by recent Corps and HSRS initiatives promoting flood resiliency.

District Response

The Project goals for the Highland are: 1) Manage the risk of damages from flooding caused by storm surge due to coastal storms that impact Highlands through 2071. 2) Develop a resilient and sustainable risk management solution for Highlands through 2071. The District is in accord with some of the HSRS goals however, some of the goals are beyond the District's authority. The District's first goal aligns with the HSRS goals of: 1) supporting small businesses and revitalizing local economies, 2) building state and local capacity to plan for and implement long-term recovery and rebuilding, and 3) addressing insurance challenges, understanding, and affordability.

The Districts second goal aligns with the HSRS goals of: 1) promoting resilient rebuilding through innovative ideas and a thorough understanding of current and future risk and 2) ensuring a regionally coordinated, resilient approach to infrastructure investment. The HSRS goal of, improving data sharing between federal, state, and local officials, is part of every District project.

It is beyond the District's authority to align with the HSRS goal, addressing insurance challenges, understanding, and affordability.

5. Coordinate with NJDEP to determine the amount of wetland habitat within the Project area. If wetland habitat is determined likely to be impacted during Project construction, prepare a mitigation plan in accordance with NJDEP guidelines (Appendix C). Coordinate all mitigation planning with the Service and NJDEP to maximize benefits to wetlands and fish and wildlife habitats.

District Response

The District is coordinating with NJDEP to determine the amount if wetland habitat impacted. The District will mitigate the wetland impacts through a wetland bank. The District will coordinate mitigation planning with the Service and NJDEP.

6. Sub-surface marine sediments in and near the Project area are likely to contain high levels of contaminants. To prevent recontamination of benthic sediments and the marine environment, excavated sediments should be removed and transported to an appropriate disposal facility. Any sediment used for bulkheads or dune construction should come from an approved borrow area.

District Response

The District searched federal and state environmental databases for the presence of contaminated sediment. The District also conducted a series of subsurface sampling along the shoreline of Highlands. Both the database review and the sampling showed no concerns of contaminated sediment. However if during construction any contaminated sediments are found they will be removed and transported to an appropriate disposal facility.

7. Schedule any pile-driving and other loud construction or demolition activities outside of the piping plover nesting season of March 15 through August 31. If any construction activities are to take place during the nesting season further consultation with the NJFO is required. If construction causes noise levels to exceed 6 dBA above ambient in the vicinity of any nesting area, a Contingency Plan to monitor piping plover behavior may need to be developed. An integral part of the Contingency Plan is that the monitor is authorized to stop pile driving and demolition activities if it is determined that piping plover behavior is being affected by the increase in noise.

District Response

There are no reported piping plovers within the project alignment. Most of the project alignment is along existing bulkhead that does not provide beach habitat for piping plovers. The little beach areas that do exist, do not provide habitat for piping plovers. The beaches are very small, surrounded by homes or commercial buildings, and provide no foredune or washover areas. However, there are breeding piping plovers nearby on Sandy Hook beaches about a ¼ of a mile away for the project alignment. The use of vibratory pile driving may provide noise disturbance to the piping plovers. If present, piping plovers may be exposed to in air noise from pile driving, but would be expected to avoid the area around active impact pile driving and extraction construction activities. Pile driving activities would not occur at beaches that are designated as piping plover critical habitat. Current design level does not detail the type of pile driving, materials, or duration. During the Preconstruction Engineering and Design (PED) phase of the project, the District will coordinate with the Service in order to mitigate any noise impacts (dBA at nest cannot exceed 6 dBA higher than ambient

level). Construction of the project would temporarily increase ambient noise levels in and around the construction sites. Based on data presented in Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances (EPA, 1971[1]), the main phases of outdoor construction typically generate noise levels that range from 78 dBA to 89 dBA, approximately 50 feet from a construction site. Noise levels are estimated to decrease by approximately 6 dBA with every doubling of distance from a noise source. (It should be noted that the standard attenuation rate for point source noise (e.g. pile driving) is 6 dBA, and the standard attenuation rate for line source noise (e.g. traffic related noise) is 3 dBA. These standard attenuation rates do not take into account any reduction factors, such as soft site, vegetation, or atmospheric conditions. The threshold level for a significant noise impact is defined as a permanent increase in noise or prolonged periods of nighttime noise in noise-sensitive areas). Construction noise may at times be between 78 and 89 dBA outside the houses adjacent to the construction sites, depending on the type of construction activity that is conducted; noise levels inside the houses would be approximately 30 to 40 dBA lower. Such measures may include but are not limited to construction windows and noise dampening measures.

8. During the seabeach amaranth growing season of May 15 through November 30, survey Project area beaches within one week before the start of Project construction to identify habitat and/or presence. Continue to survey suitable habitat weekly. Use fence post and string to provide a 3-meter exclusion buffer around any identified plant.

District Response

The District will conduct seabeach amaranth surveys prior to the start of Project construction. Surveys in suitable habitat will continue weekly. The District will establish exclusion fencing according to Service protocol if any seabeach amaranth is identified within the Project area.

9. Utilize the Corp's Section 7(a)(1) authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of northern long-eared bat.

District Response

Within the Highlands Project authority, the District is not authorized to carry out conservation measures for the benefit of northern long-eared bats.

10. Avoid the removal of trees or shrubs during the migratory bird-nesting season of March 15 through July 31. If minimal suitable habit is to be disturbed, a visual survey to determine presence or absence of active bird nests may be immediately precede the planned disturbance, which may proceed if absence of nesting migratory birds is confirmed.

[1] U.S. Environmental Protection Agency. 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances

District Response

The District will plan to remove trees and shrubs during the non-breeding season however, it is anticipated that low amount of trees will need to be removed. If trees are to be removed during the bird-breeding season, surveys will be conducted for nesting migratory birds.

11. Coordinate selection of staging areas and construction access sites with the Service to minimize impacts to wildlife habitat.

District Response

The District welcomes the Service's recommendations for staging and construction access. The District will identify staging areas and access sites that minimize impacts to wildlife habitat.

12. Coordinate with the ENSP to verify the presence or absence of State-listed species in the project area. If present, institute measures (as recommended by ENSP) to avoid adverse impacts on these species.

District Response

The District has coordinated with NJDEP ENSP. The ENSP identified silver-haired bat hibernacula near the project area. The ENSP recommended tree clearing in the winter months.

13. Provide the Service with results of NMFS consultation concerning the Corp's determination of no adverse effect to EFH.

District Response

When completed, the District will provide the Service the results of the NMFS consultation pertaining to EFH.

14. To the maximum extent possible, develop construction plans that provide for the enhancement of pollinator habitat.

District Response

The District will develop construction plans that provide for the enhancement of pollinator habitat to the maximum extent possible. Plans currently call for vegetation to be planted on the sand covered bulkheads. When and where appropriate pollinator habitat will be created.

15. Include native pollinator seed mixes into revegetation plans. While regional *(e.g.* Mid-Atlantic) pollinator seed mixes are commercially available and contain several native herbaceous species, the Service recommends initiating coordination among the Corps, the Service, and the USDA Natural Resources Conservation Service's Cape

May Plant Material Center to develop a list of pollinator plants most genetically suitable for coastal New Jersey.

District Response

The District will coordinate with USDA and the NJDEP to develop a list that contains pollinator plants that are suitable for the Project area.

16. Plan construction activities to prevent colonization by invasive species of areas where construction activities have disturbed the soil. Stockpile topsoil and utilize low ground pressure equipment for post-construction replacement.

District Response

The District will utilize best management practices to minimize colonization by invasive species in all aspects of the Project.

If you have any questions or comments please contact Mr. Matthew Voisine, Biologist at (917)-790-8718. The District looks forward to continued coordination with you on this project.

Sincerely,

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Peter Weppler
Chief, Environmental Analysis Branch