ADDITIONAL CORRESPONDENCE

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

SEP 15 2017

Barbara Newman
Chief, Permits & Enforcement Branch
US Army Corps of Engineers
New England District
Regulatory Division
696 Virginia Road
Concord, MA 01742-2751

Re: Conley Marine Terminal Berths 10 and 11 Improvement Project, NAE-2012-0440

Dear Ms. Newman:

We have reviewed your letter dated August 18, 2017, requesting Essential Fish Habitat (EFH) consultation for the subject project. In addition, we have received an EFH assessment prepared by Normandeau Associates for the Massachusetts Port Authority (MassPort), dated February 16, 2017. According to the information provided, MassPort proposes to make the following improvements to the Conley Terminal berths 10 and 11: fill approximately 23,500 square feet (sf) of intertidal/subtidal habitat as part of the installation of a steel sheet bulkhead (Phase I); regrade and armor up to 59,900 sf of mostly sub-tidal silty and sand habitat in order to realign the Berth 10 shoreline (Phases II and III); install approximately 900 steel pilings and over 385 linear feet of steel sheet piles in order to construct the Berth 10 wharf (Phase III); dredge approximately 10 acres of berth areas to a depth of at least -50 feet mean lower low water (MLLW) (Phases II and VI); and to dispose of between 300,000 and 400,000 cubic yards of excavated material at the Boston Harbor Main Shipping Channel confined aquatic disposal (CAD) cell and at the Massachusetts Bay Open Water Disposal site (Phases II and VI). This project also includes repairs to existing seawalls/bulkheads, the installation of wave attenuation structures, a realignment/upgrade of the existing docking facilities and localized dredging work at the adjacent Lobsterman Cove site (Phases I, II, and IV). Phases II and VI also includes rock removal using underwater blasting and mechanical means.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife Coordination Act require federal agencies to consult with one another on projects such as this. Insofar as a project involves EFH, as this project does, this process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments and generally outlines each agency's obligations in this consultation procedure. We offer the following comments and recommendations on this project pursuant to the above referenced regulatory process.

General Comments

As discussed in the EFH assessment, Boston Harbor, the Reserved Channel, and the proposed disposal sites support a number of important living marine resources that provide for valuable

recreational and commercial fisheries, as well as species and habitats that are critical to the marine ecosystem. Some of the resources in the project area include federally-managed species such as Atlantic cod, haddock, pollock, red hake, scup, Atlantic mackerel, Atlantic herring, winter flounder, and windowpane flounder, little skate, and winter skate. Furthermore, a number of diadromous fish occur in the project area, including alewife, blueback herring, rainbow smelt, American shad, striped bass, and American eel. In addition, a number of shellfish species may be found in the project area, including softshell clam and blue mussels, and a recreational and commercial fishery for American lobster exists in Boston Harbor.

EFH Assessment Comments

Several sections of the EFH assessment providing information on EFH and other NMFS-trust resources contains information that appears to be incorrect, which we have addressed and clarified below.

Table 4.1 lists EFH for federally-managed species in the 10 minute square that includes the Reserved Channel. Please note that EFH for bluefish are not included in this 10 minute square. It is possible that this error is related to the source of information, which cites an old Habitat Conservation Division website. The correct website is https://www.greateratlantic.fisheries.noaa.gov/habitat/index.html.

In addition, two species of skates (juvenile and adult little skate and juvenile winter skate) should be included in the list of EFH for federally-managed species.

Section 6.1.3 (EFH) lists EFH for federally-managed species in the 10 minute square that includes the Massachusetts Bay Disposal Site. The first paragraph of that section incorrectly states "Pelagic species, such as Atlantic butterfish, Atlantic sea herring, and monkfish, prefer areas with sand and/or gravel bottom," Please note that juvenile, adult, and spawning adult monkfish are demersal and their preferred habitat includes mud bottom, which is found in the Massachusetts Bay Disposal. In addition, while Atlantic butterfish has pelagic life stages, the EFH description for this species does not include bottom habitats. It is correct, however, that Atlantic herring larvae, juveniles and adults are pelagic, and eggs and spawning adults are benthic and prefer gravel, sand, cobble and shell fragments.

Site Characteristics and Impacts Discussion

Loss of soft-bottom habitat

Section 3.1.1 (Soft bottom- sandy/silty mud and rocky (riprap) bottom) and Section 5.9 (Riprap) of the assessment describes the proposed placement of riprap for the construction of Berth 10, and indicates 132,100 sf of new riprap will be placed below the high tide line (HTL). Within this area, 59,900 sf of new riprap will be placed in areas that do not currently contain riprap. The assessment indicates 7,700 sf of existing riprap waterward of the proposed Berth 10 wharf will be removed and restored to soft-bottom habitat. The assessment also describes a 38,200 sf area above the HTL that will be excavated and will become tidal/subtidal area after construction, and is described as contributing to a net gain of tidal/subtidal riprap habitat for the project. Although this area of excavated upland may technically result in tidal/subtidal riprap habitat, we disagree

that this area should be interpreted as restoring productive fishery habitat. Riprap is not a natural benthic habitat, and the marine fauna and flora typically associated with riprap are often less diverse (Peterson et al. 2000; Patrick et al. 2014, 2016), and riprap can have a higher incidence of marine exotic/invasive species compared to native material (Tyrell and Byers 2007; Gulf of Maine Council on the Marine Environment 2010). In addition, because the area under Berth 10 (>132,100 sf) will be entirely shaded by the proposed wharf, many of the functions and values characteristic of intertidal/subtidal habitat will be eliminated or diminished.

Section 5.9 of the assessment suggests that because the riprap placed in Berth 10 may gradually fill in with silt, as observed with the construction of Berth 12 in 1995, the area will revert to bottom habitat similar to the existing mud/sand bottom. However, because the time-frame over which this may be expected to occur is speculative, and the habitat value that may result over several decades in the future unknown, we do not find the basis of this argument justifiable. It is therefore our determination that placement of riprap from the proposed project will result in a net loss of 52,200 sf of soft-bottom habitat, which should be offset through compensatory mitigation.

Finally, Attachment C on page 81 of the EFH assessment references an area of 23,500 sf impacted by fill landward of the proposed bulkhead. This area was referenced on page 38 in the discussions about calculations for riprap fill, but no explanation for the fill or impacts to EFH was provided. In discussions with the Army Corps of Engineers, this 23,500 sf area is existing subtidal, soft-bottom that will be filled behind the proposed bulkhead. This area should be added to the other soft-bottom habitat loss discussed above, resulting in a total impact area of 75,700 sf to soft-bottom habitat.

Oil-contaminated Soils

According to Section 5.4 (Excavation of oil-containing soils) of the EFH assessment, oil-containing soils within uplands, intertidal, and subtidal areas of Berth 10 will be excavated and stockpiled for reuse on site or disposed in an off-site location. The removal of the petroleum contamination is associated with a former Coastal Oil site and will be addressed in a Massachusetts Contingency Plan. As discussed in the EFH assessment, the excavation of this material may result in exposing a "fresh face" of oily soil during construction. MassPort proposes several methods to mitigate the release of petroleum contaminants into the water column of the Reserved Channel for excavation to construct the proposed bulkhead, including an "insitu solidification treatment" that forms a solid barrier behind the proposed bulkhead, "soft controls" during intertidal and subtidal dredging and excavation (i.e., dual turbidity curtains and absorbent booms), and the use of an environmental bucket to remove soft sediments. However, as stated in the assessment, the area of contaminated material contains large cobbles, boulders and other obstructions that would preclude the use of an environmental bucket and require the use of a conventional clamshell bucket dredge in those areas. In addition, the assessment indicates the depth of the water would make it impracticable to use a silt curtain in the deeper sections of the contaminated area. Therefore, for contaminated areas being dredged that are too deep to use a silt curtain and an environmental bucket cannot be used, a time-of-year (TOY) restriction from February 15 to June 30 is needed to protect sensitive early life stages of Winter Flounder from petroleum contaminants during dredging and excavation.

Suspended Sediment and Turbidity

We have determined the proposed dredging within the Reserved Channel, as well as the disposal activities in the Main Ship Channel CAD cell may have adverse effects to NMFS trust resources. The discussions in Section 5.5.1 (Potential impacts associated with dredging) describe the expected turbidity and suspended sediment levels from dredging at the Conley Terminal to have minimal affects to EFH. This determination is apparently based on references to previous dredging projects in Boston Harbor (the reports or specific projects were not cited), which the assessment indicates could range from 4-11 NTU (5-9 mg/L TSS) at a distance of 500 feet, and 8-56 NTU (19-48 mg/L TSS) at a distance of 300 feet from the dredge. We believe this is an underestimation of the turbidity levels that may be expected within the Reserved Channel and in the area of the disposal at the Main Ship Channel CAD cell, and is generally inconsistent with the reported turbidity and suspended sediment levels in previous Boston Harbor dredging projects that we have reviewed. For example, the Plume Monitoring Final Summary Report for the Boston Harbor Inner Harbor Maintenance Dredging Project in 2008, conducted by Batelle for the Army Corps of Engineers (USACE 2009), reported Mystic River CAD cell dredge disposal turbidity readings as high as 75 NTU (220 mg/L) above background at near-bottom. In addition, dredge plumes at the Main Ship Channel CAD cell dredging had turbidity levels as high as 37 NTU, and a number of incidences of turbidity around 20 NTU (50 mg/L) above background, reported 300-500 feet from the dredge. The background turbidity during those dredging and disposal events were generally 1 – 4 NTU.

The EFH assessment concludes the impacts to "EFH species" from suspended sediments would be minimal because there would be at least a 300-foot zone of passage for adult and juvenile fish in the Reserved Channel. However, the proposed limit of dredging for berths 10 and 11 extend from the shoreline approximately 160 feet into the channel. Given that elevated turbidity from the dredging would likely extend 300-500 feet from the dredge, we have determined the turbidity plumes will affect species over nearly the entire channel during dredge operations. In addition, Section 6.2 (CAD Cell) states that the disposal of dredged material in the CAD Cell is not expected to have substantial adverse effects to EFH. The assessment refers to two monitoring studies in Boston Harbor (ENSR 1997 and ENSR 2002) at CAD cells, which reported the highest turbidity and suspended sediment levels at 20-30 NTU and 64 mg/L, respectively, above background 300 feet down current. As discussed above, the Army Corps of Engineers monitoring study conducted during the 2008 Boston Harbor Maintenance Dredging Project reported turbidity plumes as high as 75 NTU and 220 mg/L above background. Some of the high turbidity plume readings in this study were associated with the Maine Ship Channel CAD cell that is being proposed for the Conley Terminal dredging project.

Boston Harbor has been identified as EFH for winter flounder spawning and egg development, and because their eggs are demersal and adhesive, burial from sediment deposition during dredging is a concern. Studies have concluded that sediment burial decreases hatching success and delays hatching with increasing burial depth (Berry et al. 2004, 2011). Burial in clean sediment as small as 0.65 mm, slightly less than one egg diameter, can affect hatching success (Berry et al. 2011). Two areas have been identified as spawning habitat for winter flounder in Boston Harbor: one is within the Inner Confluence of the Boston Harbor at the mouth of the

Chelsea River (northeast of the CAD cell), and the other is near Governors Island (east of the Reserved Channel). While the Governors Island spawning site is unlikely to be directly impacted by turbidity plumes from Reserved Channel dredging, adult and juvenile winter flounder are likely to use the Reserved Channel for foraging and resting. In addition, winter flounder larvae, which are more susceptible to impacts from suspended sediment (see be below) may also occur within the Reserved Channel after hatching.

The Main Ship Channel CAD cell is not only adjacent to an identified winter flounder spawning site, but is also located within a relatively narrow section of the Confluence Channel (approximately 600 feet wide within the 1,200-foot-wide channel). Therefore, in addition to potential turbidity impacts to the winter flounder spawning areas from disposal plume, the disposal could impact larval, juvenile, an adult life stages as they move to and from the spawning areas. Similar impacts to diadromous fish are likely during spawning migration into the Mystic and Chelsea Rivers from the CAD cell disposal activities.

High turbidity can disrupt respiration of fishes and other aquatic organisms, reduce filtering efficiencies and respiration of invertebrates, reduce of egg buoyancy, and decreased foraging efficiency of sight-feeders (Messieh et al. 1991; Wilber and Clarke 2001; USEPA 2005). Prolonged exposure to suspended sediments can cause gill irritation, increased mucus production, and decreased oxygen transfer in fish (Nightingale and Simenstad 2001; Wilber et al. 2005). Our primary concern with suspended sediment in this project is on larval stage fish. Wilber and Clarke (2001) reported increased mortality from suspended sediment in larval estuarine fish at less than 200 mg/L, and Sherk et al. (1975) found 50% mortality in juvenile Atlantic menhaden (*Brevoortia tyrannus*) exposed to suspended concentrations of 24.7 mg/L. Funderburk et al. (1991) reported mortality in larval American shad at suspended sediment levels around 100 mg/L. In another laboratory study, rainbow smelt (*Osmerus mordax)* showed signs of increased swimming activity at suspended sediment concentrations as low as 20 mg/L, suggesting fish responded to increased suspended sediment concentrations with an "alarm reaction" (Chiasson 1993). Breitburg (1988) reported the feeding rate of striped bass (*Morone saxatilis*) larvae in the laboratory decreased by 40% when exposed to suspended sediment concentrations of 200 mg/L.

Based upon the expected level of turbidity and the area of impact from turbidity plume generated from the dredging and disposal, we have determined that a TOY restriction to protect winter flounder and diadromous fish, from February 15 to June 30, is necessary to protect these species. The TOY restriction applies to disposal activities in the Main Ship Channel CAD cell and for dredging with the Reserved Channel, but not for dredging within Fisherman's Cove. For that area, supplemental information provided to us by the Army Corps of Engineers indicates that turbidity curtains will be used to contain suspended sediments.

Rock Removal

Section 5.6.1 (Berth 10 Non-explosive rock removal) discusses various non-explosive techniques that may be used in the proposed project, including hydraulic impact hammering, drilling, use of a large backhoe and a cutter-head dredge. Based upon modeling and monitoring data for other projects, the assessment concludes underwater noise above the 150 dB rms threshold for

behavioral impacts on fish may extend 300-800 feet from the source. Assuming the area of rock removal would extend approximately 160 feet into the center of the channel (as shown on Fig. 1, dated August 2017), we have determined the effective area of noise-related behavioral impacts to fish would encompass the entire width of the Reserved Channel.

Section 5.6.2 (Berth 10 –Blasting) describes the modeling approach used to anticipate the underwater sound levels in the Reserved Channel, based on data for blasting in New Bedford Harbor for the construction of the South Terminal. Regarding impacts to federally-managed species, the assessment concludes the impacts of injury or mortality may extend 187 to 291 feet from the blasting site. Furthermore, the assessment concludes this zone of impact from blasting would occur in approximately one-half of the Reserved Channel width. However, the assessment neglects to factor in the proposed area of rock removal (shown on Fig. 1), which would extend approximately 160 feet towards the center of the channel. Assuming a 291-foot zone of injury/mortality from the furthest extent of rock blasting, the actual zone of impact from blasting would extend more than 450 feet into the 600-foot-wide channel. In addition, behavioral impacts to fish would encompass the entire width of the Reserved Channel.

Based on the above, we believe a TOY restriction from February 15 to June 30 is necessary for non-explosive and explosive rock removal operations to protect winter flounder spawning, egg and larval development.

Pile Installation

Section 5.7 (Pile installation) of the EFH assessment describes the installation of 900 steel pipe piles at Berth 10, with the loss of soft-bottom habitat from the proposed 26- and 30-inch piles expected to be 3,768 sf. The assessment notes that 456 existing piles will be removed as part of the proposed project. Although we were unable to locate information depicting the location of the 456 existing piles, we assume that these piles are located within the area below the proposed wharf that are proposed to be filled with riprap. Therefore, the removal of the existing piles does not represent restoration of soft-bottom habitat and, as a result of the loss of 3,768 sf of soft-bottom habitat from the proposed pile installation, the impact should be offset through compensatory mitigation.

In addition, the assessment describes methods that could be used to install piles in areas of Berth 10 containing shallow rock, including a rock socket drill and pre-trenching to a depth of approximately 5 feet below the maximum dredge depth. For the pre-trenching method, the assessment states that methods similar to rock removal for dredging may be required. Because this may include blasting, we believe any pile installation that requires the use of explosives should employ the TOY restriction to protect sensitive life stages.

Section 5.7.1 (Potential impacts during pile driving) describes the methods for installation of 26- and 30-inch piles, and the predicted underwater noise impacts on fish. Using the GARFO Acoustic Tool developed by NMFS Protected Resources Division, MassPort estimates the maximum radius for behavioral and physiological impacts will be 321 and 30 feet, respectively. Fig. 1, dated August 2017, provided by MassPort depicts a 321-foot radius for behavioral impacts from the northernmost row of piles. This information suggests that only the southern

half of the Reserved Channel will be affected by underwater noise levels that could adversely affect fish during pile driving. However, as noted in Section 5.7.2 (Mitigation measures-pile installation) of the assessment, the effective width of the Reserved Channel available for fish passage will be reduced when cruise ships are berthed at the Black Falcon port facility. In the assessment, MassPort proposed to avoid pile driving operations on the northernmost piles during the times when cruise ships are berthed as a mitigation measure. Although we agree with this concept, the effect of avoiding pile driving on only the northernmost piles will be to increase the effective width of the channel for fish by about 18 feet, while the width of a cruise ship is well over 100 feet. Therefore, we believe all pile installation should be avoided between February 15-June 30 if cruise ships are expected to be berthed at the Black Falcon facility during this time to protect winter flounder spawning, larvae, and juvenile life stages.

Underwater sound monitoring should be conducted to verify the results of the underwater sound modeling for both underwater blasting and pile installation. This may be accomplished by sampling a representative number of 26- and 30-inch piles for both vibratory and impacts hammers, and during blasting operations. If monitoring results indicate higher sound levels and threshold distances than predicted in the modeling, a reevaluation of blasting and pile driving methods will be necessary (e.g., use of bubble curtains or pile pads, soft start). A monitoring program for underwater blasting and pile driving should be developed and provided for our review before permit issuance.

Essential Fish Habitat Conservation Recommendations

The Boston Harbor and Reserved Channel is designated as EFH under the MSA for a variety of federally-managed species including winter flounder. In addition, a number of species, including alewife, blueback herring, and rainbow smelt, that use the project area are considered prey for several other federally-managed species and are therefore a component of EFH. As described above, the proposed project would adversely affect EFH by placing fill and shading intertidal and subtidal habitats, increasing turbidity in the water column and sedimentation deposition on benthic habitats, elevate underwater noise level above the behavioral and physiological threshold levels. We recommend pursuant to Section 305(b)(4)(A) of the MSA that you adopt the following EFH conservation recommendations:

1. A construction schedule should be developed for our review that incorporates a TOY restriction from February 15 to June 30 to protect sensitive early life history stages for the following activities:
    a. Potential release of petroleum/oil into the water column during dredging and excavation associated with removal of contaminated soils associated with construction of Berth 10 wharf at the former Coastal Oil site. This applies only to contaminated areas being dredged that are too deep to use a silt curtain and an environmental bucket cannot be used.
    b. Dredging for areas of Berths 10 and 11 in the Reserved Channel and disposal in the Main Ship Channel CAD cell. This does not apply to dredging within Fisherman's Cove, as long as turbidity curtains are used to contain suspended sediments.

c. All non-explosive and explosive methods of rock removal within the Reserved Channel.
d. Pile installation using both vibratory and impact hammers within the Reserved Channel while cruise ships are berthed at the Black Falcon facility between February 15 and June 30.

2. Underwater sound monitoring should be conducted to verify the results of the underwater sound modeling for underwater blasting and pile driving. Monitoring for underwater blasting should be conducted during construction Phase II and VI. Monitoring for pile driving should be conducted by sampling a representative number of 26- and 30-inch piles using both vibratory and impact hammers. If monitoring results indicate higher sound levels and threshold distances than predicted in the modeling, a reevaluation of sound attenuation methods may be necessary (e.g., use of bubble curtains or pile pads, soft start, blast detonation procedures). An underwater sound monitoring plan should be developed for our review prior to permit issuance.

3. Compensatory mitigation for the net loss of soft-bottom habitat for the proposed project should be provided for the following activities:
   a. For the placement of 75,700 sf of riprap and backfill associated with construction of the proposed Berth 10 wharf.
   b. For 3,768 sf associated with the installation of piles for the proposed Berth 10 wharf.

   We recommend MassPort investigate the feasibility of implementing a compensatory mitigation project within Boston Harbor that offsets the loss of nearly 80,000 sf of fishery habitat. We are available to discuss and assist MassPort and the Corps of Engineers in identifying and developing a compensatory mitigation plan.

Please note that Section 305(b)(4)(B) of the MSA requires the USACE to provide us with a detailed written response to these EFH conservation recommendations, including a description of adopted measures 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 the action agency must explain its 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 effects pursuant to 50 CFR 600.920(k).

Please also note that a distinct and further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(1) if new information becomes available or the project is revised in such a manner that affects the basis for the above EFH conservation recommendations.

Endangered Species Act

The Protected Resources Division is currently coordinating with your staff regarding Section 7 consultation under the Endangered Species Act (ESA). Should you have any questions about the ESA consultation, please contact Zach Jylkka at 978-281-9467.

Conclusion

In summary, we recommend a TOY restriction from February 15 to June 30 for activities discussed above that adversely affect EFH and other NMFS-trust resources. In addition, a compensatory mitigation plan should be developed to offset the loss of nearly 80,000 sf of fishery habitat. We look forward to your response to our EFH conservation recommendations on this project. Should you have any questions about this matter, please contact Michael Johnson at (978) 281-9130.

Sincerely,

Louis A. Chiarella
Assistant Regional Administrator
for Habitat Conservation

cc: PRD, Zach Jylkka
USACE, Paul Sneeringer
US EPA, Phil Colarusso
MA DMF, Tay Evans
MA CZM, Robert Boeri
MA DEP, Ken Chin
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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
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SEP 18 2017

Peter R. Blum, Chief
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U.S. Army Corps of Engineers
Wanamaker Building
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Philadelphia, PA 19107-3390

RE: New Jersey Intracoastal Waterway, Cape May Canal

Dear Mr. Blum:

We have reviewed the information provided to us, including the essential fish habitat (EFH) assessment, for the proposed modifications to the New Jersey Intracoastal Waterway (NJICWW), Cape May Canal Federal Navigation Project in Cape May County, New Jersey. The US Army Corps of Engineers (USACE) currently maintains the NJICWW in the Cape May Canal to a depth of 12 feet below mean low water (mlw). Maintenance dredging is currently planned at the jetty entrance on the Delaware Bay side of the canal. In the past, the material dredged from the NJICWW was placed within the USACE's existing confined disposal facility (CDF) adjacent to the canal behind Higbee Beach.

This year, the government owned dredge Currituck has become available to undertake this project. This will allow the material to be used beneficially to improve the beaches of Cape May Point. Rather than place the material dredged from the canal in the CDF, the Currituck will be used to place approximately 5,000-10,000 cy of dredged material (> 90% sand) from the canal into the nearshore waters of Cape May Point within the footprint of the Lower Cape May Meadows-Cape May Point environmental restoration area. The Currituck is capable of placing the material in water depths of 8-12 feet mlw. The material will provide a supplemental sand source to the beachfill restoration project in this area as the material is distributed naturally within the littoral zone by longshore currents.

Magnuson Stevens Fishery Conservation and Management Act (MSA)

Delaware Bay and the Cape May Canal have been designated as EFH for a number of federally managed species including Atlantic butterfish (*Peprilus triacanthus*), Atlantic sea herring (*Clupea harengus*), bluefish (*Pomatomus saltatrix*), black sea bass (*Centropristis striata*), red hake (*Urophycis chuss*), scup (*Stenotomus chrysops*), summer flounder (*Paralichthys dentatus*), winter flounder (*Pseudopleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), cobia (*Rachycentron canadum*), clearnose skate (*Raja eglanteria*), little skate (*Leucoraja erinacea*), and winter skate (*Leucoraja ocellata*).

The lower Delaware Bay area is also EFH for several highly migratory species including dusky shark (*Carcharhinus obscurus*), sandbar shark (*Carcharhinus plumbeus*), and sand tiger shark (*Carcharias taurus*). Sand tiger and dusky shark have been listed as Species of Concern by NOAA. Species of Concern are those species about which we have concerns regarding 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 is to promote proactive conservation efforts for these species in order to preclude the need to list them in the future. The project area has also been designated as a Habitat Area of Particular Concern (HAPC) for sandbar shark. HAPCs are discrete subsets of EFH that provide important ecological functions and/or are especially vulnerable to degradation.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires federal agencies to consult with one another on projects such as this that may affect EFH. 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. Activities such as dredging (any method), barge overflow and the placement of dredged material in the aquatic environment including placement as beach nourishment may affect sandbar sharks and their EFH and HAPC adversely. As a result, we cannot agree with your conclusion that the proposed project will have no adverse effect on EFH or that the adverse effects are no more than minimal. .

The Delaware Bay is one of two principal nursery grounds for the sandbar shark on the U.S. East Coast (McCandless et al., 2007). Sandbar shark nursery areas are typically in shallow coastal waters from Cape Canaveral, Florida to Martha's Vineyard, Massachusetts. Studies indicate that juvenile sandbar sharks are generally found in water temperatures ranging from 15 to 30 °C, salinities at least from 15 to 35 ppt, and water depth ranging from 0.8 to 23 m in sand, mud, shell and rocky habitats from Massachusetts to North Carolina (Grubbs and Musick 2007, Grubbs et al. 2007; McCandless et al. 2002, 2007; Merson and Pratt 2007). These conditions exist at the project site, particularly in the later spring, summer and early fall.

Pregnant sandbar shark females occur in the area between late spring and early summer, give birth and depart shortly after while neonates (young-of-year) and juveniles (ages one and over) occupy the nursery grounds until migration to warmer waters in the fall (Rechisky and Wetherbee 2003 and Springer 1960). Neonates return to their natal grounds as juveniles and remain there for the summer.

A 2011 benchmark assessment (SEDAR 2011) of dusky, sandbar, and blacknose (*Carcharhinus acrontus*) sharks indicates that sandbar sharks continued to be overfished. The June 2009 Amendment 1 to the Consolidated Highly Migratory Species (HMS) Fisheries Management Plan (NOAA 2009) states that non–fishing activities such as mining for sand (e.g., for beach nourishment projects), gravel, and shell stock in estuarine and coastal waters have adverse impacts to sandbars shark EFH due to water column effects, such as changing circulation patterns, increasing turbidity, and decreasing oxygen concentrations. The 2009 amendment also include a number of EFH conservation recommendations for dredging and beach nourishment

projects proposed within EFH for highly migratory species. These general EFH conservation recommendations include:

- Sand mining and beach nourishment should not be allowed in HMS EFH during seasons when HMS are using the area, particularly during spawning and pupping seasons.

- Sand and gravel extraction operations should be managed to avoid or minimize impacts to the bathymetric structure in estuarine and nearshore areas.

- An integrated environmental assessment, management, and monitoring program should be a part of any gravel or sand extraction operation, and encouraged at Federal and state levels.

- Planning and design of mining activities should avoid significant resource areas important as HMS EFH.

- Given the increase in sea level rise and potentially growing need to re-nourish beaches, this activity needs to be closely monitored in areas that are adjacent to or located in HMS EFH.

For Delaware Bay, dredging should be avoided from May 1 to September 15 when sandbar sharks use the area as a pupping and nursery ground to minimize adverse effects to the sandbar shark HACP.

Final Amendment 10 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP) was recently released by our Highly Migratory Species Management Division. This amendment to the FMP contains several changes to the EFH designations for sharks and other highly migratory species. In particular, modifications to the sandbar shark HAPC are proposed, as well as a new HAPC designation for sand tiger sharks. More information can be found on the HMS Management Division's website at: http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am10/index.html. New maps will be available shortly and we will work with you to incorporate these changes in future consultations.

Mid-Atlantic Fisheries Management Council Policies

A number of the federally managed species for which EFH has been designated in the project area are managed by the Mid-Atlantic Fisheries Management Council (MAFMC). MAFMC has developed a policy statement on beach nourishment activities that may affect federally managed species under their purview including summer flounder, scup, black sea bass, 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 responses and relocation of vulnerable infrastructure given projections of sea level rise and extreme weather events.

The MAMFC's policies should be incorporated, as appropriate, into this project and any future sand placement within the Lower Cape May Meadows-Cape May Point environmental restoration area.

Essential Fish Habitat Conservation Recommendations
Pursuant to Section 305 (b) (4) (A) of the MSA, we recommend the following EFH conservation recommendations be incorporated into the project:

- To protect sandbar shark pupping and nursey habitat, dredging and dredged material placement should be avoided from May 1 to September 15 of any year.

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.

We look forward to continued coordination with your office on this project as it moves forward. If you have any questions or need additional information, please do not hesitate to contact Karen Greene at karen.greene@noaa.gov or (732) 872-3023.

Sincerely,

Louis A. Chiarella,
Assistant Regional Administrator
Habitat Conservation Division

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