APPENDIX B

UNITED STATES FISH AND WILDLIFE COORDINATION ACT COORDINATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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IN REPLY REFER TO:
15-CPA-0086

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: Ann Marie Dilorenzo

APR 3 2015

Reference: Planning Aid Letter for the Port Monmouth Hurricane and Storm Damage Reduction Project – Phase II, Middletown Township, Monmouth County, New Jersey

Dear Mr. Weppler,

The U.S. Fish and Wildlife Service (Service) provides this Planning Aid Letter (PAL) as a supplement to the Service's 1999 Fish and Wildlife Coordination Act (48 Stat. 401; U.S.C. 661 *et seq.*) (FWCA) Section 2(b) report to the U.S. Army Corps of Engineers, New York District (Corps) titled *Assessment of the Raritan Bay and Sandy Hook Bay Combined Flood Control and Shoreline Protection Project, Port Monmouth, New Jersey* (1999 FWCA Section 2(b) report). This PAL addresses activities pertaining to the Corps' proposed *Port Monmouth Hurricane and Storm Damage Reduction Project – Phase II* (Project), requested by the Corps due to modifications to Project design since issuance of the 1999 FWCA Section 2(b) report. This PAL provides general and specific comments on the Project in accordance with a fiscal year 2015 Scope of Work (SOW) and interagency agreement pursuant to the FWCA. Comments provided in this PAL are based on review of information and documents provided to the Service by the Corps, site visits, field notes, site photographs, maps, internet-based data sets, and analysis of Geographic Information Systems data sets (ArcGIS® version 10.0). As identified in our SOW, this PAL assists the Corps in formulating and evaluating the feasibility of implementing flood risk management measures within the Project area.

AUTHORITY

The Corps and the Service coordinate during project planning to conserve, protect, and enhance fish, wildlife, and plants and their habitats. Legislation relevant to natural resource protection for this project includes the FWCA, the Endangered Species Act of 1973 (87 Stat. 884, as amended; (16 U.S.C. 15.31 *et seq.*) (ESA), the National Environmental Policy Act of 1973 (83 Stat. 852; as amended, 42 U.S.C. 4321 *et seq.*) (NEPA), the Migratory Bird Treaty Act (40 Stat. 755; 16 U.S.C. 703-712) (MBTA), and the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250 as amended; 16 U.S.C. 668-668d). Comments provided are consistent with the intent of the

Service's Mitigation Policy (Federal Resister, Vol. 46, No. 15, Jan. 23, 1981). In addition, several Executive Orders have also established guidance to Federal agencies, including the Service, relative to fish and wildlife protection and conservation. For projects authorized under Water Resource Development Act (33 U.S.C. 2201 *et seq.*), the ESA and the FWCA represent the primary authorities under which the Service cooperates and coordinates with the Corps. The following comments constitute planning aid and do not address all Service concerns for fish and wildlife resources and do not preclude separate review and comments by the Service pursuant to the December 22, 1993 Memorandum of Agreement among the U.S. Environmental Protection Agency (EPA), New Jersey Department of Environmental Protection (NJDEP), and the Service, if project implementation requires a permit from the NJDEP pursuant to the New Jersey Freshwater Wetlands Protection Act (N.J.S.A. 13:9B *et seq.*); nor do they preclude comments or recommendations on any documents prepared pursuant to NEPA. Any NEPA document (Environmental Assessment or Environmental Impact Statement) will be prepared in accordance with the Council on Environmental Quality's regulations for implementing NEPA (40 CFR Parts 1500-1508), and Corps regulations and policies.

INTRODUCTION

The *Raritan Bay and Sandy Hook Bay Combined Flood Control and Shoreline Protection Project, Port Monmouth, New Jersey* was developed by the Corps to reduce the threat to personal safety, and damage and destruction to low-lying private, commercial, and public properties in the Port Monmouth area during periods of coastal flooding, which has historically occurred in the area due to tidal flooding and storm surges and has progressively worsened in recent years due to the loss of protective beaches and increased urbanization (U.S. Army Corps of Engineers 2000). It was authorized under House Document No. 464 of the 87th Congress (1962-2nd Session), and Section101 of the Water Resources Development Act of 2000 (Public Law 106-541), as amended. The Hurricane Sandy Disaster Relief Appropriations Act 2013 (Public Law 113-2) (HSDRAA) gave the Corps further authority and funding to complete this previously authorized but uncompleted project. Subsequent to HSDRAA, the proposed project was divided into two components: 1) Phase I - Shore Protection; and 2) Phase II - Flood Risk Management. Phase I activities included beach nourishment and groin construction. Phase I was completed in 2014 with Service comments provided in Service FWCA Supplemental Letters of August 14, 2006; April 30, 2008; and January 12, 2011. The focus this PAL is on Phase II project components. Service comments are provided to minimize the adverse environmental effects of the Project to the maximum extent possible, and to advise the Corps on appropriate and practicable measures to compensate for any unavoidable impacts that are included in the proposed plan. The information presented documents the fish and wildlife resources in the Project area, provides a preliminary assessment of the effects of the proposed Project on fish and wildlife resources, and provides recommendations to mitigate adverse impacts to those resources.

PROJECT DESCRIPTION

Activities associated with the proposed Project are designed to relieve storm surge related flooding to the area of Port Monmouth between Pews and Compton Creeks inland from Raritan Bay to State Route 36 (SR-36). Primary elements of the proposed Project include the construction of a total of approximately 7,070 feet of earthen levees and 3,585 feet of floodwalls;

a storm surge gate across Pew's Creek; three road closure gates; an interior drainage ditch with associated pump station; and the raising of a short section of roadway (Fig. 1). The construction will result in the loss of approximately 14 acres of wetlands.

Project construction will be completed under five separate contracts (U.S. Army Corps of Engineers 2014):

- Contract 1 – Wetland mitigation site. Project plans call for a 12.8 acre wetland mitigation site on Middleton Township property at a location generally along the eastern edge of the Pews Creek salt marsh between Lydia Place and Walada Avenue (Fig. 2 and Fig. 3), although alternative locations are being evaluated (Dilorenzo pers. comm. 2014).
- Contract 2 – Pews Creek flood surge gate. Construction of: a 40-foot wide by 21-foot high storm surge gate at Pews Creek approximately 250 feet south of the Port Monmouth Road bridge; an adjacent 120 cubic feet per second pump station; and an adjoining 150-foot floodwall.
- Contract 3 – Port Monmouth Road floodwall. Construction of: a 2,668-foot floodwall along Port Monmouth Road; a 290-foot levee between the storm surge gate and the Port Monmouth Road bridge; and a 30-foot wide by 8-foot high road closure gate on Old Port Monmouth Road. Old Port Monmouth Road provides access to Monmouth Cove Marina (Monmouth County Park System), located at the Pews Creek inlet to Raritan Bay. In response to public safety concerns about obstructed traffic views, recent design changes have proposed relocating this road closure gate further away from the Port Monmouth Road intersection. The new road closure gate alignment will be nearer to both the marina and the Raritan Bay shore (Fig. 4) (Dilorenzo pers. comm. 2014). This new configuration will necessitate the removal of as much as 1800 linear feet of forest and scrub-shrub habitat, the loss of which was not included in previous resource evaluations. The new design also extends the east terminus of the floodwall north 289 feet through a wooded area between Port Monmouth Road and the beach dune crest.
- Contract 4 – South portion of Compton Creek levee. Construction of a 3,410-foot levee extending generally north from SR-36 to Broadway along the Compton Creek marsh's western edge and a 1,250-foot floodwall running parallel to SR-36 extending west from the levee's southern terminus to a point where floodwall height equals surface elevation. Contract 4 also includes road closure gates to provide access across the levee at Broadway and at Campbell Avenue, which will be 40 feet wide by 8 feet high and 40 feet wide by 9 feet high, respectively.
- Contract 5 – North portion of Compton Creek levee. This segment of levee will extend for 3,300 feet from the Broadway road closure gate of levee along the Compton Creek marsh to the Raritan Bay shoreline dune. The dune was constructed to a crest of +16 feet National Geodetic Vertical Datum (NGVD) during Phase I beach nourishment. A section of Port Monmouth Road up to 550 feet in length will be raised to an elevation that at least matches the Compton Creek levee height where it crosses the road between the near-shore dune and the marsh area to the south.

The Project levees and floodwalls will be constructed to a maximum height of +14 NGVD. Levees will have a base width of 60 feet. Floodwalls will have a width of 1.5 feet. The Compton Creek levee will be bordered by a 10-foot wide interior drainage ditch. This ditch is designed to collect surface runoff from approximately 150 acres of the Compton Creek

watershed that will be isolated behind the levee. The interior drainage ditch will have 4 primary and 11 secondary outlet structures installed at locations to be determined. During periods when road closure gates are closed, a 60 cubic feet per second pump station will discharge water from the interior drainage ditch into Compton Creek (to be completed under Contract 5). Both floodwalls and levees (including areas with levee and drainage ditches) will be bordered on both sides by 15-foot wide vegetation free zones (grasses only) and 10-foot wide temporary construction easements.

PROJECT AREA

The community of Port Monmouth is located on the south shore of Raritan Bay. According to the 2010 United States Census, there were 3,818 people and 1,368 households within the approximately 1.4 square mile area designated as Port Monmouth. Approximately one half of this area (0.76 square miles, or 480 acres) lies within the project area, which is bordered roughly by Port Monmouth Road along the Raritan Bay shoreline on the north, SR-36 on the south, the Compton Creek tidal marsh on the east, and a 1970s era Corps' levee along Pews Creek to the west. A portion of the project area lies to the bay-shore side of Port Monmouth Road, including most of the Port Monmouth Road floodwall and about 200 feet of the Compton Creek levee. Surface elevation of developed areas within the project area is generally less than +10 NGVD. The levee bordering Pews Creek was constructed as part of the *Raritan Bay and Sandy Hook Bay Beach Erosion and Hurricane Project, NJ*, for flood risk reduction to the adjacent Borough of Keansburg. The Keansburg and East Keansburg beach fill was completed in December 1969, and the adjoining Pews Creek levee in June 1973 (Morang 2007).

The Pews Creek watershed currently encompasses approximately 1.1 square miles, of which about half is within the project area and half above SR-36. Of the 480 acres within the project area, approximately 330 acres lie in the Pews Creek watershed and 150 acres in the Compton Creek watershed. Surface runoff from the entire Pews Creek watershed flows through the project area and will discharge through the storm surge gate. The Compton Creek watershed encompasses approximately 6.4 square miles; however, no upstream runoff from the Compton Creek watershed will enter the project area. Compton Creek surface runoff within the project area will discharge into the levee's interior drainage ditch and be pumped into Compton Creek. During periods when flooding necessitates activation of road closure gates along Compton Creek, access into the portion of Port Monmouth within the project area will be available from SR-36 via Main Street or Wilson Avenue.

ENVIRONMENTAL CONDITIONS

Wetlands

Approximately one half of the project area is mapped as wetlands. Of the approximately 225 acres of wetlands, about 215 acres are classified as persistent emergent intertidal estuarine wetlands, or salt marsh. About 10 acres are mapped as freshwater wetlands, almost all of which have been filled or disturbed. The salt marsh consists of low emergent, high emergent, and transition zones between low and high marsh. Low emergent marsh areas are dominated by tall form smooth cordgrass *(Spartina alterniflora)*, receiving near-daily tidal inundation. High emergent marsh areas are dominated by saltmeadow cordgrass *(Spartina patens)*, spike grass

(Distichlis spicata), and short form *Spartina alterniflora,* receiving tidal inundation during spring tides and storm tides. There are approximately 55 acres of both monoculture and interspersed *Phragmites* present, especially near terrestrial transition zones or at locations where excavated sediment from ditching provides suitable habitat.

Approximately 3 percent of the project area (13.6 acres) consists of estuarine and palustrine scrub-shrub wetlands. Estuarine scrub-shrub wetlands are dominated by marsh elder (*Iva frutescens*), groundsel tree (*Baccharis halimifolia*), and common blackberry (*Rubus allegheniensis*). Palustrine scrub-shrub wetlands are dominated by multiflora rose (*Rosa multiflora*), common blackberry, and southern arrowwood (*Viburnum dentatum*). In addition, smaller areas of scrub-shrub / herbaceous wetlands (5.2 acres) are vegetated by shrub species of arrowwood, elderberry, blackberry and herbaceous species including, royal fern (*Osmunda regalis*), mannagrass (*Glyceria* spp.), panic grasses (*Panicum* spp.), and sensitive fern (*Onoclea sensibilis*).

The Corp's Keansburg levee isolated as much as 0.3 square miles (200 acres) of the Pews Creek watershed from draining into Pews Creek, including approximately 65 acres of tidal marsh. Prior to the levee's construction this wetland area constituted the western portion of the Pews Creek tidal salt marsh. It appears that much of the isolated drainage is within a residential area connected to a storm sewer system that transports runoff into an adjacent watershed to the west. The remainder of the runoff flows into the remnants of the tidal marsh, which no longer receives tidal flow. Current interior drainage of this area is through the levee via one-way drainage structures into Pews Creek. This alteration to the wetland hydrology has resulted in the entire wetland behind the levee transforming into a dense stand of invasive *Phragmites.*

Wetland Mitigation

The Corps proposed 12.8 acre wetland mitigation site along the eastern edge of the Pews Creek salt marsh contains high quality fish and wildlife habitat. This location was selected by the Corps due to the presence of *Phragmites* in the area. However the area also includes salt marsh flora and native shrubs, which provide important nesting and foraging habitat for migratory birds. Much of the *Phragmites* in this area appears patchy and may be native *Phragmites australis americanus* species instead of the invasive *Phragmites australis australis. Phragmites* patches (either native or invasive) are critical nesting habitat for some species (especially wading birds) and can also provide a buffer from human disturbance (Parsons 2003), an important consideration as the site is adjacent to a public ballpark. Monocultures of invasive *Phragmites* are not utilized extensively by nesting birds (Chambers *et al.* 2012) and would be more ecologically suitable as mitigation sites. Large monocultures of invasive *Phragmites* are present at locations in the area and are better suited for wetland mitigation.

Following submission of the Service's 1999 FWCA 2(b) report to the Corps, there was considerable disagreement between the Department of Defense (DOD) and the Department of Interior (DOI) concerning appropriate mitigation guidelines and compensation requirements for wetlands lost to Project implementation. Negotiations on this issue resulted in a 2003 proposal by DOD to include the Service in Port Monmouth's Pre-Construction Engineering and Design phase. The DOI concurred with the proposal, concluding that Service involvement in planning would facilitate the Corps in minimizing impacts to wetlands and fish and wildlife habitats while

fulfilling its mandates for flood risk management. At the time of the Service's 1999 FWCA 2(b) report, the former salt marsh isolated behind the Keansburg levee was identified as the mitigation study area and appears to have been the proposed location for the wetland mitigation (U.S. Fish and Wildlife Service 1999). The Service has no record of being consulted by the Corps, as per the 2003 agreement, in the selection of the currently proposed mitigation site within the Pews Creek salt marsh. The Service does not agree with placement of the wetland mitigation site in this location.

In the planning stages for the Corp's *Raritan Bay and Sandy Hook Bay Hurricane and Storm Damage Reduction Project, Port Monmouth, New Jersey*, mitigation for lost or impaired wetlands was calculated based exclusively on Habitat Evaluation Procedures (HEP) modeling. The Service no longer utilizes the HEP model. The Corp's non-federal partner, NJDEP, determined that HEP it is not an appropriate tool for calculating wetland mitigation because it may not adequately account for wildlife functions and values. The Corps was advised by NJDEP in a November 17, 2014 letter (Appendix A) that because functional assessment models such as HEP do not provide consistent results, NJDEP now uses a ratio approach to calculate mitigation for lost wetlands. The ratio is based on the type of mitigation method proposed: creation; restoration; enhancement; or preservation. Corps planning documents indicate the mitigation will *create* 12.8 acres of wetland habitat (U.S. Army Corps of Engineers 2014). As described by NJDEP, mitigation activities proposed by the Corps, such as converting *Phragmites* to salt marsh, would be classified as wetland enhancement and require a mitigation ratio of at least 3:1. It is the Corps' contention that based on cost analysis, it will commit to only a 1:1 mitigation ratio and that any amount of exceedance is the responsibility of the non-federal partner (Dilorenzo pers. com. 2015).

Vernal Pools

Vernal pools are confined depressions (natural or man-made) without a permanently flowing outlet, ponded for at least two continuous months between March and September of a normal rainfall year, and devoid of breeding fish populations. These temporary wetlands provide habitats for many species of amphibians, several of which breed exclusively in vernal pools (*i.e.*, obligates), as well as a multitude of reptiles, insects, plants, and other wildlife. Vernal pools are protected pursuant to the New Jersey Freshwater Wetlands Protection Act, which applies to all General Permit Authorizations [N.J.A.C. 7:7A-4.3(b)(16)]. There is New Jersey Division of Fish and Wildlife (NJDFW)-verified potential vernal pool habitat located in forested and scrub-shrub delineated freshwater wetlands along Compton Creek and its tributaries just outside the project area south of SR-36 (NJDEP 2015a). At one location, the designated potential vernal habitat extends across SR-36 into the extreme southeast corner of the project area. The Corps should avoid or minimize impacts to vernal pools; coordinate project activities with the NJDFW; and initiate any project activities that would impact vernal pools only after receiving the pertinent State permit authorizations.

Environmental Contaminants

There are no known contaminated sites in the project area, but there are three known contaminated sites within the Pews Creek watershed. One of these is identified as "Spy House Harbor," located stream-side in the tidal zone at the Monmouth Cove Marina, approximately

800 feet downstream from the proposed location of the Pews Creek storm gate. The other two sites are at residential locations upstream from the project area over 0.3 mile from Pews Creek. There are 20 known contaminated sites within the Compton Creek watershed, eight of which are within approximately 500 feet of a tributary. The Project's levees and floodwalls will prevent Compton Creek runoff into the project area.

Toxic contamination accumulating in fish tissues has resulted in consumption advisories for fish taken in in Raritan Bay and its estuaries. Current consumption advisories for gamefish that could be expected to be present in Pews Creek and Compton Creek include: one meal per month of winter flounder (*Pseudopleuronectes americanus*); one meal per week of summer flounder (*Paralichthys dentatus*); four meals per year of American eel (*Anguilla rostrata*); and one meal of seven crabs per month of blue crab (*Callinectes sapidus*) (NJDEP 2013). While historical and present discharge of toxics led the Hudson-Raritan Estuary to be ranked highest overall among estuaries sampled in contaminant concentration (USFWS 1997), according to the EPA, there has been an improving trend in contaminant level for both water and fish tissue in the Raritan Bay estuary (U.S. Environmental Protection Agency 2008).

Climate Change and Sea Level Rise

The term "climate change" refers to a change in the mean or variability of one or more measures of climate (*e.g.*, temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (Intergovernmental Panel on Climate Change [IPCC] 2007). Extensive analyses of global average surface air temperature, the most widely used measure of change, clearly indicate that warming of the global climate system has occurred over the past several decades (IPCC 2013). One very likely outcome of climate change is a rise in sea level. Measurements of global mean sea level indicate sea level has risen at an average rate of 1.7 mm per year from 1901 to 2010; at a faster rate of 3.2 mm per year from 1993 to 2010; and will exceed that rate during the 21st century (IPCC 2013). Many models of climate change project a shift to more intense individual storms and fewer weak storms in the North Atlantic Basin.

Long-term effects of climate change may impact coastal areas such as Port Monmouth. A likely consequence of sea level rise is an increase in high tide levels, especially given that seasonal high tides in Port Monmouth may cover low lying streets. Project storm gates are currently planned to be utilized only during storm events, but increasing tides over time may lead to increased use of storm gates. High tides are an important function of estuarine ecosystems and limiting high tides would likely result in adverse effects to Pews Creek fish and wildlife resources. Given the long lifespan of the Project, the Service believes Corps should consider the possible long-term effects of climate change and sea level rise to project area fish and wildlife resources and project components.

FISH AND WILDLIFE RESOURCES

Federally Listed Species and Species Proposed for Listing

Piping Plover

The federally listed (threatened) piping plover (*Charadrius melodus*) may occur within or near the project area as the recent beach nourishment completed as part of Phase I may have created suitable habitat for piping plover nesting. Piping plovers are present on the New Jersey shore during the breeding season, generally between March 15 and August 31. There are known occurrences of the piping plover within 10 miles of the project area, in Sandy Hook and Sea Bright Borough. For piping plovers in New Jersey, the Service generally recommends not conducting any proposed construction activities within 100 meters (333 feet) of occupied piping plover habitat during the nesting season, March 15 through August 15. This distance may be greater if noise or other disturbances interfere with the birds' ability to reproduce or forage successfully. When unfledged chicks are present, May 15 through August 15, vehicles and motorized construction equipment are usually prohibited within 1,000 meters (3,330 feet) of chicks unless an intensive monitoring program, approved by the Service, is in place. With monitoring, the vehicle-free area may be reduced by the Service depending on the observed mobility of the chicks. The Service should be provided with a schedule for any proposed on-shore construction activities. If project activities are planned during the restricted season, further consultation pursuant to Section 7 of the ESA will be required to avoid adverse effects to the piping plover. For more information, please refer to the enclosed narrative on the biology and threats to piping plover (Appendix B).

Seabeach Amaranth

The federally listed (threatened) plant seabeach amaranth *(Amaranthus pumilus)* is known to occur in the project area. If any work in beach, dune, or intertidal areas is to take place during the seabeach amaranth growing season (May 15 through November 30), the Service generally recommends surveying the entire project area within the week before the start of work. Sections of the project area where work has not yet begun should be re-surveyed each week. The Service recommends installing string-and-post fencing to allow a 3-meter buffer around each plant or group of plants. Fencing should be marked with flagging and signs. No intrusions (including personnel, equipment, or materials) should be allowed within fenced areas. Coordinate surveys and fencing with the Service before and during the construction period. For more information, please refer to the enclosed narrative on the biology and threats to seabeach amaranth (Appendix B).

Red Knot

The Project 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. Large flocks of red knots arrive at stopover areas along the Delaware Bay and New Jersey's Atlantic coast each spring with depleted energy reserves and must quickly rebuild their body fat to complete their

migration to Arctic breeding areas. During their brief 10 to 14-day spring stay in the mid-Atlantic, red knots can nearly double their body weight. Red knots feed on invertebrates, especially small clams, mussels, and snails, but also crustaceans, marine worms, and horseshoe crab eggs. Few red knots have been observed on beaches near the Project area and those sightings have occurred primarily during the fall migration season from August through November. For more information, please refer to the enclosed narrative on the biology and threats to red knot (Appendix B).

Roseate Tern

The project area is within the range of the roseate tern (*Sterna dougallii*), which is federally listed as endangered pursuant to the ESA in locations north from North Carolina. The roseate tern is a marine bird that nests on rocky offshore islands, barrier beaches, and salt marsh islands along the Atlantic coast from Long Island to Nova Scotia, Canada. They are thought to winter in the southern Caribbean islands and northeastern South America. While roseate terns were last recorded breeding in New Jersey in the 1970s, individuals are occasionally sighted along the New Jersey coast during spring and fall migrations. For more information, please refer to the enclosed narrative on the biology and threats to roseate tern (Appendix B).

Northern Long-eared Bat

The proposed Project is located within the summer breeding range of the northern long-eared bat (*Myotis septentrionalis*). On October 2, 2013, the Service proposed to list the northern long-eared bat as an endangered species (78 FR 61046). The Service has not yet made a final listing decision regarding the status of the northern long-eared bat (*e.g.*, not warranted, threatened, or endangered); however, we have determined that if threatened status is warranted, a species-specific rule under section 4(d) of the ESA may be advisable. If the result of our final listing determination concludes that threatened species status is appropriate for the northern long-eared bat, we intend to finalize the species-specific 4(d) rule with the final listing rule. Under section 4(d) of the ESA, the Secretary may publish a species-specific rule that modifies the standard protections for threatened species with prohibitions and exceptions tailored to the conservation of the species that are determined to be necessary and advisable. The proposed rule under section 4(d) of the ESA will not remove, or alter in any way, the consultation requirements under section 7 of the ESA.

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. For the protection of northern long-eared bat, the Service currently recommends a seasonal restriction for tree removal from April 1 through September 30 in areas of potential habitat. If tree clearing is proposed during the restricted season, a survey to confirm presence or absence of northern long-eared bat in the Project area. For more information, please refer to the enclosed narrative on the biology and threats to northern long-eared bat (Appendix B).

The Service provides the above determination with respect to federally listed or proposed threatened or endangered flora and fauna under Service jurisdiction only. The proposed project

may affect the marine environment of Raritan Bay. Included among the federally-listed marine species that may occur in the project area: leatherback sea turtle (*Dermochelys coriacea*); Atlantic (=Kemp's) ridley sea turtle (*Lepidochelys kempii*); and loggerhead sea turtle (*Caretta caretta*). Principal responsibility for threatened and endangered marine species is vested with the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS). Therefore, continued coordination with the NMFS is necessary to fulfill consultation requirements pursuant to Section 7(a)(2) of the ESA. In addition, the Corps should coordinate with the NMFS regarding potential adverse effects on any portion of the Project area designated as Essential Fish Habitat (EFH) pursuant to Section 305 (b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (P. L. 94-265). Please contact the NMFS at the following address:

Ms. Karen Greene
National Marine Fisheries Service
Habitat Conservation Division
Sandy Hook Laboratory
Highlands, New Jersey 07732
(732) 872-3023

Species under Review for Federal Listing

The Service is evaluating the little brown bat (*Myotis lucifugus*), tri-colored bat (*Perimyotis subflavus*), monarch butterfly (*Danaus plexippus plexippus*), and American eel (*Anguilla rostrata*) to determine if listing under the ESA is warranted. These species may be present in the project area. 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.

State-Listed Species and Species Protected by Other Laws

Bald Eagle

Nesting and foraging habitat for the bald eagle (*Haliaeetus leucocephalus*) may occur in the Project's area. The bald eagle was removed from the Federal List of Endangered and Threatened Wildlife effective August 8, 2007. The bald eagle continues to be protected under the BGEPA and MBTA. The bald eagle also remains a State-listed species under the New Jersey Endangered and Nongame Species Conservation Act (N.J.S.A. 23:2A *et seq.*) (NJENSPCA). These Federal and State laws prohibit take of bald eagles.

A known nest site of the bald eagle is located within 7 miles of the project site and suitable foraging areas exist throughout the proposed project area. Bald eagles occur in New Jersey throughout the year and have been expanding their range in recent years. For more information, please refer to the enclosed narrative on the biology and threats to bald eagles (Appendix B). For the continued protection of bald eagles, and to ensure compliance with Federal and State laws,

the Service recommends minimizing impacts on bald eagles in accordance with the National Bald Eagle Management Guidelines and all applicable State regulations. Links to State agencies and the Guidelines are available on the Service's New Jersey Field Office (NJFO) web site at http://www.fws.gov/northeast/ njfieldoffice/endangered.

State-listed Species

Other avian species documented in the project area afforded protection under the NJENSPCA include the State-listed (endangered) American bittern (*Botaurus lentiginosus*), black skimmer (*Rynchops niger*), peregrine falcon (*Falco peregrinus*), pied-billed grebe (*Podilymbus podiceps*), short-eared owl (*Asio flammeus*) and upland sandpiper (*Bartramia longicauda*). State-listed (threatened) species occurring in the project area include osprey (*Pandion haliaetus*) and black-crowned night heron (*Nycticorax nycticorax*) (NJDEP 2015a). Please contact the NJDFW Endangered and Nongame Species Program (ENSP) for additional information regarding State-listed species.

Migratory Avifauna

There are approximately 80 species of nesting migratory birds in the general area of the proposed project site (Niles *et al.* 2001). The MBTA as amended, prohibits taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. Neither the MBTA nor its implementing regulations at 50 CFR Part 21 provide for permitting of "incidental take" of migratory birds. While destruction of unoccupied nests is allowable pursuant to the MBTA, take of nests with eggs and unfledged chicks is prohibited. Be advised that, according to the NJDFW Guidance Manual for the Protection of Fish and Wildlife Resources dated June 2006, the appropriate timing restriction to protect nesting migratory birds from tree or shrub/scrub removal is March 15 to July 31.

The recently proposed realignment plans for the Port Monmouth Road floodwall and Old Port Monmouth Road closure gate now includes a 289-foot long floodwall to be constructed between Port Monmouth Road and the Raritan Bay shore dune. Floodwall construction at this location will negatively impact project area wildlife resources by clearing a 50-foot wide path (including construction easement) through forested habitat and installing a 14-foot high floodwall that will fragment approximately 15 acres of contiguous forest. In addition to bisecting this wooded area, the proposed floodwall realignment will impact as much 1800 feet of forested and scrub-shrub habitat, critical to nesting and foraging migratory birds and other terrestrial wildlife.

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 2008* 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 our highest conservation priorities. A total of 27 Birds of Conservation Concern have been identified to occur seasonally or year-round within the project area (Table 1). A list of over 120 avifauna species of special interest that may occur in the project area is presented in Table 2.

Pollinators

Pollinators contribute substantially to the economy of the United States and are vital in maintaining healthy ecosystems, yet severe losses to pollinator species from the environment, including 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 (United States Department of Agriculture (USDA) 2015). The number of honey bee colonies declined about 50 percent from 1940s levels; and 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).

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).

With the potential listing of the monarch butterfly for protections under the ESA, the Service has a mandate to increase monarch butterfly habitat (milkweed and foraging food sources) by 100,000 acres, with a goal of 10,000 acres of new habitat in Region 5 (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. Within the Project area, the "vegetation free" zones (adjacent to levees, floodwalls, and interior drainage ditches) and ground surface of the levees comprise a total of approximately 25 acres that provide excellent opportunities to plant herbaceous vegetation that support pollinator species.

FISHERIES

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 EFH. The estuarine waters of Raritan Bay, such as Pews Creek and Compton Creek, are classified as EFH for winter flounder, summer flounder, windowpane flounder (*Scophthalmus aquosus*), Atlantic sea herring *(Clupea harengus)*, bluefish (*Pomatomus saltatrix*), Atlantic butterfish (*Peprilus triacanthus*), scup (*Stenotomus chrysops*), black sea bass (*Centropristus striata*), and red hake (*Urophycis tenuis*) (NMFS 2000).

Non-managed fish may have little commercial or sport fishing value, but are important components of estuarine ecology and provide forage for area fish and wildlife. Species likely to be present in the project area 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*), hummichog (*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 (*Musil cephalus*), striped searobin (*Prionotus evolans*), tautog (*Tautoga onitis*), threespine stickleback (*Gasterosteus aculeatus*), tidewater silversides (*Menidia beryllina*), white perch (*Marone americana*), white mullet (*Mugil curema*), and weakfish (*Cynoscion regalis*) (Lynch *et al.* 1977; NJDEP 1979; USFWS 1997).

The NMFS has indicated that, pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265, as amended), the Corps is required to provide an updated EFH assessment for the proposed project modifications (Greene, pers. comm. 2014).

BEACH MANAGEMENT PLAN

To ensure protection of listed species, the Corps and the NJDEP require that towns and public lands receiving beach nourishment prepare a beach management plan (BMP) (USFWS 2006). BMPs are developed through coordination between the Service, ENSP, the Corps, and local municipalities to promote the protection and recovery of listed species and the enhancement of their habitat while accommodating recreational uses consistent with species protections. The Port Monmouth beach nourishment was completed in 2014 as part of the *Raritan Bay and Sandy Hook Bay Combined Flood Control and Shoreline Protection Project, Port Monmouth, New Jersey - Phase I.* Other neighboring Raritan Bay communities that have either received beach nourishment or have plans to receive beach nourishment as part of the *Raritan Bay and Sandy Hook Bay Beach Erosion and Hurricane Project* include Lawrence Harbor, Cliffwood Beach, Keyport, Union Beach, Keansburg, Leonardo, and Highlands (U.S. Army Corps of Engineers 2012; NJDEP 2015b). The Service will work in coordination with ENSP, the Corps, and these local municipalities to develop BMPs that avoid or minimize disturbance of listed species.

CONCLUSIONS AND SUMMARY OF RECOMMENDATIONS

The comments and recommendations in this PAL supplement the Service's 1999 FWCA 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, and encourages the Corps to continue to coordinate with the Service, NMFS, NJDEP, conservation organizations, and local municipalities to develop flood risk management plans that protect fish and wildlife resources to the maximum extent possible while achieving the goal of protecting human resources from flood damage. The Service offers the following specific comments and recommendations.

1. Evaluate non-structural alternatives (*e.g.* buy-out of properties in the highest risk areas) to compare to, or in combination with, proposed structural alternatives. Removing or modifying high-risk structures may result in a reduced need to close the Pews Creek storm gate, improving salt marsh hydrology and habitat.

2. Install tidal gauges throughout the Pews Creek marsh to monitor tidal levels, tide duration, and estuarine salinity, for at least one year prior and two years subsequent to placement of the storm gate. Commit to remedial action (*e.g.*, modify storm gate, or closing the storm gate less frequently) if the monitoring shows an adverse indirect effect from the proposed flood control measures. Hydrologic impacts to the Pews Creek salt marsh may occur with placement of the storm gate and could result in alteration of the vegetation community and wetland habitat, and adversely impact fish and wildlife. Forward monitoring data results and reports to the Service's NJFO.

3. Conduct further vegetation surveys of the Pews Creek salt marsh to determine presence or absence of native *Phragmites australis americanus*. Forward survey results to the Service's NJFO.

4. Consider alternative locations for the wetland mitigation site, selecting a location where restoration produces substantial improvements to floral community, specifically locations that have become invasive *Phragmites* monocultures. The proposed Pews Creek mitigation site is composed of patches of *Phragmites* mixed with native shrubs and emergent vegetation, which is suitable fish and wildlife habitat. The Service's preferred mitigation would be restoring tidal flow and salt marsh plant community to the Pews Creek wetland area previously isolated and degraded by the Corps' Keansburg levee. This area is currently a dense monoculture of invasive *Phagmites* of little ecological value.

5. Coordinate with the Service during the mitigation site selection process, pursuant to the 2003 agreement between the Corps and DOI, to include the Service in pre-construction mitigation design to minimize impacts to wetlands and fish and wildlife habitats.

6. Resolve the issue of wetland mitigation requirements and responsibilities with NJDEP, and upon determination, coordinate all mitigation plans with the Service and NJDEP to maximize benefits to wetlands and fish and wildlife habitats.

7. Coordinate with ENSP to verify the presence or absence of vernal pool habitat in the project area. If present, institute measures (as recommended by ENSP) to avoid adverse impacts to this habitat. Coordinate with ENSP to determine if mitigative actions are required for any loss or disturbance of vernal pool habitat.

8. Do not use previously contaminated materials to construct levees unless they have been evaluated and remediated as necessary. Sediment from potentially contaminated scrapings or dredging may contain high levels of contaminants. Remobilization of contaminants may occur by utilizing previously contaminated soil or sediment for sources of levee construction material and may be harmful to wildlife (Oros *et al.* 2007).

9. Locate interior drainage structures discharging into the Compton Creek salt marsh at locations where drainage ditches in the marsh already exist to reduce the impact of localized freshwater discharges on native estuarine vegetation communities.

10. Consider possible long-term effects of climate change and sea level rise to project components and fish and wildlife resources in project planning, design and habitat assessments.

11. Although unlikely, piping plovers may nest in the project area following the completed Phase I beach nourishment. Establish (develop, fund, and implement) a monitoring program to survey for piping plovers on project area beaches. Monitoring shall be performed by a qualified bird monitor(s) pre-approved by the Service. Monitoring shall include daily surveys of project area beaches during the piping plover nesting season. Monitoring must be coordinated with the Service and ENSP. To avoid potential adverse impacts on nesting piping plovers, avoid all work on or within 300 feet of project area beaches between March 15 and August 31. If piping plovers nest on the beaches within Port Monmouth, consult further with the Service (pursuant to Section 7 of the ESA).

12. Seasonally restrict work that might damage seabeach amaranth plants during the growing season of May 15 to November 30. Alternatively, conduct a thorough survey of the area of disturbance no more than one week prior to the start of work and if seabeach amaranth plants are found, in consultation with the Service, fence and avoid any plants in the work area. Use symbolic string-and-post fencing to encircle each plant or group of plants, allowing a 10-foot buffer on all sides. Mark the fencing with flagging and signs, instructing all work crews to avoid fenced areas.

13. Seasonally restrict any removal of trees over three inches dbh (diameter at breast height) between April 1 and September 30 to provide protections to potential northern long-eared bat habitat.

14. 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.

15. The Corps' Environmental Impact Statement for the Project committed to placement of three osprey nesting platforms in the Pews Creek salt marsh. Since that time other parties have installed three osprey nesting platforms in this area, which are currently in use by the birds. The Service recommends the Corps contact ENSP to determine the area's carrying capacity for ospreys, and if found that the area can sustain a larger population, install the agreed upon platforms in locations suggested by ENSP.

16. Reduce the footprint of the Port Monmouth Road floodwall and the Old Port Monmouth Road closure gate to the maximum possible extent. Any tree or shrub removal should be seasonally restricted from March 15 to July 31 to protect nesting migratory birds.

17. Coordinate with the Service, ENSP, and local municipalities to develop BMPs that minimize disturbance of listed species.

18. 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.

Thank you for the opportunity to review and comment on the proposed project modification and to supplement our 1999 FWCA report. If you have any questions regarding this supplement, please contact Dennis Hamlin at 609-383-3938, extension 14 or dennis_hamlin@fws.gov. 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 Port Monmouth Phase II 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.

Sincerely

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Enclosures

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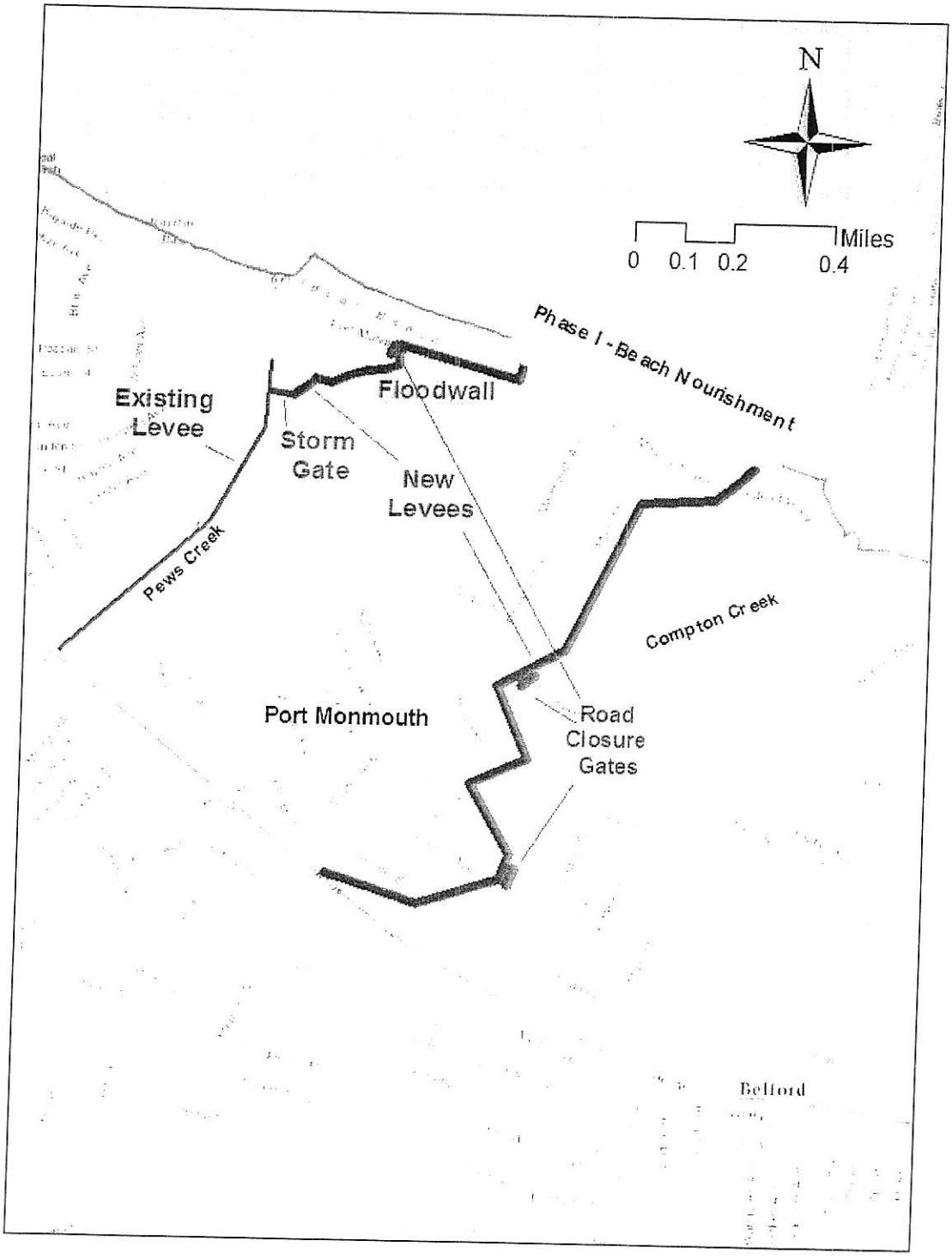

Figure 1. Port Monmouth Hurricane and Storm Damage Reduction Project – Phase II Port Monmouth, Middleton Township, Monmouth County, New Jersey.

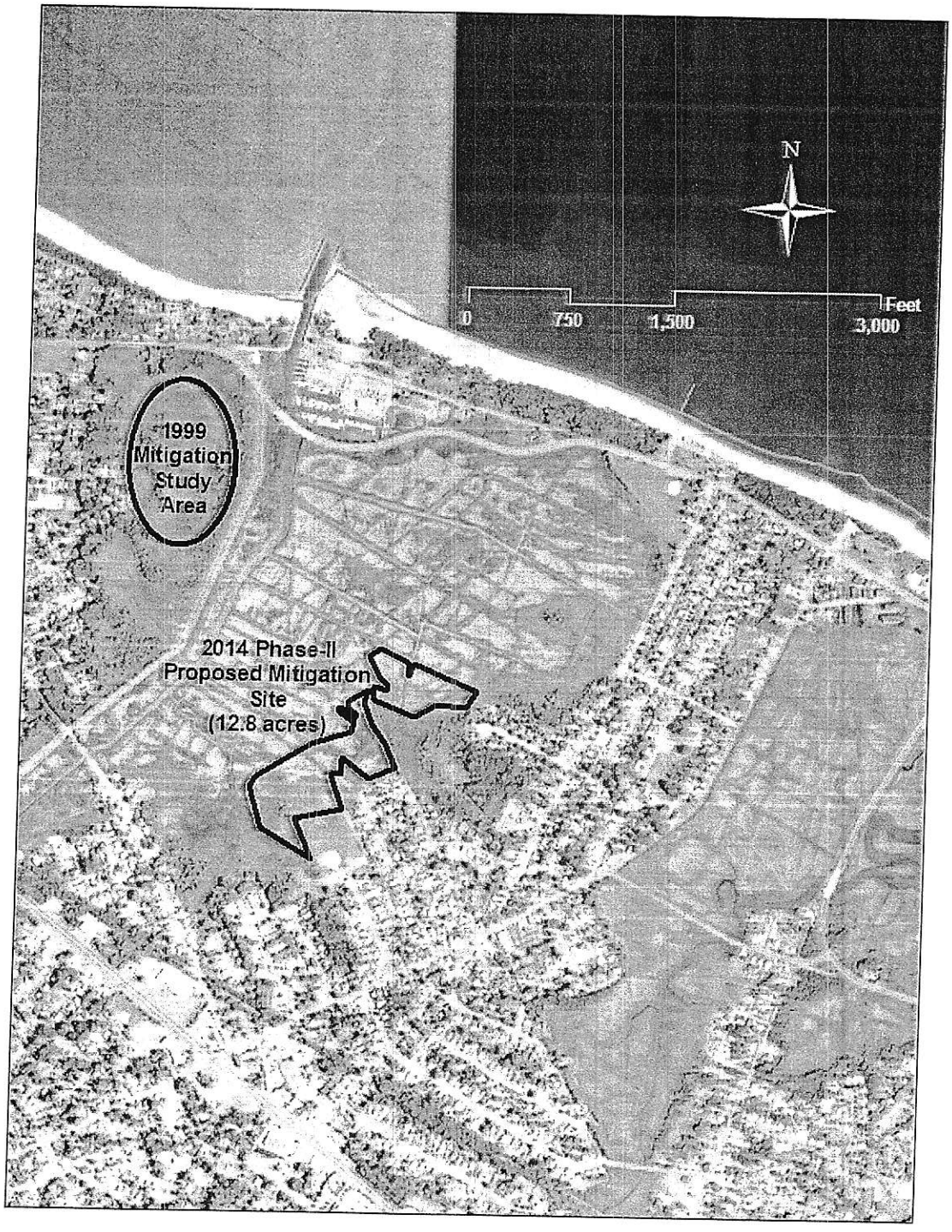

Figure 2. Proposed wetland mitigation site for the Port Monmouth Hurricane and Storm Damage Reduction Project – Phase II, Middletown Township, Monmouth County, New Jersey (USFWS 1999; U.S. Army Corps of Engineers 2014).

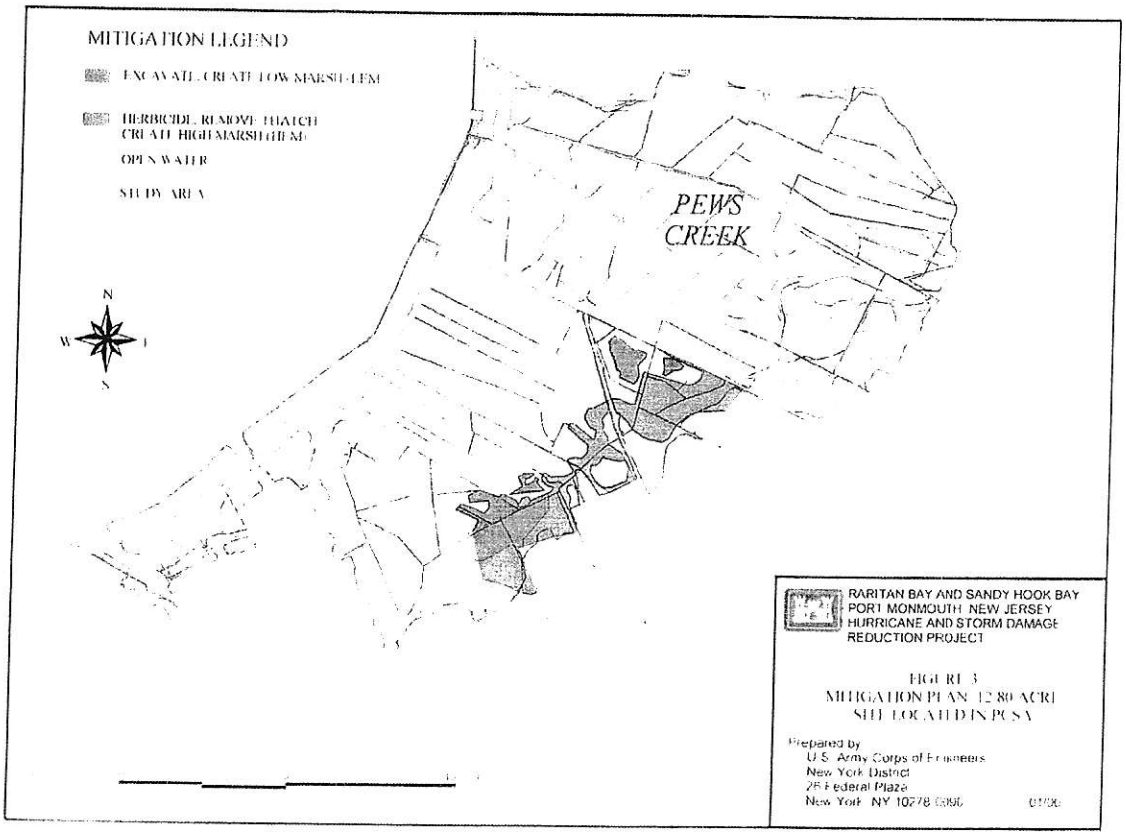

Figure 3. Pews Creek mitigation site plan, indicating areas for: 1) excavation to create low marsh; and 2) herbicide treatment and thatch removal to control *Phragmites* and create high marsh (U.S. Army Corps of Engineers 2014).

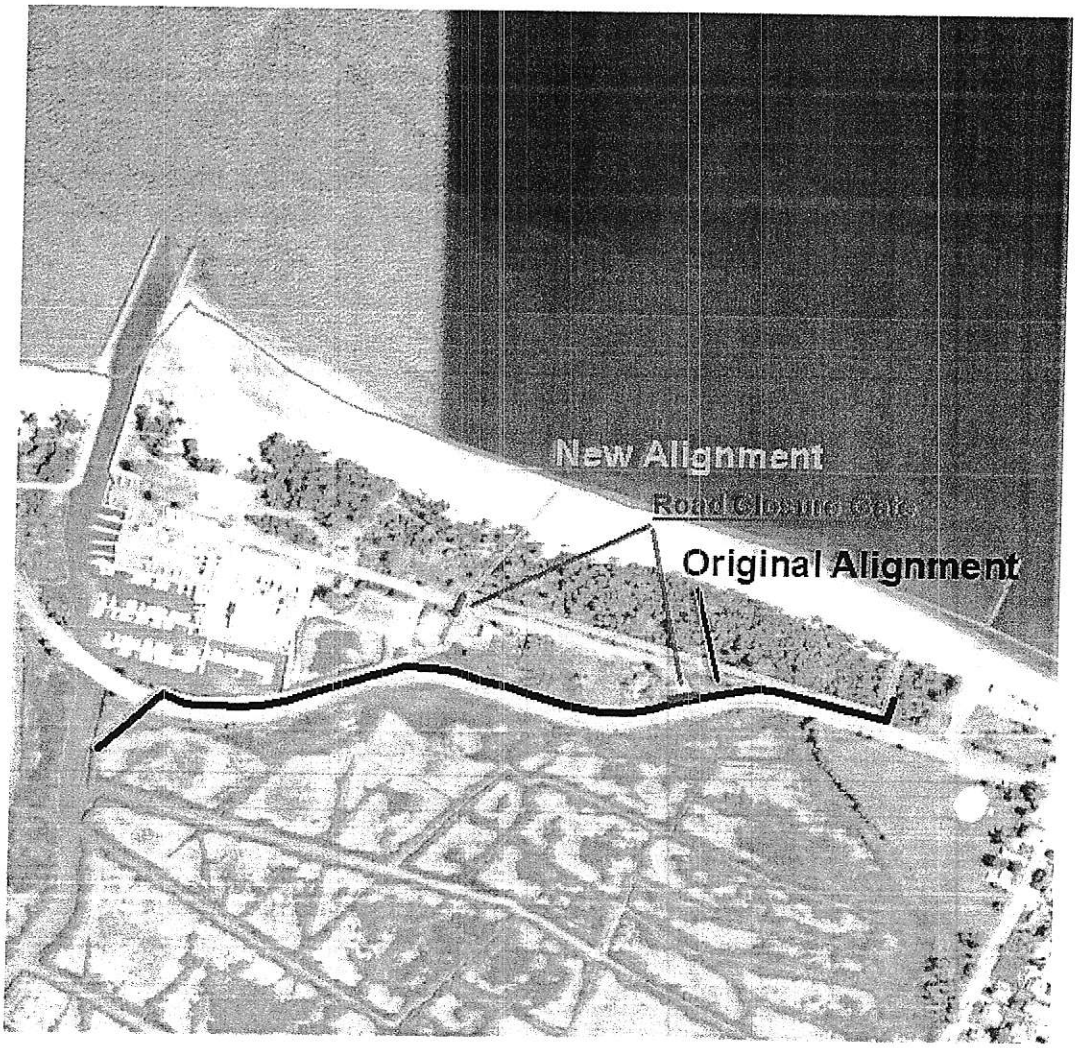

Figure 4. Alignment of Contract 3 floodwall and Old Port Monmouth Road closure gate for Port Monmouth Hurricane and Storm Damage Reduction Project – Phase II, Middletown Township, Monmouth County, New Jersey.

Table 1. Seasonal occurrence for Birds of Conservation Concern in the Port Monmouth, New Jersey area. (USFWS 2015).

Common Name	Scientific Name	Occurrence
American oystercatcher	*Haematopus palliatus*	Year-round
American bittern	*Botaurus lentiginosus*	Breeding
bald eagle	*Haliaeetus leucocephalus*	Year-round
black skimmer	*Rynchops niger*	Breeding
black rail	*Laterallus jamaicensis*	Breeding
black-billed cuckoo	*Coccyzus erythropthalmus*	Breeding
blue-winged warbler	*Vermivora pinus*	Breeding
Canada warbler	*Wilsonia canadensis*	Breeding
fox sparrow	*Passerella liaca*	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

Table 2. Avifauna species of special interest found in the Port Monmouth, New Jersey area. (USFWS 1997).

Common Name	Scientific Name
American black duck	*Anas rubripes*
American oystercatcher	*Haematopus palliatus*
American redstart	*Setophaga ruticilla*
American wigeon	*Anas americana*
bank swallow	*Riparia riparia*
black scoter	*Melanitta nigra*
black skimmer	*Rynchops niger*
black-and-white warbler	*Mniotilta varia*
black-bellied plover	*Pluvialis squatarola*
black-billed cuckoo	*Coccyzus erthropthalmus*
blackburnian warbler	*Dendroica fusca*
black-crowned night-heron	*Nycticorax nycticorax*
blackpoll warbler	*Dendroica striata*
black-throated blue warbler	*Dendroica caerulescens*
black-throated green warbler	*Dendroica virens*
blue-gray gnatcatcher	*Polioptila caerulea*
blue-winged teal	*Anas discors*
blue-winged warbler	*Vermivora pinus*
bobolink	*Dolichonyx oryzivorus*
Bonaparte's gull	*Larus philadelphia*
brant	*Branta bernicla*
broad-winged hawk	*Buteo platypterus*
brown creeper	*Certhia americana*
bufflehead	*Bucephala albeola*
Canada goose	*Branta canadensis*
Canada warbler	*Wilsonia canadensis*
canvasback	*Aythya valisineria*
chimney swift	*Chaetura pelagica*
clapper rail	*Rallus longirostris*
common barn-owl	*Tyto alba*
common goldeneye	*Bucephala clangula*
common loon	*Gavia immer*
common nighthawk	*Chordeiles minor*
common tern	*Sterna hirundo*
Cooper's hawk	*Accipiter cooperii*
dark-eyed junco	*Junco hyemalis*

Table 2. Avifauna species of special interest found in the Port Monmouth, New Jersey area. (USFWS 1997).

Common Name	Scientific Name
double-crested cormorant	*Phalacrocorax auritus*
dunlin	*Calidris alpina*
eastern bluebird	*Sialia sialis*
eastern kingbird	*Tyrannus tyrannus*
eastern meadowlark	*Sturnella magna*
eastern wood-pewee	*Contopus virens*
Forster's tern	*Sterna forsteri*
gadwall	*Anas strepera*
glossy ibis	*Plegadis falcinellus*
gray catbird	*Dumetella carolinensis*
great blue heron	*Ardea herodias*
great cormorant	*Phalacrocorax carbo*
great crested flycatcher	*Myiarchus crinitus*
great egret	*Casmerodius albus*
greater scaup	*Aythya marila*
green-winged teal	*Anas crecca*
hermit thrush	*Catharus guttatus*
hooded merganser	*Lophodytes cucullatus*
horned grebe	*Podiceps auritus*
horned lark	*Eremophila alpestris*
king rail	*Rallus elegans*
least bittern	*Ixobrychus exilis*
least sandpiper	*Calidris minutilla*
least tern	*Sterna antillarum*
little blue heron	*Egretta caerulea*
long-eared owl	*Asio otus*
Louisiana waterthrush	*Seiurus motacilla*
magnolia warbler	*Dendroica magnolia*
mallard	*Anas platyrhynchos*
marsh wren	*Cistothorus palustris*
merlin	*Falco columbarius*
Nashville warbler	*Vermivora ruficapilla*
northern harrier	*Circus cyaneus*
northern oriole	*Icterus spurius*
northern parula	*Parula americana*

Table 2. Avifauna species of special interest found in the Port Monmouth, New Jersey area. (USFWS 1997).

Common Name	Scientific Name
northern rough-winged swallow	*Steldidopteryx serripennis*
northern shoveler	*Anas clypeata*
oldsquaw	*Clangula hyemalis*
osprey	*Pandion haliaetus*
ovenbird	*Seiurus aurocapillus*
palm warbler	*Dendroica palmarum*
peregrine falcon	*Falco peregrinus*
pine siskin	*Carduelis pinus*
piping plover	*Charadrius melodus*
prairie warbler	*Dendroica discolor*
purple martin	*Progne subis*
red knot	*Calidris canutus*
red-breasted merganser	*Mergus serrator*
red-shouldered hawk	*Buteo lineatus*
red-throated loon	*Gavia stellata*
rose-breasted grosbeak	*Pheucticus ludovicianus*
rough-legged hawk	*Buteo lagopus*
ruby-throated hummingbird	*Archilochus colubris*
ruddy duck	*Oxyura jamaicensis*
ruddy turnstone	*Arenaria interpres*
rufous-sided towhee	*Pipilo erythrophthalmus*
sanderling	*Calidris alba*
savannah sparrow	*Passerculus sandwichensis*
scarlet tanager	*Piranga olivacea*
seaside sparrow	*Ammodramus maritimus*
semipalmated plover	*Charadrius semipalmatus*
semipalmated sandpiper	*Calidris pusilla*
sharp-shinned hawk	*Accipter striatus*
sharp-tailed sparrow	*Ammodramus caudacutus*
short-eared owl	*Asio flammeus*
snow goose	*Chen caerulescens*
snowy egret	*Egretta thula*
sora	*Porzana carolina*
surf scoter	*Melanitta perspicillata*
Swainson's thrush	*Catharus ustulatus*

Table 2. Avifauna species of special interest found in the Port Monmouth, New Jersey area. (USFWS 1997).

Common Name	Scientific Name
swamp sparrow	*Melospiza georgiana*
veery	*Catharus fuscescens*
Virginia rail	*Rallus limicola*
whip-poor-will	*Caprimulgus vociferus*
white-eyed vireo	*Vireo griseus*
white-throated sparrow	*Zonotrichia albicollis*
white-winged scoter	*Melanitta fusca*
willet	*Catoptrophorus semipalmatus*
willow flycatcher	*Empidonax traillii*
wood thrush	*Hylocichla mustelina*
worm-eating warbler	*Helmitheros vermivorus*
yellow-billed cuckoo	*Coccyzus americanus*
yellow-breasted chat	*Icteria virens*
yellow-crowned night-heron	*Nycticorax violaceus*
yellow-rumped warbler	*Dendroica coronata*

Appendix A

Letter from New Jersey Department of Environmental Protection
November 17, 2014

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

Appendix B

Species Narratives

Piping plover (*Charadrius melodus*)

Within its Atlantic Coast breeding range, the piping plover was federally listed as threatened in 1986.

The piping plover is a small shorebird approximately 7 inches long with a wingspan of about 15 inches. Piping plovers have white underparts with a light beige back and crown. Breeding adults have a single black breast band, which is often incomplete, and a black bar across the forehead. The legs and bill are orange in summer, with a black tip on the bill. In winter, the birds lose the breast bands, the legs fade from orange to pale yellow, and the bill becomes mostly black. Piping plover adults and chicks feed on marine macroinvertebrates such as worms, fly larvae, beetles, and crustaceans.

Piping plovers are present on the New Jersey shore during the breeding season, generally between March 15 and August 31. These territorial birds nest above the high tide line, usually on sandy ocean beaches and barrier islands, but also on gently sloping foredunes, blowout areas behind primary dunes, washover areas cut into or between dunes, the ends of sandspits, and deposits of suitable dredged or pumped sand. Piping plover nests consist of a shallow scrape in the sand, frequently lined with shell fragments and often located near small clumps of vegetation. Females lay four eggs that hatch in about 25 days, and surviving chicks learn to fly (fledge) after about 25 to 35 days. The flightless chicks follow their parents to feeding areas, which include the intertidal zone of ocean beaches, ocean washover areas, mudflats, sandflats, wrack lines (organic ocean material left by high tide), and the shorelines of coastal ponds, lagoons, and salt marshes.

Threats to the piping plover include habitat loss, human disturbance of nesting birds, predation, and oil spills and other contaminants. Habitat loss results from development, as well as from beach stabilization, beach nourishment, and other physical alterations to the beach ecosystem. Human disturbance of nesting birds includes foot traffic, sunbathing, use of kites/kiteboards/ kitebuggies, pets, fireworks, mechanical beach raking, construction, and vehicle use. These disturbances can result in crushing of eggs, failure of eggs to hatch, and death of chicks. Predation on piping plover chicks and eggs is intensified by development because predators such as foxes (*Vulpes vulpes*), rats (*Rattus norvegicus*), raccoons (*Procyon lotor*), skunks (*Mephitis mephitis*), crows (*Corvus spp.*), and gulls (*Larus spp.*) thrive in developed areas and are attracted to beaches by food scraps and trash. Unleashed and feral dogs (*Canis familiaris*) and cats (*Felis domesticus*) also disturb courtship and incubation and prey on chicks and adults.

U.S. FISH AND WILDLIFE SERVICE SPECIES NARRATIVES:
Biology and Threats of Federally Listed Species in New Jersey

Red Knot (*Calidris canutus rufa*)

The red knot was added to the list of Federal candidate species in 2006. A final rule to list the rufa subspecies as threatened was published on December 11, 2014, with an effective date of January 12, 2015. Red knots are federally protected under the Migratory Bird Treaty Act, and are State-listed as endangered.

At 9 to 10 inches long, the red knot is a large, bulky sandpiper with a short, straight, black bill. During the breeding season, the legs are dark brown to black, and the breast and belly are a characteristic russet color that ranges from salmon-red to brick-red. Males are generally brighter shades of red, with a more distinct line through the eye. When not breeding, both sexes look alike—plain gray above and dirty white below with faint, dark streaking. As with most shorebirds, the long-winged, strong-flying knots fly in groups, sometimes with other species. Red knots feed on invertebrates, especially small clams, mussels, and snails, but also crustaceans, marine worms, and horseshoe crab eggs. On the breeding grounds knots mainly eat insects.

Small numbers of red knots may occur in New Jersey year-round, while large numbers of birds rely on New Jersey's coastal stopover habitats during the spring (mid-May through early June) and fall (late-July through November) migration periods. Smaller numbers of knots may spend all or part of the winter in New Jersey.

The primary wintering areas for the rufa red knot include the southern tip of South America, northern Brazil, the Caribbean, and the southeastern and Gulf coasts of the U.S. The rufa red knot breeds in the tundra of the central Canadian Arctic. Some of these robin-sized shorebirds fly more than 9,300 miles from south to north every spring and reverse the trip every autumn, making the rufa red knot one of the longest-distance migrating animals. Migrating red knots can complete non-stop flights of 1,500 miles or more, converging on critical stopover areas to rest and refuel along the way. Large flocks of red knots arrive at stopover areas along the Delaware Bay and New Jersey's Atlantic coast each spring, with many of the birds having flown directly from northern Brazil. The spring migration is timed to coincide with the spawning season for the horseshoe crab (*Limulus polyphemus*). Horseshoe crab eggs provide a rich, easily digestible food source for migrating birds. Mussel beds on New Jersey's southern Atlantic coast are also an important food source for migrating knots. Birds arrive at stopover areas with depleted energy reserves and must quickly rebuild their body fat to complete their migration to Arctic breeding areas. During their brief 10 to 14-day spring stay in the mid-Atlantic, red knots can nearly double their body weight.

Threats to the red knot include sea level rise; coastal development; shoreline stabilization; dredging; reduced food availability at stopover areas; disturbance by vehicles, people, dogs, aircraft, and boats; and climate change.

January 12, 2015

Roseate tern (*Sterna dougallii*)

Within its North Atlantic breeding range, the roseate tern was federally listed as endangered in 1987.

The roseate tern is a dove-sized (about 15 inches long), light-colored seabird with a long, forked tail. This species is named for a faint rosy tint to its breast feathers. In summer, adults have a black cap, red legs, and a black bill with dark red at its base. In winter, adults have a black bill, brown legs, and a white forehead with a black mask. Roseate terns feed mainly on small fish, which they capture by plunging headfirst into the water.

Roseate terns have not nested in New Jersey since 1980, but migrating birds pass through in spring and fall and may stop here to rest and feed. By the end of May, most birds have paired and selected nesting sites, which have been limited to Long Island and southern New England in recent decades. Roseate terns usually nest among colonies of common terns (*Sterna hirundo*) and benefit from the aggressive defensive behaviors of the common tern. Roseate tern nests are little more than shallow scrapes on bare ground that are frequently concealed under beach vegetation, rock or driftwood. By early August, roseate terns have left the nesting areas and in September they head out to sea and back to their wintering grounds in South America.

Threats to the roseate tern include habitat loss on or near coastal barrier islands from development and disturbance from human recreation and other activities in coastal areas. Predation by great black-backed (*Larus marinus*) and herring (*Larus argentatus*) gulls is a threat in areas where human garbage provides an abundant food supply to attract and support these predator species.

Seabeach amaranth (*Amaranthus pumilus*)

Seabeach amaranth was federally listed as a threatened species in 1993.

An annual member of the amaranth family, seabeach amaranth has reddish stems and small, rounded, notched, spinach-green leaves. In New Jersey, these low-growing plants are typically about 4 inches across by late summer, but can occasionally reach 2 or 3 feet in diameter. The small white flowers and dark seeds are located in inconspicuous clusters along the stems. Germination begins in May and continues through the summer. Flowering begins as soon as plants reach sufficient size (June or July) and continues until the plants die between September and December.

Seabeach amaranth is native (endemic) to Atlantic Coast beaches and barrier islands. The primary habitat of seabeach amaranth consists of overwash flats at accreting ends of islands, lower foredunes, and upper strands of non-eroding beaches (landward of the wrackline), although the species occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, inter-dunal areas, and on sand and shell material deposited for beach replenishment or as dredge spoil. Seabeach amaranth usually grows on a nearly pure sand substrate, occasionally with shell fragments mixed in.

Seabeach amaranth occupies elevations from 8 inches to 5 feet above mean high tide. The plant grows in the upper beach zone above the high tide line, and is intolerant of even occasional flooding during its growing season. The habitat of seabeach amaranth is sparsely vegetated with annual herbs and, less commonly, perennial herbs (mostly grasses) and scattered shrubs. Vegetative associates of seabeach amaranth include sea rocket (*Cakile edentula*), seabeach spurge (*Chamaesyce polygonifolia*), and other species that require open, sandy beach habitats. However, this species is intolerant of competition and does not occur on well-vegetated sites. Seabeach amaranth is often associated with beaches managed for the protection of beach nesting birds such as the piping plover (*Charadrius melodus*) and least tern (*Sterna antillarum*).

Threats to seabeach amaranth include beach stabilization (particularly the use of beach armoring, such as sea walls and riprap), intensive recreational use, mechanical beach raking, and herbivory by insects.

Northern Long-Eared Bat (*Myotis septentrionalis*)

The northern long-eared bat was federally listed as a threatened species in 2015.

The northern long-eared bat is a medium sized bat weighing approximately 5 to 8 grams with females slightly larger than males. The northern long-eared bat is distinguished from other Myotis species by its long ears.

The northern long-eared bat overwinters in caves and abandoned mines. Hibernacula are typically large with constant temperatures, high humidity and no air currents. Within hibernacula, northern long-eared bats are found in tight crevices and cracks with only nose and ears visible. The northern long-eared bat congregates in the vicinity of their hibernacula in August or September and enters into hibernation in October and November. The bat shows a high degree of philopatry (using the same site multiple years) to hibernaculum, although they may not return to the same hibernaculum in successive years. Movement between hibernacula throughout the winter has also been observed. There are eight known hibernacula in Northern New Jersey.

In April northern long-eared bats emerge from hibernation and migrate to summer habitat. Migratory movements are short compared to the Indiana bat, with movement typically between 35 miles and 55 miles. Once at summer habitat, the northern long-eared bat is comparable to the Indiana bat in terms of summer roost selection, but appears to be more opportunistic. Northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Maternity colonies generally consist of 30 to 60 individuals. Males and non-reproductive females may roost in cooler places, like caves and mines. Roosting northern long-eared bats have also been observed in human-made structures, such as buildings, barns, sheds, cabins, under eaves of buildings, and in bat houses. In southern New Jersey the northern long-eared bat is known to roost in Atlantic white cedar.

Preferred foraging areas are in forested habitats. The northern long-eared bat emerges at dusk and feeds on moths, flies, leafhoppers, caddisflies, and beetles approximately 3 to 10 feet above the ground. Gleaning arachnids and other insects from foliage is also a foraging technique used by northern long-eared bats.

The distribution of the northern long-eared bat includes the Midwest and Northeast of the United States, and all Canadian provinces west to the southern Yukon Territory and Eastern British Columbia. In New Jersey, the northern long-eared bat is found statewide.

U.S. FISH AND WILDLIFE SERVICE SPECIES NARRATIVES:
Biology and Threats of Federally Delisted Species in New Jersey

Bald eagle (*Haliaeetus leucocephalus*)

The bald eagle was federally listed in 1967, and classified as an endangered species in 1973. With increasing numbers, bald eagle populations in the coterminous 48 States were re-classified from endangered to threatened in 1995, and delisted on August 9, 2007. The bald eagle continues to be protected under Federal laws including the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The bald eagle also remains a State-listed species under the New Jersey Endangered and Nongame Species Conservation Act, which carries protections under the State land use regulation program. These Federal and State laws prohibit unauthorized take of bald eagles. For the continued protection of bald eagles, and to ensure compliance with Federal and State laws, the U.S. Fish and Wildlife Service (Service) recommends managing bald eagles in accordance with the National Bald Eagle Management Guidelines and all applicable State regulations. The Service and its partners are monitoring the bald eagle for a 20 year period to ensure populations remain stable following delisting.

With a wingspan that can exceed 7 feet, the bald eagle is the second largest bird of prey in North America. The bald eagle is our National symbol and unmistakable in appearance, featuring a white head and tail that contrast with a dark body. Juvenile birds lack the white head and tail, and are mottled in appearance until their fifth year. Eagles are opportunistic feeders and will eat carrion or live prey, primarily fish, but also small mammals, reptiles, and waterfowl.

Bald eagles occur in New Jersey throughout the year. The breeding season in New Jersey begins in late December to early January. During this period, mating pairs will work diligently to build or repair their nest. First-year nests can measure 2 feet high and 5 feet across. Eagles may use the same nest year to year, adding sticks and other nesting material, making the nest larger and larger each year. By the middle of February, most bald eagles in New Jersey have begun to lay their clutch of one to three eggs. Young eagles learn to fly (fledge) 11 to 12 weeks after hatching. Adults continue to provide food for the juvenile eagles for as long as 3 months after they fledge. During this period, the fledglings learn to fly proficiently and begin to hunt for themselves.

Bald eagles prefer forested or open habitats with little human disturbance near large bodies of water, such as lakes, large rivers, reservoirs, and bays. Eagles are often attracted to a water body as they search for food, and frequently roost in dead or mature trees adjacent to water. In winter, bald eagles gather in large numbers near coasts and inland water bodies that remain ice-free, allowing access to fish and other prey.

Threats to the bald eagle include environmental contaminants, habitat destruction and degradation, and disturbance of nesting and feeding birds.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK NY 10278-0090

28 October 2015

Mr. Eric Schrading, Field Supervisor
United States Fish and Wildlife Service
New Jersey Field Office
927 North Main Street, Building D
Pleasantville, NJ 08232

Attn: Dennis Hamlin

Dear Mr. Schrading,

The United States Army Corps of Engineers (USACE), New York District (District) provides this letter as a response to the United States Fish and Wildlife Service's (USFWS) Planning Aid Letter (PAL) dated April 3, 2015 for the Port Monmouth Hurricane and Storm Damage Reduction Project, Phase II, Middletown Township, Monmouth County, New Jersey, and serves as ongoing coordination with USFWS. The PAL is a supplement to the USFWS's 1999 Fish and Wildlife Coordination Act (FWCA) Section 2(b) report for Phases I and II of the Port Monmouth project.

Responses:

1. Page 3, project construction description. Please note that the information provided for the features of each contract area represent approximate values and feature types based on the stage of design at the time the District requested an updated report under the FWCA. As design and construction progress, as information is collected on field conditions, and as the District optimizes design based on reviews of plans and specifications, some of the design features may change. Significant changes will be coordinated with Federal and state resource agencies, as appropriate. A supplemental NEPA document(s) will also be prepared to address major changes and will be sent to USFWS for review.

2. Page 6, first incomplete paragraph discussing 1999 FWCA 2(b) report and mitigation site selection.
   a. The USFWS stated that the Keansburg levee was identified as the mitigation study area and appears to have been the proposed location for the wetland mitigation. During a discussion with Mr. Hamlin (pers. comm. February 2015), it was explained that an array of mitigation alternatives (e.g., study area) were evaluated as part of a Habitat Evaluation Procedures (HEP) model. The selected mitigation plan documented in the 2000 Environmental Impact Statement (EIS) was within the Pews Creek wetland, east of the Keansburg levee.

b. The USFWS stated that they have no record of being consulted by the District on the selection of the currently proposed mitigation site. As documented in the 2000 EIS: "The District, in consultation with the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS) and NJDEP, developed an array of mitigation plans using HEP protocol (USACE 2000b). The selected mitigation plan proposes to restore approximately 12.80 acres of wetland *Phragmites*-dominated habitat to salt marsh habitat". .... "Based on coordination with other federal and state agencies, an area of controversy has been identified. A consensus to determine the appropriate level of compensatory mitigation to offset environmental impacts has not yet been reached". The USFWS was consulted on the proposed mitigation site and appears to have participated in developing mitigation plans through the HEP process. The controversy, at the time the 2000 EIS was developed, was not the site selected but with the amount of mitigation deemed appropriate for the project impacts.

c. Funding to design and construct Phase II was not immediately available following the completion of the 2000 EIS. Due to the passage of time, and area of controversy identified in the EIS, coordination with the agencies was re-initiated in 2014. NJDEP Land Use, NMFS and USFWS agree that the HEP model does not address/incorporate a comprehensive evaluation of wetland functions and values and is not appropriate to use for identifying wetland mitigation acreage; USFWS and NMFS also disapprove of the Pews Creek mitigation site since the habitat is suitable and of good quality for fish and wildlife. As an alternative plan, and to meet USACE requirements, an Evaluation for Planned Wetlands (EPW) is being conducted. Through initial EPW evaluations and multiple field visits with USFWS, NJDEP and/or NMFS (e.g., July 21, 2014; April 30, 2015), additional mitigation alternatives are being identified, including the west side of the Keansburg levee. The Pews Creek site identified in the EIS is no longer being considered for the mitigation site.

3. Page 6, first complete paragraph, last two sentences.

a. The 12.8 acres of wetland mitigation identified refers to the amount of mitigation identified in the 2000 EIS, based on the HEP model, a *Phragmites* Encroachment model, and USACE cost analysis. The acreage is based on old information and may change pending the EPW evaluation. At this time, the District has not committed to the 12.8 acres, which equates to an approximate 1:1 ratio.

b. As discussed with Mr. Hamlin (pers. comm 2015), the USACE Civil Works policy requires a habitat-based methodology to evaluate for wetland impacts and associated mitigation acreage; this differs from the USACE Regulatory and NJDEP Land Use policies that require ratios to determine mitigation. Since there is a difference in policy, the District cannot use project funding to pay for mitigation acreage that equates to a ratio exceeding the pending EPW evaluation. However, the District recognizes that Land Use regulations must be met, therefore, funding for any difference in acreage would be the responsibility of the project's non-Federal sponsor.

4. Page 10, first incomplete paragraph.
   a. A Biological Opinion for the Port Monmouth project, Phases I and II, was issued on March 7, 2014.
   b. Coordination with Ms. Greene on the need for an Essential Fish Habitat Assessment has already been initiated.

5. Page 12, Pollinators Section, last sentence. In order to maintain access to levees and floodwalls, and to avoid undermining the structural integrity of these features, the vegetation requirements for the "vegetation free" zones are limited to specific types of vegetation and have strict maintenance requirements. However, the District plans to incorporate vegetation that supports pollinator species into the mitigation site design.

6. Page 14, Recommendation 1: As part of the 2000 Final Feasibility Study for the Port Monmouth project, 67 preliminary alternative plans were considered including buy outs and adjustments to existing structures. The plan selected was the most cost effective design, while considering: engineering feasibility; social consequences; environmental impacts; economic implications; and non-Federal sponsor and environmental review agency input. Monitoring of the Pews Creek marsh using tidal gauges will occur pre and post gate construction.

   An Operations and Maintenance Manual is under development and will be provided to the non-Federal sponsor upon completion of the gate construction. The following provides preliminary, **draft** language describing the conditions for gate operation:

   - Normal Operation: Tide Gates fully opened & Pumping Station off (natural ebb & flow)
   - Spring Tide Operation: Tide Gates are to remain open and un-operated prior to and during Spring Tides. On the occasion that any rain event occurs over the drainage basin at the same time as a Spring Tide, automated operation of both the gates and the pumps shall be initiated. The pumping station will be operated until such a time that the rain storm has passed or the predicted tides recedes to maximum levels of 3.6 feet, NAVD 88 or lower at which point the gates are to be opened and the pumps will be turned off.
   - Predicted Storm Operation: If a significant tidal event is predicted, automated operation of both the tide gate and the pump station are to be initiated such that the tide gates are closed at low tide before the predicted storm hits the area. On the occasion that a rain event occurs over the drainage basin at the same time as the predicted storm, the pumping station will be operated until such a time that the storm has passed and exterior tide levels recedes to elevation 3.6 feet, NAVD 88 or lower, at which point the automated operation of both the gates and the pump are to be stopped and the gates are to be fully open.

7. Page 14, Recommendation 2: The 2000 EIS described how the placement of a storm gate at Pews Creek would have minimal effects on the daily tidal cycle. Recent modeling during project design have also indicated the same results. However, District is planning for tidal marsh monitoring to substantiate the claims and will provide the results to the agencies. At this time, the District cannot commit to remedial action if the results show an adverse indirect effect on the wetlands from the storm gate.

8. Page 14, Recommendation 3: not applicable.

9. Page 14, Recommendation 4: As described above, alternative locations for the mitigation site are being evaluated in coordination with federal and state agencies. At this time, mitigation to a forested wetland on the west side of the Keansburg levee is being considered as the preferred site, pending additional data collection and cost analysis.

10. Page 14, Recommendation 5: The District is currently coordinating with the USFWS on the mitigation site selection.

11. Page 14, Recommendation 6: The District is working closely with NJDEP Land Use on wetland mitigation requirements. Mitigation plans will be coordinated with NJDEP Land Use and USFWS. Timely feedback is required to keep the project schedule.

12. Page 14, Recommendation 7: Coordination with NJDEP for the impacts of the project on vernal pools was initiated. Issues are not anticipated.

13. Page 14, Recommendation 8: Any soil excavated and acceptable for re-use on site will be capped with clean soil. The clean soil will be from off-site, or can be re-used from on-site as long as the contractor has sampled and had the soil lab analyzed. Any excess clean soil that is not needed on-site will be trucked to off-site locations within the municipality or State for re-use. Unacceptable soil will be taken off-site to a state-approved soil reclamation facility.

14. Page 15, Recommendation 9: District engineers have been working to locate interior drainage structures to existing drainage ditches in the marsh; unfortunately, it is not possible to do this for every drainage structure.

15. Page 15, Recommendation 10: Historic sea level rise based on the Sandy Hook gage is incorporated into design of the renourishment fill for the shore protection component of the Port Monmouth project. The project levees/floodwalls were designed at an elevation of +13 feet NAVD 88. Annual exceedance probability analyses were performed on the project based on the historic sea level rise rate, the intermediate rate of sea-level rise and the high rate of sea-level. Based on the historic rate of sea-level rise, there is a 0.9% probability that a storm event will exceed this height in any given year. Further based on a 50 year period of

analysis, there is a 35% probability that a storm will exceed +13 feet NAVD 88 and the levees/floodwalls have a 70% chance of containing a 100-year storm event. Based on the intermediate rate of sea-level rise, there is a 1% probability that a storm event will exceed +13 feet NAVD 88 in any given year. Further, based on a 50 year period of analysis there is a 40% probability that a storm will exceed +13 feet NAVD 88 and the levees/floodwalls have a 58% chance of containing a 100-year storm event. Based on the high rate of sea-level rise, there is a 2% probability that a storm event will exceed +13 feet NAVD 88 in any given year. Over the 50-year period of analysis, there is a 61% probability that a storm will exceed +13 feet NAVD 88. The levees/floodwalls have a 21% chance of containing a 100-year storm event.

The District will consider potential long term effects of climate change and sea level rise to fish and wildlife resources.

16. Page 15, Recommendation 11:
    a. The District will continue to monitor for piping plover and other Federal and state-listed species as part of the post construction beach nourishment requirements for Phase I and will continue to send the monitoring results.
    b. For Phase II, Contracts 3 and 5 are the only contracts with anticipated construction on/around 300 feet of the beach; prior to the start of construction between March 15 - August 31, the District will monitor for piping plovers and their nests. However, the District and the non-Federal sponsor (NJDEP) feel that daily surveys of the project area beach is excessive, particularly for this project area in which no plovers have been observed nesting on any beach west of Sandy Hook in Raritan Bay. The District proposes to monitor one time per week, two weeks prior to the start of construction within the plover window. Once construction begins, regularly scheduled monitoring, as per the 2011 Phase I coordination, would continue at twice per month in April and May, and once per month in June. If any plovers are observed, USFWS will be consulted.

17. Page 15, Recommendation 12: The District will survey for seabeach amaranth no more than one week prior to the start of Contract 3 construction, if it occurs between May 15 - November 30. If amaranth is found, fencing will be placed as described, and USFWS will be alerted.

18. Page 15, Recommendation 13: As agreed to on other USACE projects for the Indiana bat, instead of seasonally restricting removal of trees over three inches diameter at breast height to protect potential northern long-eared bat habitat, a mist-net survey will be conducted to determine presence of the species in the contract area. The survey would only be conducted if tree removal is proposed during the northern long-eared bat season, between April 1 and September 30. A qualified contractor with demonstrated experience conducting surveys of the northern long-eared bat would be hired to conduct a survey one week prior to any tree removal activities. Before hiring, a brief report will be submitted to USFWS

outlining the contractor's qualifications for the Service's approval. An example of the report content requirements and scope of work (SOW) for this effort is provided in Appendix A. Please provide any comments on the SOW to the District upon receiving this letter.

19. Page 15, Recommendation 14: The District will coordinate with NJDEP on state listed species.

20. Page 15, Recommendation 15: The District, in coordination with NJDEP, will determine if additional osprey platforms are needed.

21. Page 15, Recommendation 16: An array of alternatives for the footprint of the floodwall and road closure gate were considered prior to selecting the design.

    Coordination with USFWS was initiated in 2012 on the Green Brook Sebrings Mills[1] project for Migratory Bird Treaty Act (MBTA) compliance, in which the clearing of any woody vegetation including shrubs and trees was also prohibited from 15 March through 31 July, unless it could be documented that there are no species protected under the MBTA either trying to establish or have established nests, including nests with fledglings relying on nests to take short flights and to learn to feed. The District and USFWS began developing Migratory Bird Survey Protocols and Guidance for a pre-clearing nest survey; updates were made to reflect comments from USFWS and is attached in Appendix B. The District proposes to continue this coordination, to finalize a protocol, and to use pre-clearing surveys to determine if clearing of vegetation can occur within the MBTA seasonal restriction. Please provide comments on Appendix B and concurrence with this process upon receiving this letter.

22. Page 15, Recommendation 17: As required, Beach Management Plans will be developed by USFWS in coordination with ENSP, the USACE and local municipalities to minimize disturbance to listed species.

23. Page 15, Recommendation 18: Coordination was initiated to include native pollinator seed mixes into the mitigation site. See item 5 above for additional information.

Thank you for providing the updated PAL as a supplement to the 1999 FWCA report. Responses, along with the PAL, will be included in the NEPA update for Phase II. If you have any questions regarding the responses provided, please contact Ms. Ann Marie DiLorenzo at ann.m.dilorenzo@usace.army.mil, or at 917-790-8726. We look forward to continued coordination as the NEPA document becomes available, and as the wetland mitigation plans progress.

[1] Coordination occurred between Ms. Kimberly Rightler and Mr. Ron Popowski.

Sincerely,

Mr. Peter Weppler
Chief, Environmental Analysis Branch

Appendices:
Appendix A: Excerpts from an Example Scope of Work for Northern Long-Eared Bat Survey
Appendix B: DRAFT Migratory Bird Treaty Act Compliance Bird Survey Protocol

Enclosures:

USFWS Planning Aid Letter for Phase II of Port Monmouth dated April 3, 2015

CC:

Ms. Karen Greene, National Marine Fisheries Service
Ms. Kelly Davis, NJ Department of Environmental Protection LURP
Ms. JoDale Legg, NJ Department of Environmental Protection, LURP
Ms. Kara Turner, NJ Department of Environmental Protection, LURP
Ms. Debbie Voelbel, NJ Department of Environmental Protection, Bureau of Coastal Engineering
Mr. William Dixon, NJ Department of Environmental Protection, Bureau of Coastal Engineering
Mr. Tom Slowinski, NJ Department of Environmental Protection, Bureau of Dam Safety and Flood Control

Appendix A:
Excerpts from an Example Scope of Work for Northern Long-Eared Bat Survey

1. **General Information:** Per guidance on USFWS, Endangered Species, northern long eared bat webpage (http://www.fws.gov/midwest/endangered/mammals/nlba/), the Indiana bat 2015 Summer Survey Guidance can be used for northern long-eared bat presence/probable absence surveys for the 2015 field season; the Contractor and District will confirm this with USFWS prior to survey work plan formulation. The northern long-eared bat season is from April 1 and September 30.

2. **Statement of Qualifications for Northern Long-Eared Bat survey and Collection Permit:** The contractor will obtain from the New Jersey Division of Fish and Wildlife, Wildlife Permits Unit, a collection permit for the Northern Long-Eared Bat survey.

   In addition, the contractor will prepare a brief report that demonstrates their qualifications for conducting Northern Long-Eared Bat surveys. This report will be submitted to the US Fish and Wildlife Service (Service) by the District for the Service's approval. The content of the report shall include the following information about the individuals who will be performing the survey:
   a) Level of training and field experience in mist-netting bats and handling bats in general;
   b) Experience in capturing and identifying Northern Long-Eared Bats in the field (i.e., approximate number of Northern Long-Eared Bats captured and personally identified in the field, or provide the number of years of experience and an estimate of number of projects the individual has participated in where Northern Long-Eared Bats were caught);
   c) Level of experience of hibernacula surveys;
   d) Level of expertise with radio telemetry, bat detection systems, pit tags, or other specialized relevant techniques;
   e) Resumes;
   f) Two references who can confirm level of training and field experience;
   g) A copy of a New Jersey State scientific collecting permit.

3. **Northern Long-Eared Bat survey work plan:** The contractor will prepare a work survey plan describing the proposed methodologies and proposed netting areas. The work plan will include an introduction, survey objectives, equipment to be used, photographs of proposed netting locations and general site characteristics and will delineate the proposed netting locations on a USGS quad map and an aerial. The Draft Work Plan will be submitted to the U.S. Fish and Wildlife Service for review.

4. **Northern Long-Eared Bat Survey and Report:** The contractor will conduct an Northern Long-Eared Bat mist survey in accordance with the following guidelines:

   a) Netting Season and Conditions
   Surveys are to be conducted between April 1 and September 30. The mist net survey shall be conducted during calm, clear weather in temperatures above 10 C. There is some

evidence that small myotine bats avoid brightly lit areas, perhaps as predator avoidance. Nets should be set under the tree canopy where they are out of the moonlight, particularly when the moon is half-full or greater.

b) Equipment and Net Placement
Mist nets- use the finest, lowest visibility mesh commercially available:
1. Currently, the finest net on the market is 75 denier, 2 ply, denoted 75/2 (Arndt and Schaetz 2009); however, the 50 denier nets are still acceptable for use at this time.
2. Mesh of approximately 1½ inches (38 millimeters).
3. Hardware – No specific hardware is required. There are many suitable systems of ropes and/or poles to hold the nets.

To minimize potential for disease transmission, any equipment that comes in contact with bats should be kept clean and disinfected, following approved protocols; this is particularly a concern relative to white-nose syndrome (WNS). Disinfection of equipment to avoid disease transmission (e.g., WNS) is required; protocols are posted at http://www.whitenosesyndrome.org/. Federal and state permits may also have specific equipment restrictions and disinfection requirements.

The net should be placed in potential travel corridors, such as streams or logging trails, typically are the most effective places. Place the nets approximately perpendicular across the corridor. Nets should fill the corridor from side to side, extending beyond the corridor boundaries when possible, and from stream (or ground) level up to the overhanging canopy. Nets of varying widths and heights may be used as the situation dictates. A typical set is at least 5 m to 9 m high consisting of two or more nets stacked on top one another and from 6 m to 18 m wide. If netting over water, ensure there is enough space between the net and the water so that captured bats will not get wet. Occasionally, it may be desirable to net where there is no good corridor. Take caution to get the nets up into the canopy.

Although no minimum spacing between mist-nets is specified, the contractor will attempt to evenly distribute net set-ups throughout suitable habitat and must provide written justification in their report if net set-ups were not distributed throughout suitable habitat (i.e., why were they clumped?).

The shining of lights, and noise will be kept to a minimum with no smoking around the survey sites. In addition, the use of radios, campfires, running vehicles, punk sticks, citronella candles and other disturbances are not be permitted within 300 feet of mist nets during surveys.

The Contractor will photo-document placement of nets.

c) **Level of Effort**
Linear project - a minimum of 6 net nights per km (0.6 miles) of suitable summer habitat (required for the Northeast and Appalachian Recovery units)

Maximum of 3 nights of consecutive netting at any given net location. After 3 consecutive nights of netting at the same location, you must change net locations or wait at least 2 calendar nights before resuming netting at the same location.
1. If no capture of Indiana bats, then no further summer surveys are necessary.
2. If capture of Indiana bat(s), then stop survey

Sample Period:
1. Begin at sunset; net for at least five hours
2. Each net should be checked approximately every 10 minutes; If nets are monitored continuously, contractor will take care to minimize noise, lights and movement near the nets.
3. No disturbance near the nets, other than to check nets and remove bats

d) **Capture and Handling**
Emphasis will be on minimizing handling and holding bats to as short a time as possible to achieve field study objectives. Indiana bats should not be held for more than 30 minutes after capture, unless the individual is targeted for radiotracking. Bats targeted for radio-tracking should be released as quickly as possible, but no longer than 30 minutes after capture, or as allowed in federal and state permits.

e) **Northern Long-Eared Bat Tracking and Documentation:**
The contractor shall outfit up to three (3) Northern Long-Eared Bats caught with a radio collar and track its movement for five (5) days to assess roosting and foraging locations and behavior. When evaluating the roosting behavior, the contractor shall take notes on the type of roost, if it consistently uses the same structure, and the number of individuals (if applicable) observed sharing the roost structure.

The contractor will prepare a memorandum describing the results of the tracking effort. Photographs and data sheets will be included in the memorandum. The memorandum will be submitted electronically. The contractor will also be prepared to answer any questions from the U.S. Fish and Wildlife Service (Service) regarding the memorandum.

f) Documentation of Survey:
The contractor will prepare a Northern Long-Eared Bat Survey Report discussing the findings of the bat mist survey. Included in the report will be following: Introduction, life history of the Northern Long-Eared Bat, photographs of survey locations and any sketches, a discussion of survey results, conclusion and site sketches, field notes and data sheets.

Appendix B: DRAFT Migratory Bird Treaty Act Compliance Bird Survey Protocol

In order to comply with the Migratory Bird Treaty Act (MBTA), the clearing of any woody vegetation including shrubs and trees is prohibited from 15 March through 31 July unless it can be documented that there are no species protected under the MBTA either trying to establish or have established nests, including nests with fledglings relying on nests to take short flights and to learn to feed, within the project area.

Should the contractor propose to clear within the restricted period, the contractor shall have a wildlife biologist experienced with identifying breeding birds of the northeast conduct a pre-clearing survey. The wildlife biologist shall have a minimum of a B.A/B.S. in Zoology, Wildlife Biology, Ecology, Natural Resources, or another related field from an accredited college or university. In addition, the wildlife biologist shall have demonstrated experience or ability in: conducting presence/absence and censes surveys: nest searching and monitoring experience of nesting in trees,shrubs, herbaceous vegetation and on the ground; behavioral observation. Demonstrated experience shall include a particular emphasis on riparian/deciduous forested species of the northeast, including a coastal environment.

As part of the survey, the wildlife biologist will be required to submit a Statement of Qualifications to the contracting officer to demonstrate experience, and prepare memorandum(s) for record documenting the results of the pre-clearing survey and providing recommendations regarding the ability to perform clearing operations. The wildlife biologist will be required to follow the protocols attached in the specifications. In addition, the wildlife biologist shall furnish all equipment required to conduct the survey. Equipment will include but not be limited to binoculars, spotting scope, video camera, and audio recorder, GPS unit, and any flagging tape to mark inhabited trees.

The wildlife biologist will directly report findings to the contracting officer and the contracting officer will insure that the advice of the wildlife biologist is considered by the contractor. The wildlife biologist will prepare site status sheets for all days they are at the site for the contracting officer. The wildlife biologist will consult with and address any concerns of the recommendations from staff of the USACE Environmental Analysis Branch or from the U.S. Fish and Wildlife Service (USFWS). USACE staff only will have direct contact with USFWS; the wildlife biologist may be required to assist in the coordination effort.

If active nests are found in/around the project area and associated construction activities, tree clearing, including selective cutting and certain construction activities, may still be restricted from 15 March through 31 July pending coordination with USFWS upon nest discovery. In addition, if no records of nesting or fledging activities are discovered, USFWS concurrence is still required prior to any tree clearing activities.

Migratory Bird Survey Protocols and Guidance Specifications Appendix

I. Documentation Requirements

1. The pre-clearing nest survey may be scheduled a maximum of two weeks prior to any anticipated tree clearing and other construction activities planned between 15 March and 31 July.
2. The Statement of Qualifications will be submitted to the Contracting Officer two months prior to the pre-clearing survey and is subject to the approval of the U.S. Fish and Wildlife Service. Contents of the Statement of Qualifications will include the following:
   - Education Background
   - Level of training and field experience in identifying breeding birds in the northeast
   - Two references
3. A Memorandum for Record (MFR) documenting the results of the pre-clearing survey and summarizing recommendations as it pertains to the ability to commence clearing activities will be prepared by the wildlife biologist and submitted to the Contracting Officer immediately after the survey. Contents of the MFR will include the following:
   - Copies of all data sheets completed during the survey
   - Any photographs
   - A copy of the construction drawings indicating general locations of any vegetation supporting active nests

II. Pre-Clearing Survey Protocols

1. Establishing Survey Segments:
   A segment shall be defined as a 300 foot area within designated Limits of Disturbance (LOD) of area to be cleared plus 50 feet extended outward from the LOD to serve as a buffer. As an example, a project for a proposed 1,200 foot levee with a LOD width of 150 ft would be broken into four 300 foot segments with a 250 survey width.

   For data recording purposes, it is recommended that the segments follow the station numbers delineated on the construction drawings.

   Each survey segment will be numbered for identification purposes.

2. Separate Breeding Bird Data Sheets will be used to record survey results for each survey segment.

3. Arrive at starting point in time to start first count 30 minutes before sunrise.

4. In a central location of each survey segment, conduct a 10 minute Observation Period: Record how many each individual species you see or hear within the Observation Period on the Breeding Bird Data Sheet.

5. For any species observed, conduct 10 minute Behavioral Watch Period to determine the breeding status: Record observation results on the Breeding Bird Data Sheet.

6. Following the Observation and Behavioral Watch periods, conduct a general walk through of each segment to identify any potential nests in trees, shrubs, herbaceous vegetation and on the ground.

7. If an active nest is found, record any behavioral observations on the Breeding Bird Data Sheet and the nest information on the Observed Nests Data Sheet including the GPS coordinates of the location. Records shall include any observations of fledglings relying on nests to take short flights and to learn to feed. Mark area containing the nest with flagging tape and note nest location on construction drawings.

8. Prepare a Memorandum for Record summarizing the survey results and recommendations as it pertains to the ability to clear the project site within the established Migratory Bird Treaty Act protection window immediately after the survey. Copies of all data sheets, any photographs and general locations of nest sites marked on construction drawings shall be included with the MFR and be furnished to the Contracting Officer.

Codes for the Indicators of Nesting Birds:

- Possible – PO
  - Birds seen in nesting habitat or singing males present during breeding season
- Probable – PR
  - S-Singing male present on more than one day in the same place
  - P-Pair observed in suitable habitat in breeding season
  - T-Bird or pair holding nesting territory
  - D-Courtship & display, agitated behavior
  - N-Adult birds visiting probable nest site
- Confirmed – CO
  - DD-Distraction display or injury feigning, defensive aggression
  - UN-Used nest found
  - FL-Recently fledged young
  - ON-Adult either on or entering/ leaving nest site
  - FY-Adult with food or young
  - NE-Nest building or excavating nest hole
  - NY-Nest with young

Breeding Bird Survey Data Sheet
Birds Observed on Site

Project Name:_____ Date:_____

Project Location:_____ Time:_____

Survey Segment Identification Number:_____

Weather Conditions:_____

Observer(s) Name:_____

Species	# Observed	# Heard	Breeding Behavior Observed Yes/No	Behavior Code	Habitat Description and Notes

Breeding Bird Survey Data Sheet
Birds Observed on Site (cont'd)

Survey Segment Identification Number:_____

Species	# Observed	# Heard	Breeding Behavior Observed Yes/No	Behavior Code	Habitat Description and Notes

Observed Nest(s) Data Sheet:

Project Name:_____ Date:_____

Project Location:_____ Time:_____

Survey Segment Identification Number:_____

Weather Conditions:_____

Observer(s) Name:_____

Description of nest and species if known	Tree/Shrub Species and Location (GPS coordinates) of nest (including on the ground)	Is nest active or abandoned?

Concerns about project impacts to birds (e.g. likelihood of nests observed to be active during construction, etc.)

Recommendations to Construction Officer: