UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
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Peter Weppler, Chief
Environmental Analysis Branch
Planning Division
New York District
U.S. Army Corps of Engineers
26 Federal Plaza
New York, NY 10278-0900

RE: Draft Final Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement, Essential Fish Habitat Assessment
Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay

Dear Mr. Weppler:

We have reviewed the Draft Final Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement (DEIS) and essential fish habitat (EFH) assessment for the Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay Reformulation Study. The project area includes the Atlantic coast of New York City between East Rockaway Inlet and Rockaway Inlet, areas within Jamaica Bay, and an offshore borrow area.

The report addresses the reevaluation of solutions to flooding attributed to storm surges in Jamaica Bay that inundate the bay shorelines of Rockaway (back bay flooding) and that overtop the Rockaway beachfront and flow across the peninsula to meet the surge into Jamaica Bay (cross shore flooding). The Recommended Plan (RP) has been formulated with two planning reaches, including 1) a reinforced dune and berm construction on the Atlantic shorefront and 2) high frequency flood risk reduction features (HFFRRF) in locations surrounding Jamaica Bay.

The Atlantic shorefront planning reach includes Rockaway Beach between Beach 9th Street and Beach 169th Street and an offshore borrow area in the Atlantic Ocean. The RP includes beach renourishment and construction of a 60 ft. wide beach berm for the length of the reach resulting in approximately 259 acres of dune and beach fill, as well as beach renourishment on a four year cycle for the 50-year life of the project. An approximately 33,000 lf composite seawall, extension of five existing groins and construction of 13 new groins are also proposed. The sand material for beach fill and berm construction will be dredged from an existing, 1830-acre offshore borrow area, two miles south of East Rockaway in waters depths of 35 – 60 ft.

The HFFRRF planning reach consists of flood control subreaches in Cedarhurst-Lawrence, Motts Basin North, Mid-Rockaway – Edgemere, Mid-Rockaway – Arverne, and Mid-Rockaway – Hammels. The RP for all of these subreaches includes construction of 11 acres of rock sills and 5,250 lf of bulkhead, modification of existing and construction of new stormwater outfalls and

culverts, and installation of pump stations. The rock sills are components of natural and nature-based features (NNBFs) proposed for the Mid-Rockaway – Edgemere and Mid-Rockaway – Arverne subreaches, Tidal marsh habitats with upland buffers will be created, restored or enhanced shoreward of the sills and will be designed to allow their shoreward migration with rising sea levels.

Magnuson Stevens Fisheries Management and Conservation Act (MSA)
The project area has been designated as EFH for a number of federally managed species including Atlantic butterfish (*Peprilus triacanthus*), Atlantic mackerel (*Scomber scombrus*), Atlantic sea herring (*Clupea harengus*), black sea bass (*Centropristis striata*), bluefish (*Pomatomus saltatrix*), clearnose skate (*Raja eglanteria*), cobia (*Rachycentron canadum*), king mackerel (*Scomberomorus cavalla*), little skate (*Leucoraja erinacea*), long-finned inshore squid (*Loligo pealei*), monkfish (*Lophius americanus*), red hake (*Urophycis chuss*), scup (*Stenotomus chrysops*), Spanish mackerel (*Scomberomorus maculates*), summer flounder (*Paralichthys dentatus*), whiting (*Merluccius bilinearis*), windowpane flounder (*Scophthalmus aquosus*), winter flounder (*Pseudopleuronectes americanus*), winter skate (*Leucoraja ocellata*) and others.

The project area is also EFH for several highly migratory species including blue shark (*Prionace glauca*), dusky shark (*Carcharhinus obscurus*), sandbar shark (*Carcharhinus plumbeus*), and sand tiger shark (*Odontaspis taurus*). Sand tiger and dusky sharks have also been designated as Species of Concern by NOAA. Species of Concern are those about which we have concerns regarding their status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act (ESA). The goal of designating a species as a Species of Concern is to promote proactive conservation efforts for these species in order to preclude the need to list them in the future.

The MSA requires federal agencies to consult with us on projects such as this that may affect EFH adversely. This process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments, lists the required contents of EFH assessments, and generally outlines each agency's obligations in this consultation procedure.

The EFH final rule published in the Federal Register on January 17, 2002 defines an adverse effect as "any impact which reduces the quality and/or quantity of EFH" and further states that:

> An adverse effect may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystems components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from action occurring within EFH or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

We have reviewed the EFH assessment for this project. The assessment adequately evaluates many of the impacts of the project on EFH in the Atlantic shorefront and Jamaica Bay project reaches, and we agree with your conclusions on those impacts. However, some information, such as a full evaluation of impacts of dredging on the borrow area, was not provided. We understand that at this stage of the planning process, site specific information and design details are not yet

available; as a result additional coordination and consultation will take place during the Preconstruction, Engineering and Design Phase of the project so our EFH conservation recommendations provided in this letter can be refined.

The Atlantic shorefront project plan includes seawall and groin construction, dredging and beach renourishment that will result in 259 acres of dune and beach fill with subsequent renourishment efforts every four years. The NNBF rock sills constructed as part of the Jamaica Bay HFFRRF project have been designed to control erosion, help manage coastal storm risk, and provide opportunities for habitat restoration and enhancement. Construction of the sills will result in a habitat conversion of 11 acres of unconsolidated bottom to hard structure in two sub-reaches. Tidal marshes will be created, restored, or enhanced shoreward of the sills in eroded and/or degraded subtidal and intertidal habitats, and will be designed to allow their shoreward migration with rising sea levels. Construction of the NNBFs will create a mix of low and high marsh habitat and upland buffers that will have a positive effect on EFH, federally managed species and NOAA trust resources.

In the DEIS it states that as HFFRRF features are further developed, additional NEPA documentation and resource agency coordination would be provided, as necessary. We agree with this process. Also, impacts to EFH for longfin inshore squid in the borrow area were not fully evaluated because you were not aware of new research examining squid spawning in the area offshore of Long Island. We will continue to coordinate with your office to further evaluate impacts to EFH of longfin inshore squid in the borrow area, including providing additional EFH conservation recommendations as necessary.

Aquatic Resources

Longfin Inshore Squid

Longfin inshore squid spawn throughout the New York Bight; early life stages are found in coastal waters and throughout Jamaica Bay. Egg masses are demersal and are typically attached to low-relief structure (e.g. rocks, small boulders) on sandy or muddy substrate in water depths less than 50 feet (Jacobson 2005). Recent research indicates that spawning may be concentrated in coastal waters off of the Rockaway peninsula (D. Stevenson, personal communication, 2018), which could result in increased vulnerability to EFH of longfin inshore squid to dredging operations. Our office is currently investigating the locations of highest egg mass concentration, seasonal occurrence, and egg mass residence time to better define EFH, in order to evaluate dredging impacts to the species in the Atlantic shorefront borrow area.

Shellfish

Surf clam (*Spisula solidissima*), razor clam (*Ensis directus*), and tellin (*Tellina agillis*) occur in the vicinity of the offshore borrow area. Shellfish also occur in the Jamaica Bay portion of the project area, including hard clam (*Mercenaria mercenaria*), soft shell clam (*Mya arenaria*), blue mussel (*Mytilus edulis*), oyster (*Crassostrea virginica*), blue crab (*Callinectes sapidus*), and horseshoe crab (*Limulus polyphemus*).

Coen and Grizzle (2007) discuss the ecological value of shellfish habitat to a variety of managed species (e.g. American lobster, American eel, and winter flounder) and have suggested its designation as EFH for federally managed species. Clams are a prey species for a number of

federally managed fish including skates, bluefish, summer flounder and windowpane; siphons of hard clams provide a food source for winter flounder and scup (Steimle et al. 2000). Infaunal species such as clams filter significant volumes of water, effectively retaining organic nutrients from the water column (Nakamura and Kerciku 2000; Forster and Zettler 2004).

Horseshoe crabs may use multiple habitats along the shoreline of the Jamaica Bay reach, including subtidal bottoms, intertidal mudflats, and sandy beaches (Botton et al. 2006). Their eggs are a key seasonal food resource for a number of fish species including summer flounder and winter flounder (Botton and Shuster 2003); as a prey species, horseshoe crabs are considered EFH for those fishes.

Winter flounder

Winter flounder transit inlets such as East Rockaway Inlet to reach spawning areas within mid-Atlantic estuaries when water temperatures begin to decline in the fall. Tagging studies show that most return repeatedly to the same spawning grounds (Lobell 1939, Saila 1961, Grove 1982 in Collette and Klein-MacPhee 2002). Winter flounder typically spawn in the winter and early spring, although the exact timing is temperature dependent and thus varies with latitude (Able and Fahay 1998), however movement into these spawning areas may occur earlier, generally from mid- to late November through December. Winter flounder have demersal eggs that sink and remain on the bottom until they hatch. After hatching, the larvae are initially planktonic, but following metamorphosis they assume an epibenthic existence. Winter flounder larvae are negatively buoyant (Pereira et al. 1999) and are typically more abundant near the bottom (Able and Fahay 1998). These life stages are less mobile and thus more likely to be affected adversely by any impact to benthic habitat. As adults often spawn in shallow water within estuaries such as Jamaica Bay, they are especially vulnerable to benthic impacts associated with construction of the NNBFs in the Jamaica Bay HFFRRF reach.

Anadromous Fishes

Anadromous fishes such as river herring (alewife *Alosa pseudoharengus* and blueback herring *Alosa aestivalis*) use inlets such as East Rockaway Inlet as a migratory pathway to nursery and forage habitat within the estuary beyond the inlet. Alewife and blueback herring spend most of their adult life at sea, but return to freshwater areas to spawn in the spring. Both species are believed to be repeat spawners, generally returning to their natal rivers (Collette and Klein-MacPhee 2002). Because landing statistics and the number of fish observed on annual spawning runs indicate a drastic decline in alewife and blueback herring populations throughout the mid-Atlantic since the mid-1960's (ASMFC 2007), they have been designated as Species of Concern by NOAA.

Increases in turbidity due to the resuspension of sediments into the water column during renourishment can degrade water quality, lower dissolved oxygen levels, and potentially release chemical contaminants bound to the fine-grained estuarine/marine sediments, and can impede river herring migration (Auld and Schubel 1978; Breitburg 1988; Newcombe and MacDonald 1991; Burton 1993; Nelson and Wheeler 1997). Noise from beach renourishment activities may also result in adverse effects. Our concerns about noise effects come from an increased awareness that high-intensity sounds have the potential to harm both terrestrial and aquatic vertebrates (Fletcher and Busnel 1978; Kryter 1984; Popper 2003; Popper et al. 2004).

Buckel and Conover (1997) in Fahay et al. (1999) reported that diet items of juvenile bluefish include *Alosa* species such alewife and blueback herring. Juvenile *Alosa* species have also been identified as prey species for windowpane flounder and summer flounder in Steimle et al. (2000). As a result, activities that adversely affect the spawning success and the quality for the nursery habitat of these anadromous fish can adversely affect the EFH for juvenile bluefish, windowpane and summer flounder by reducing the availability of prey items.

Wetlands

Jamaica Bay is regionally significant for shellfish and marine, estuarine, and anadromous fishes, as well as for its significant migratory and wintering waterfowl concentrations. The wetlands and uplands in the bay are important as fish nursery areas and foraging areas for shorebirds and waterbirds. Wetlands in the project area perform many important ecological functions including water storage, nutrient cycling and primary production, sediment retention, water filtration or purification, and groundwater recharge. The estuary is subject to severe anthropogenic impacts, and has incurred a loss of 63% of wetlands between 1951 and 2003. During this time period, the rate of marsh loss increased from 17 acres lost per year during 1951 – 1974 to 33 acres lost per year during 1989 – 2003 (NPS 2007). Vegetated wetlands are also considered to be special aquatic sites under the Clean Water Act. Because of their ecological value, impacts on these special aquatic sites should be avoided and minimized; wetlands should be created, restored, or enhanced where feasible.

Tidal wetlands provide nursery habitat for many species of fish, including winter flounder and summer flounder. Summer flounder larvae migrate inshore into estuarine nursery areas, settling to the bottom of tidal marsh creeks to transform to their juvenile stage. These juveniles will then make extensive use of the creeks, preying on creek fauna such as Atlantic silversides and mummichogs. Juvenile summer flounder may also be found in salt marsh cord grass habitat during flood tides. Juveniles utilize the marsh edges for shelter, burying themselves in the muddy substrates. Keefe and Able (1992) in Packer et al. (1999) found that summer flounder juveniles that inhabit tidal marsh creeks exhibit the fastest growth. Larval and juvenile black sea bass also concentrate and feed extensively and shelter within these habitats. As a consequence, growth rates are high and predation rates are low, which makes these habitats effective nursery areas. Juvenile black sea bass are also known to inhabit the mouths of tidal marsh creeks as well as shallow shoals and tidal marsh edge habitat. Within these habitats, young-of-year black sea bass display high site fidelity; they may be territorial and move very little (Musick and Mercer 1977; Werme 1981; Able and Hales 1997). Black sea bass have been observed defending small areas of nursery habitat rather than fleeing to other suitable areas (Able and Fahay 1998).

An unimpeded marsh edge is important to estuarine and tidal marsh community dynamics, both to allow tidal flushing and concomitant transport of plankton, nekton, nutrients and sediment as well as to enable access to edge habitat by estuarine biota, including federally managed species, diadromous fishes, and other important prey for federally managed species. Marshes and marsh edge habitat can therefore be considered EFH for summer flounder, black sea bass, and other species.

Atlantic Shorefront

Beach Nourishment and Dredging

The dredging of sand for beach nourishment has the potential to impact both the EFH of a particular species as well as the organisms themselves in a variety of ways. Dredging can result in the impingement of eggs and larvae in the dredge plant and create undesirable suspended sediment levels in the water column. As stated above, increased suspended sediment levels can reduce dissolved oxygen, mask pheromones used by migratory fishes, and smother immobile benthic organisms and newly-settled juvenile demersal fish (Auld and Schubel 1978; Breitburg 1988; Newcombe and MacDonald 1991; Burton 1993; Nelson and Wheeler 1997). Sustained water column turbulence can reduce the feeding success of sight-feeding fish such as winter flounder and summer flounder.

Dredging can remove the substrate used by federally managed species as spawning, refuge and forage habitat. Benthic organisms that are food sources for federally managed species may also be removed during dredging. These impacts may be temporary if the substrate returns to preconstruction condition and the benthic community recovers with the same or similar organisms. The impacts may be permanent if the substrate is altered in a way that reduces its suitability as habitat, and if the benthic community is altered in a way that reduces its suitability as forage.

Overall, the dredging and placement of sand along the coastline will have some adverse effects on EFH and federally managed species due to the entrainment of early life stages in the dredge, alteration or loss of benthic habitat and forage species, and altered forage patterns and success due to increased, noise, turbidity and sedimentation. We agree that some effects will be temporary and others can be minimized using some of the management practices mentioned in the EFH assessment, such as dredging in the fall to avoid sensitive life stages of certain species, not dredging deep holes and leaving similar substrate in place to allow for recruitment.

Dredging in the borrow area can also affect EFH adversely through impacts to prey species. The EFH final rule states that the loss of prey may be an adverse effect on EFH and managed species because the presence of prey makes waters and substrate function as feeding habitat; the definition of EFH includes waters and substrate necessary to fish for feeding. Steimle et al. (2000) reported that winter flounder diets include the siphons of surf clams (*Spisula solidissima*). As a result, activities that adversely affect surf clams can adversely affect the EFH for winter flounder by reducing the availability of prey items

According to the DEIS, the offshore borrow area provides habitat for Atlantic surf clams; however surveys conducted by the USACE in 2003 and by the NYSDEC in 2012 indicate that the borrow area itself contains very low to no localized populations of surf clams. To ensure that impacts to surf clams are minimized, the borrow areas should be surveyed prior to each dredging cycle and areas of high densities should be avoided. Copies of the shellfish survey results should also be provided to us prior to any dredging in the borrow area.

The Mid-Atlantic Fisheries Management Council (MAFMC) has developed a policy statement on sand mining and beach nourishment activities that may affect federally managed species under their purview including summer flounder, scup, black sea bass, monkfish and butterfish.

These policies are intended to articulate the MAFMC's position on various development activities and facilitate the protection and restoration of fisheries habitat and ecosystem function. The MAFMC's policies on beach nourishment are:

1. Avoid sand mining in areas containing sensitive fish habitats (e.g., spawning and feeding sites, hard bottom, cobble/gravel substrate, shellfish beds).

2. Avoid mining sand from sandy ridges, lumps, shoals, and rises that are named on maps. The naming of these is often the result of the area being an important fishing ground.

3. Existing sand borrow sites should be used to the extent possible. Mining sand from new areas introduces additional impacts.

4. Conduct beach nourishment during the winter and early spring, when productivity for benthic infauna is at a minimum.

5. Seasonal restrictions and spatial buffers on sand mining should be used to limit negative impacts during fish spawning, egg development, young-of-year development, and migration periods, and to avoid secondary impacts to sensitive habitat areas such as SAV.

6. Preserve, enhance, or create beach dune and native dune vegetation in order to provide natural beach habitat and reduce the need for nourishment.

7. Each beach nourishment activity should be treated as a new activity (i.e., subject to review and comment), including those identified under a programmatic environmental assessment or environmental impact statement.

8. Bathymetric and biological monitoring should be conducted before and after beach nourishment to assess recovery in beach borrow and nourishment areas.

9. The effect of noise from mining operations on the feeding, reproduction, and migratory behavior of marine mammals and finfish should be assessed.

10. The cost effectiveness and efficacy of investments in traditional beach nourishment projects should be evaluated and consider alternative investments such as non-structural response and relocation of vulnerable infrastructure given projections of sea level rise and extreme weather events.

Sand Placement Effects on Fishes

Beach renourishment activities produce turbidity and sound impacts; fish may move away from those impacts in open water but cannot avoid them in inlets and channels. Fish that transit through inlets and channels on spawning migrations are therefore vulnerable to these impacts. As discussed earlier, winter flounder and river herring ingress through inlets to access estuarine spawning habitats. Winter flounder migrate into mid-Atlantic estuaries from mid-November through December. River herring enter these same estuaries on their spawning migrations from early March through May. Because project plans include beach renourishment along Rockaway

Beach at East Rockaway Inlet, sequencing of beach nourishment activities may be necessary in order to avoid impacts to ingressing winter flounder and river herring. This may include seasonal in-water work restrictions for winter flounder from November 15 through December 31 and from March 1 to May 31 for river herring. Any in-water work undertaken at the inlet at other times of the year should be designed with 50% of the inlet unobstructed to allow ingress and egress of fish past the work site.

Jamaica Bay HFFRRF

Impacts of NNBF Construction on EFH

The Jamaica Bay HFFRRF project plan proposing construction of NNBFs in the Edgemere and Arverne subreaches will result in permanent impacts to shallow water and tidal wetland habitat, including EFH for winter flounder. Rock sills are proposed for two subreaches of the Jamaica Bay HFFRRF, including four sections in Edgemere totaling approximately 3100 lf and three sections in Arverne totaling approximately 4800 lf, with a combined footprint of 11 acres. Tidal marshes will be created, restored, or enhanced shoreward of the proposed rock sills and will be designed to allow their shoreward migration with rising sea levels. We appreciate the Corps' use of NNBFs in this project and encourage their use in future projects when practicable.

The construction of the NNBFs, including rock sills and tidal wetlands, will result in a permanent loss of winter flounder EFH associated within the footprints of the sills and in areas shoreward of the sills due to natural sediment accretion and tidal wetlands creation. Seasonal in-water work restrictions from January 1 to May 31 will minimize impacts to winter flounder early life stages and their EFH during the construction activities and the NNBF features will provide habitat for other aquatic resources.

Impacts to Prey Species

Construction of the NNBFs may impede access by horseshoe crabs to spawning beaches. Horseshoe crab eggs are an important seasonal food source for summer flounder and winter flounder. Seasonal in-water work restrictions in areas suitable for horseshoe crab spawning from April 15 to July 15 minimize adverse effects to this prey species. Shellfish are also prey species for a number of federally managed fish including bluefish, scup, skates, summer flounder, windowpane and winter flounder. Site design and placement of the NNBFs should include an evaluation of shellfish resources in the project area; NNBFs should not be placed in areas of moderate to high densities of shellfish.

Tidal flushing and access to tidal marsh fringe habitat are important to maintain estuarine and marsh community dynamics; impediments to marsh edge habitat may therefore impact EFH for federally managed species, including winter flounder and summer flounder. Seven rock sills, approximately 350 lf to 2000 lf, are proposed in the Edgemere and Arverne subreaches. The individual sills as proposed appear to be of solid construction, with gaps between each sill but no gaps (vents/windows) within the sills. Vents/windows provide a number of benefits, including facilitating transport of plankton, nekton, sediment and nutrients into aquatic food webs that include federally managed species, diadromous fishes, and other important prey for federally managed species. These openings should generally be 10-15 feet in width, as measured from the bottom, and spaced evenly across the sill (e.g., one every 100 feet). Rock sills without

vents/windows placed at regular intervals can severely restrict biological functions and impact the marsh community. Additionally, though rare, displacement of sills either as a whole or as individual elements is a concern in highly dynamic environments.

All living shorelines must be properly maintained, which may require periodic repair of sills/reefs. A long-term maintenance plan should be developed for the proposed NNBFs, including plans to address the potential migration of hardened materials/structures. As we continue to coordinate on this project and plans are developed, information on incorporation of vents/windows and dropdowns into the sill design, overall wetland design, invasive species management, and monitoring, maintenance, and long-term stewardship of the NNBFs should be provided to us.

Essential Fish Habitat Conservation Recommendations

Pursuant to Section 305 (b) (4) (A) of the MSA, we offer the following EFH conservation recommendations to minimize adverse effects to EFH for summer flounder, bluefish, windowpane, little skate and other federally managed species:

Atlantic Shorefront

1. Coordinate with our office to determine impacts of dredging in the borrow area to longfin inshore squid EFH. If warranted, we will provide you with additional EFH conservation recommendations to address impacts to longfin inshore squid as information becomes available. We will work with you to incorporate conservation recommendations into the initial construction or subsequent maintenance dredging events.

2. Reinitiate consultation prior to each dredging event. Notification should be provided to our office prior to commencement of each dredging event and should include the location of the segment to be nourished, volume of sand to be dredged, depth of sand to be removed and the boundaries of the dredging within the borrow area.

3. Design and undertake dredging within the borrow areas in a manner that maintains geomorphic characteristics of the borrow area. Employ best management practices such as not dredging too deeply and leaving similar substrate in place to allow for benthic community recovery.

4. Incorporate MAFMC policies on sand mining and beach nourishment into the final design of this project and its long-term management plan as practicable.

5. Avoid areas of high surf clam densities within the borrow area. To ensure that impacts to surf clams are minimized, the borrow areas should be surveyed prior to each dredging cycle and areas of high densities should be avoided. Copies of the shellfish survey results should also be provided to us prior to any dredging in the borrow area.

6. Avoid turning on the intakes on the dredge plant until the dredge head is in the sediment and turn off before lifting out of the sediment to minimize larval entrainment in the dredge.

7. Provide annual reports to us on the acres of borrow area disturbed, dredging location, cubic yardage removed, depth of removal and post-dredging bathymetry of the borrow area.

8. Avoid beach renourishment activities in East Rockaway Inlet from November 15 to December 31 (winter flounder) and March 1 to May 31 (river herring) of each year to maintain access to estuarine and freshwater spawning habitats. At other times of the year, at least 50 % of the channel should remain unobstructed to allow ingress and egress of these species.

9. Use best management practices to minimize the release of suspended sediments during beach nourishment activities, including placing the material above the spring high tide line at low tide where possible and using turbidity barriers where feasible.

Jamaica Bay HFFRRF

10. Avoid construction of NNBFs below mean low water (MLW) from January 1 to May 31 of each year to minimize impacts to EFH for winter flounder. Work is permissible above MLW when the work area is exposed during low tide cycles.

11. Avoid construction of NNBFs from April 15 to July 15 of each year to protect horseshoe crab spawning habitat.

12. NNBFs should not be placed in areas of moderate to high shellfish density as practicable.

13. Incorporate vents/windows and dropdowns into rock sill design according to best management practices. Sills should be designed to optimize tidal flow and to ensure that horseshoe crabs do not get trapped behind them.

14. Provide design plans for tidal wetland creation/restoration and enhancement as well as monitoring, maintenance, adaptive management and long-term stewardship plans to us for review prior to construction.

15. Continue to coordinate with us during the Preconstruction, Engineering and Design Phase of the project.

Please note that Section 305 (b)(4)(B) of the MSA requires you to provide us with a detailed written response to these EFH conservation recommendations, including the measures adopted by you for avoiding, mitigating, or offsetting the impact of the project on EFH. In the case of a response that is inconsistent with our recommendations, Section 305 (b)(4)(B) of the MSA also indicates that you must explain your reasons for not following the recommendations. Included in such reasoning would be the scientific justification for any disagreements with us over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate or offset such effect pursuant to 50 CFR 600.920 (k). Please also note that a distinct and further EFH consultation must be reinitiated pursuant to 50 CRF 600.920 (j) if new information becomes available, or if the project is revised in such a manner that affects the basis for the above EFH conservation recommendations.

Endangered Species Act

Atlantic Large Whales

Federally endangered North Atlantic right and fin whales occur year round off the New York coast in the Atlantic Ocean. Right whales are most likely to occur in the offshore borrow areas between November and April and fin whales are most likely to occur between October and January. Right whales feed on copepods and could be foraging in the action area if suitable forage is present; right whales are also likely to occur in the action area while migrating along the Atlantic coast. Fin whale sightings off the eastern United States are centered along the 100m isobath, but fin whales are well spread out over shallower and deeper water, including submarine canyons along the shelf break (Kenney and Winn 1987; Hain et al. 1992). Fin whales feed on small schooling fish, squid, and crustaceans, including krill. Sperm and sei whales are limited to the offshore area beyond the continental shelf.

Sea Turtles

Four species of ESA listed threatened or endangered sea turtles under our jurisdiction are seasonally present off the New York coast in the Atlantic Ocean and could occur in the Rockaway Inlets and Jamaica Bay: the threatened Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead, the threatened North Atlantic DPS of green, and the endangered Kemp's ridley and leatherback sea turtles. Sea turtles typically occur along the Long Island coast from May to mid-November, with the highest concentration of sea turtles present from June through October.

Atlantic Sturgeon

Atlantic sturgeon are present off the New York coast in the Atlantic Ocean and could occur in the Rockaway Inlets and Jamaica Bay. The New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPS of Atlantic sturgeon are endangered; the Gulf of Maine DPS is threatened. Adult and subadult Atlantic sturgeon originating from any of these DPSs could occur in the proposed project area. As young remain in their natal river/estuary until approximately age 2, and early life stages are not tolerant of saline waters, no eggs, larvae, or juvenile Atlantic sturgeon will occur within the waters off the New York coast in the Atlantic Ocean or in the Rockaway Inlets and Jamaica Bay.

Shortnose Sturgeon

Shortnose sturgeon are not expected to be present in waters south of Long Island.

As project details develop, we recommend you consider the following effects of the project on whales, sea turtles, and sturgeon:

- For any impacts to habitat or conditions that temporarily render affected water bodies unsuitable for the above-mentioned species, consider the use of timing restrictions for in water work.
- For activities that increase levels of suspended sediment, consider the use of silt management and/or soil erosion best practices (i.e., silt curtains and/or cofferdams).
- Consider the related effects to water quality after an outfall is built (i.e. , will the standards still be met, will the effluent volume change, and will there be any effects to the species).

- For pile driving or other activities that may affect underwater noise levels, consider the use of cushion blocks and other noise attenuating tools to avoid reaching noise levels that will cause injury or behavioral disturbance to sea turtles, and sturgeon - see the table below for more information regarding noise criteria for injury/behavioral disturbance in sturgeon or sea turtles.

Organism	**Injury**	**Behavioral Modification**
Sturgeon	206 dB re 1 µPaPeak and 187 dB cSEL	150 dB re 1 µPaRMS
Sea Turtles	180 dB re 1 µPaRMS	166 dB re 1 µPaRMS

Depending on the amount and duration of work that takes place in the water, listed species of whales, sea turtles, and sturgeon may occur within the vicinity of your proposed project. The Corps will be responsible for determining whether the proposed action may affect listed species. If you determine that the proposed action may affect a listed species, you should submit your determination of effects, along with justification and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Greater Atlantic Regional Fisheries Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930 or nmfs.gar.esa.section7@noaa.gov. Please be aware that we have recently provided on our website guidance and tools to assist action agencies with their description of the action and analysis of effects to support their determination. See - http://www.greateratlantic.fisheries.noaa.gov/section7. After receiving a complete, accurate comprehensive request for consultation, in accordance to the guidance and instructions on our website, we would then be able to conduct a consultation under section 7 of the ESA. Should project plans change or new information become available that changes the basis for this determination, further coordination should be pursued. If you have any questions regarding these comments, please contact Edith Carson-Supino (978-282-8490; Edith.Carson-Supino@noaa.gov).

We look forward to our continued coordination with your office on this project as it moves forward. We can work with your staff to complete a programmatic consultation for the beach replenishment portion of the project to reduce the need for individual consultations. If you have any questions or need additional information, please do not hesitate to contact Ursula Howson at ursula.howson@noaa.gov or (732) 872-3116.

Sincerely,

Louis A. Chiarella,
Assistant Regional Administrator
for Habitat Conservation

cc:
ACOE – C. Alcoba, D. Mezey
PRD – D. Marrone, E. Carson-Supino
FWS – S. Sinkevich
EPA – D. Montella
NYSDEC – D. McReynolds
NEFMC – T. Nies
MAFMC – C. Moore
ASMFC – L. Havel

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
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26 FEDERAL PLAZA
NEW YORK NEW YORK 10278-0090

Environmental Analysis Branch

November 16, 2018

Mr. Lou Chiarella,
Assistant Regional Administrator for Habitat Conservation
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, Mass. 01930-2276

Attention: Karen Green, Field Supervisor, Sandy Hook Field Office, NJ
Ursula Howson, Biologist, Sandy Hook Field Office, NJ

Dear Mr. Chiarella:

The U.S. Army Corps of Engineers (USACE), New York District (District) is in receipt of National Marine Fisheries Service (NMFS) EFH Conservation Recommendations, dated October 31 2018 submitting recommendations on the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay Draft Integrated Hurricane Study.

Please find attached find our responses to your Conservation Recommendations. The District looks forward to working with your office throughout the Pre-Engineering and Design and Construction phases of this study and thank you for your continued assistance and input to this process which helps to advance the execution of this regionally-significant project.

If you require any additional information, please feel free to contact Ms. Daria Mazey Project Biologist/Planner at 917-790-8726.

Sincerely,

Peter Weppler
Chief, Environmental Analysis Branch

Enclosure
cc: NMFS, Green

Please be assured that a full evaluation of impacts within the borrow area was completed as part of this study. USACE has been working for many years to consolidate information to support consultation for this project. Two factors associated with the latest revisions to the HSGRR/EIS and attached EFH Assessment appear to have led to concerns regarding scope of the evaluation of the borrow area:

- In effort to consolidate the HSGRR/EIS, the previously provided *Borrow Area Study for the Atlantic Coast of Long Island, East Rockaway New York, Storm Damage Reduction Project* (Tetra Tech 2015) which was Appendix B2 in the 2016 Draft Report that NMFS previously reviewed was not provided as a separate appendix for the Revised Draft, but rather incorporated throughout the EIS and EFH Assessment. USACE has attached this information to NMFS as part of our response, and will include it on the public website for the project as supplementary information.
- To address a comment about addressing all portions of the study area equally, sections previously focused primarily on the borrow area, were subsumed within the discussion pertaining to Atlantic Shorefront Planning Reach. A discussion of the potential direct and indirect impacts within the borrow area are discussed as they pertain to four distinct impact categories (i.e., Sections 4.1 -4.4, and Sections 5.1-5.3). As such, a consolidated section pertaining specific to effects within the borrow area was not included, but this information is still captured in the analysis and the EIS.

As previously discussed, additional coordination is warranted during the Preconstruction, Engineering and Design Phase of the project. Based upon this additional coordination and potential data analysis specific to refined design details, USACE expects to continue to work with NMFS and include the appropriate references to existing and previous data collection as well as refine conservation recommendations as necessary.

From:	Ursula Howson - NOAA Federal
To:	Mazey, Daria S CIV USARMY CENAN (USA)
Cc:	Gallo, Jenine CIV CENAN CENAD (US); Alcoba, Catherine J CIV USARMY CENAN (US); Karen Greene - NOAA Federal
Subject:	[Non-DoD Source] EFH concurrence - East Rockaway Inlet to Rockaway Inlet and Jamaica Bay Draft Integrated Hurricane Study.
Date:	Tuesday, December 4, 2018 1:19:41 PM

Hello Daria,

Thank you for providing the requested information on the Rockaway borrow area as per our letter dated October 31, 2018. Regarding your letter dated November 16, 2018 responding to our EFH conservation recommendations (CRs), we concur with your comments and understand that additional coordination on those CRs will occur with us during the preconstruction, engineering and design phase of the project. We look forward to our continuing coordination with your office.

Thank you,
Ursula

--

Ursula Howson, PhD
NOAA/National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
Habitat Conservation Division
James J. Howard Marine Sciences Laboratory
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