



**US Army Corps
of Engineers®**
New York District

**Passaic River Tidal Protection Area, New Jersey
Coastal Storm Risk Management
Feasibility Study**

**Final Integrated Hurricane Sandy
General Reevaluation Report
& Environmental Assessment**

**Appendix C
Essential Fish Habitat Assessment**

March 2019

NOAA FISHERIES
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
Essential Fish Habitat (EFH) Consultation Guidance
EFH ASSESSMENT WORKSHEET

Introduction:

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) mandates that federal agencies conduct an essential fish habitat (EFH) consultation with NOAA Fisheries regarding any of their actions authorized, funded, or undertaken that may adversely affect EFH. An adverse effect means any impact that reduces the quality and/or quantity of EFH. Adverse effects 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 ecosystem components. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

This worksheet has been designed to assist in determining whether a consultation is necessary and in preparing EFH assessments. This worksheet should be used as your EFH assessment or as a guideline for the development of your EFH assessment. At a minimum, all the information required to complete this worksheet should be included in your EFH assessment. If the answers in the worksheet do not fully evaluate the adverse effects to EFH, we may request additional information in order to complete the consultation.

An expanded EFH assessment may be required for more complex projects in order to fully characterize the effects of the project and the avoidance and minimization of impacts to EFH. While the EFH worksheet may be used for larger projects, the format may not be sufficient to incorporate the extent of detail required, and a separate EFH assessment may be developed. However, regardless of format, the analysis outlined in this worksheet should be included for an expanded EFH assessment, along with additional information that may be necessary. This additional information includes:

- the results of on-site inspections to evaluate the habitat and site-specific effects
- the views of recognized experts on the habitat or the species that may be affected
- a review of pertinent literature and related information
- an analysis of alternatives to the action that could avoid or minimize the adverse effects on EFH.

Your analysis of adverse effects to EFH under the MSA should focus on impacts to the habitat for all life stages of species with designated EFH, rather than individual responses of fish species. Fish habitat includes the substrate and benthic resources (e.g., submerged aquatic vegetation, shellfish beds, salt marsh wetlands), as well as the water column and prey species.

Consultation with us may also be necessary if a proposed action results in adverse impacts to other NOAA-trust resources. Part 6 of the worksheet is designed to help assess the effects of the action on other NOAA-trust resources. This helps maintain efficiency in our interagency coordination process. In addition, further consultation may be required if a proposed action impacts marine mammals or threatened and endangered species for which we are responsible. Staff from our Greater Atlantic Regional Fisheries Office, Protected Resources Division should be contacted regarding potential impacts to marine mammals or threatened and endangered species.

Instructions for Use:

Federal agencies must submit an EFH assessment to NOAA Fisheries as part of the EFH consultation. Your EFH assessment must include:

- 1) A description of the proposed action.
- 2) An analysis of the potential adverse effects of the action on EFH, and the managed species.
- 3) The federal agency's conclusions regarding the effects of the action on EFH.
- 4) Proposed mitigation if applicable.

In order for this worksheet to be considered as your EFH assessment, you must answer the questions in this worksheet fully and with as much detail as available. Give brief explanations for each answer.

Federal action agencies or the non-federal designated lead agency should submit the completed worksheet to NOAA Fisheries Greater Atlantic Regional Fisheries Office, Habitat Conservation Division (HCD) with the public notice or project application. Include project plans showing existing and proposed conditions, all waters of the U.S. on the project site, with mean low water (MLW), mean high water (MHW), high tide line (HTL), and water depths clearly marked and sensitive habitats mapped, including special aquatic sites (submerged aquatic vegetation, saltmarsh, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges), hard bottom habitat areas and shellfish beds, as well as any available site photographs.

For most consultations, NOAA Fisheries has 30 days to provide EFH conservation recommendations once we receive a complete EFH assessment. Submitting all necessary information at once minimizes delays in review and keeps review timelines consistent. Delays in providing a complete EFH assessment can result in our consultation review period extending beyond the public comment period for a particular project.

The information contained on the [HCD website](#) will assist you in completing this worksheet. The HCD website contains information regarding: the EFH consultation process; Guide to EFH Designations which provides a geographic species list; Guide to EFH Species Descriptions which provides the legal description of EFH as well as important ecological information for each species and life stage; and other EFH reference documents including examples of EFH assessments and EFH consultations.

Our website also includes a link to the [NOAA EFH Mapper](#) .

We would note that the EFH Mapper is currently being updated and revised. Should you use the EFH Mapper to identify federally managed species with designated EFH in your project area, we recommend checking this list against the [Guide to Essential Fish Habitat Designations in the Northeast](#) to ensure a complete and accurate list is provided.

EFH ASSESSMENT WORKSHEET FOR FEDERAL AGENCIES (modified 3/2016)

PROJECT NAME:

DATE:

PROJECT NO.:

LOCATION (Water body, county, physical address):

PREPARER:

Step 1: Use the Habitat Conservation Division EFH webpage's [Guide to Essential Fish Habitat Designations](#) in the Northeastern United States to generate the list of designated EFH for federally-managed species for the geographic area of interest. Use the species list as part of the initial screening process to determine if EFH for those species occurs in the vicinity of the proposed action. The list can be included as an attachment to the worksheet. Make a preliminary determination on the need to conduct an EFH consultation.

1. INITIAL CONSIDERATIONS		
EFH Designations	Yes	No
Is the action located in or adjacent to EFH designated for eggs? List the species:		
Is the action located in or adjacent to EFH designated for larvae? List the species:		
Is the action located in or adjacent to EFH designated for juveniles? List the species:		

<p>Is the action located in or adjacent to EFH designated for adults or spawning adults? List the species:</p>		
<p>If you answered 'no' to all questions above, then an EFH consultation is not required - go to Section 5. If you answered 'yes' to any of the above questions, proceed to Section 2 and complete the remainder of the worksheet.</p>		

Step 2: In order to assess impacts, it is critical to know the habitat characteristics of the site before the activity is undertaken. Use existing information, to the extent possible, in answering these questions. Identify the sources of the information provided and provide as much description as available. These should not be yes or no answers. Please note that there may be circumstances in which new information must be collected to appropriately characterize the site and assess impacts. Project plans that show the location and extent of sensitive habitats, as well as water depths, the HTL, MHW and MLW should be provided.

2. SITE CHARACTERISTICS	
Site Characteristics	Description
Is the site intertidal, sub-tidal, or water column?	
What are the sediment characteristics?	
Is there submerged aquatic vegetation (SAV) at or adjacent to project site? If so describe the SAV species and spatial extent.	
Are there wetlands present on or adjacent to the site? If so, describe the spatial extent and vegetation types.	

<p>Is there shellfish present at or adjacent to the project site? If so, please describe the spatial extent and species present.</p>	
<p>Are there mudflats present at or adjacent to the project site? If so please describe the spatial extent.</p>	
<p>Is there rocky or cobble bottom habitat present at or adjacent to the project site? If so, please describe the spatial extent.</p>	
<p>Is Habitat Area of Particular Concern (HAPC) designated at or near the site? If so for which species, what type habitat type, size, characteristics?</p>	
<p>What is the typical salinity, depth and water temperature regime/range?</p>	
<p>What is the normal frequency of site disturbance, both natural and man-made?</p>	
<p>What is the area of proposed impact (work footprint & far afield)?</p>	

References:

IT Corporation. 1986. Passaic River Sediment Study. Prepared For: Diamond Shamrock Corporation.

Murphy III, W. Ward, et al. 2011. "Sediment, sedimentation, and environments of the LHR and Newark Bay estuary complex," Proceedings of the Western Dredging Association (WEDA XXXI) Technical Conference and Texas A&M University (TAMU 42) Dredging Seminar, Nashville, Tennessee, June 5-8, 2011.

USACE. 2010. Lower Passaic River Commercial Navigation Analysis. U.S. Army Corps of Engineers. New York District. New York, NY.

Step 3: This section is used to describe the anticipated impacts from the proposed action on the physical/chemical/biological environment at the project site and areas adjacent to the site that may be affected.

3. DESCRIPTION OF IMPACTS			
Impacts	Y	N	Description
Nature and duration of activity(s). Clearly describe the activities proposed and the duration of any disturbances.			
Will the benthic community be disturbed? If no, why not? If yes, describe in detail how the benthos will be impacted.			
Will SAV be impacted? If no, why not? If yes, describe in detail how the SAV will be impacted. Consider both direct and indirect impacts. Provide details of any SAV survey conducted at the site.			
Will salt marsh habitat be impacted? If no, why not? If yes, describe in detail how wetlands will be impacted. What is the aerial extent of the impacts? Are the effects temporary or permanent?			

<p>Will mudflat habitat be impacted? If no, why not? If yes, describe in detail how mudflats will be impacted. What is the aerial extent of the impacts? Are the effects temporary or permanent?</p>			
<p>Will shellfish habitat be impacted? If so, provide in detail how the shellfish habitat will be impacted. What is the aerial extent of the impact? Provide details of any shellfish survey conducted at the site.</p>			
<p>Will hard bottom (rocky, cobble, gravel) habitat be impacted at the site? If so, provide in detail how the hard bottom will be impacted. What is the aerial extent of the impact?</p>			
<p>Will sediments be altered and/or sedimentation rates change? If no, why not? If yes, describe how.</p>			
<p>Will turbidity increase? If no, why not? If yes, describe the causes, the extent of the effects, and the duration.</p>			

Will water depth change? What are the current and proposed depths?			
Will contaminants be released into sediments or water column? If yes, describe the nature of the contaminants and the extent of the effects.			
Will tidal flow, currents, or wave patterns be altered? If no, why not? If yes, describe in detail how.			
Will water quality be altered? If no, why not? If yes, describe in detail how. If the effects are temporary, describe the duration of the impact.			
Will ambient noise levels change? If no, why not? If yes, describe in detail how. If the effects are temporary, describe the duration and degree of impact.			
Does the action have the potential to impact prey species of federally managed fish with EFH designations?			

Step 4: This section is used to evaluate the consequences of the proposed action on the functions and values of EFH as well as the vulnerability of the EFH species and their life stages. Identify which species (from the list generated in Step 1) will be adversely impacted from the action. Assessment of EFH impacts should be based upon the site characteristics identified in Step 2 and the nature of the impacts described within Step 3. The [Guide to EFH Descriptions webpage](#) should be used during this assessment to determine the ecological parameters/preferences associated with each species listed and the potential impact to those parameters.

4. EFH ASSESSMENT			
Functions and Values	Y	N	Describe habitat type, species and life stages to be adversely impacted
Will functions and values of EFH be impacted for:			
Spawning If yes, describe in detail how, and for which species. Describe how adverse effects will be avoided and minimized.			
Nursery If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.			
Forage If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.			
Shelter If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.			

<p>Will impacts be temporary or permanent? Please indicate in description box and describe the duration of the impacts.</p>			
<p>Will compensatory mitigation be used? If no, why not? Describe plans for mitigation and how this will offset impacts to EFH. Include a conceptual compensatory mitigation plan, if applicable.</p>			

Step 5: This section provides the federal agency's determination on the degree of impact to EFH from the proposed action. The EFH determination also dictates the type of EFH consultation that will be required with NOAA Fisheries.

Please note: if information provided in the worksheet is insufficient to allow NOAA Fisheries to complete the EFH consultation additional information will be requested.

5. DETERMINATION OF IMPACT		
Federal Agency's EFH Determination		
<p>Overall degree of adverse effects on EFH (not including compensatory mitigation) will be:</p> <p>(check the appropriate statement)</p>		<p>There is no adverse effect on EFH or no EFH is designated at the project site.</p> <p>EFH Consultation is not required.</p>
		<p>The adverse effect on EFH is not substantial. This means that the adverse effects are either no more than minimal, temporary, or that they can be alleviated with minor project modifications or conservation recommendations.</p> <p>This is a request for an abbreviated EFH consultation.</p>
		<p>The adverse effect on EFH is substantial.</p> <p>This is a request for an expanded EFH consultation.</p>

Step 6: Consultation with NOAA Fisheries may also be required if the proposed action results in adverse impacts to other NOAA-trust resources, such as anadromous fish, shellfish, crustaceans, or their habitats as part of the Fish and Wildlife Coordination Act. Some examples of other NOAA-trust resources are listed below. Inquiries regarding potential impacts to marine mammals or threatened/endangered species should be directed to NOAA Fisheries' Protected Resources Division.

6. OTHER NOAA-TRUST RESOURCES IMPACT ASSESSMENT	
Species known to occur at site (list others that may apply)	Describe habitat impact type (i.e., physical, chemical, or biological disruption of spawning and/or egg development habitat, juvenile nursery and/or adult feeding or migration habitat). Please note, impacts to federally listed species of fish, sea turtles, and marine mammals must be coordinated with the GARFO Protected Resources Division.
alewife	
American eel	
American shad	
Atlantic menhaden	
blue crab	
blue mussel	
blueback herring	

Eastern oyster	
horseshoe crab	
quahog	
soft-shell clams	
striped bass	
other species:	

Designated EFH by species and life stage Newark Bay				
Species	Eggs	Larvae	Juveniles	Adults
Atlantic butterfish (<i>Peprilus triacanthus</i>)		X	X	X
Atlantic mackerel (<i>Scomber scombrus</i>)			X	X
Atlantic sea herring (<i>Clupea harengus</i>)		X	X	X
black sea bass (<i>Centropristis striata</i>)	n/a		X	X
bluefish (<i>Pomatomus saltatrix</i>)			X	X
cobia (<i>Rachycentron canadum</i>)	X	X	X	X
king mackerel (<i>Scomberomorus cavalla</i>)	X	X	X	X
red hake (<i>Urophycis chuss</i>)		X	X	X
sand tiger shark (<i>Carcharias taurus</i>)		X		
sandbar shark (<i>Carcharhinus plumbeus</i>)		X		X
scup (<i>Stenotomus chrysops</i>)	X	X	X	
Spanish mackerel (<i>Scomberomorus maculatus</i>)	X	X	X	X
summer flounder (<i>Paralichthys dentatus</i>)		X	X	X
windowpane flounder (<i>Scophthalmus aquosus</i>)	X	X	X	X
winter flounder (<i>Pseudopleuronectes americanus</i>)	X	X	X	X



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

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

FEB 28 2019

RE: Revised Draft Integrated Hurricane Sandy General Reevaluation Report and Environmental Assessment and Essential Fish Habitat Assessment, Passaic River Tidal Protection Area, New Jersey, Coastal Storm Risk Management General Reevaluation Study

Dear Mr. Weppler:

We have reviewed the January 2019 Revised Draft Environmental Assessment (DEA) and the August 2017 Essential Fish Habitat (EFH) Assessment for the construction of the Passaic River Tidal Protection Area (Passaic Tidal) project located in the City of Newark, Essex County and Townships of Kearny and Harrison, Hudson County, NJ. We provided a comment letter on a previous version of the DEA on November 21, 2017. The Passaic Tidal project area is a component of the Passaic River Main Stem Flood Risk Management Project, authorized in 1990. The DEA addresses updated plan formulation and environmental impacts to determine if the Passaic Tidal project remains viable. Approximately 0.38 acres of wetlands and open water will be permanently impacted by the project. Compensatory mitigation will be used to offset adverse impacts to wetlands and waterways.

The project area includes tidally-influenced and surge-prone areas in the lower Passaic and Hackensack Rivers and Newark Bay. The recommended plan (RP) includes seven separate floodwall segments (3,935 lf total length), road and railroad closure structures, a tide gate and an interior drainage system. All structures except the tide gate are in upland locations. The proposed location for the tide gate is an unnamed tributary of Jasper Creek, a tributary of Newark Bay. An existing tide gate is located downstream of the unnamed tributary at the mouth of Jasper Creek, which prevents tidal influence upstream of the existing gate.

The RP will result in impacts to wetlands from the construction of Section 3 of the floodwall system, including 0.03 acre of temporary and 0.07 acre of permanent impacts to tidal wetlands, 0.05 acre of temporary and 0.11 acre of permanent impacts to connected freshwater wetlands, and 0.2 acre of permanent impacts to tidal open water habitat. Additional, as yet undetermined, impacts to wetlands and open water habitat may result from the construction of pump stations and other interior drainage features.

Following construction, temporarily disturbed wetland areas will be revegetated with native species. Permanent impacts to wetlands and open water habitat will be mitigated through



implementation of a compensatory wetland mitigation plan consistent with state and federal regulations and in cooperation with the appropriate agencies.

Magnuson Stevens Fishery Conservation and Management Act (MSA)

As discussed in our previous letter, the estuarine portions of the project area have been designated as EFH for a number of federally managed species including Atlantic butterfish (*Peprilus triacanthus*), Atlantic herring (*Clupea harengus*), bluefish (*Pomatomus saltatrix*), black sea bass (*Centropristis striata*), red hake (*Urophycis chuss*), summer flounder (*Paralichthys dentatus*), windowpane flounder (*Scophthalmus aquosus*), winter flounder (*Pseudopleuronectes americanus*) and other species. Adverse effects to EFH 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. Adverse effects may result from actions occurring within designated EFH or outside areas designated as EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

In our previous comment letter, we indicated that the EFH assessment for this project adequately evaluated the impacts of the project on EFH associated with the flood protection improvements on the unnamed tributary of Jasper Creek in Section 3 of the project area. We agreed that the impacts to EFH for the project are not substantial and asked for clarification of habitat type in the unnamed tributary. That information was provided in the revised DEA. However, some additional impacts to wetlands and waterways that may result from the construction of pump stations and interior drainage features cannot be provided until project plans progress further. As the project moves forward, these impacts should be evaluated, included in the final EA, and incorporated into the compensatory mitigation plan as necessary.

Impacts to Aquatic Resources

Anadromous Fishes

Anadromous species such as alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), and striped bass (*Morone saxatilis*) may use Newark Bay and the Passaic River as migratory pathways and as nursery and forage habitat. Anadromous fishes such as these spend most of their adult life at sea, but return to freshwater areas to spawn in the spring. Increases in turbidity due to the resuspension of sediments into the water column during construction can degrade water quality, lower dissolved oxygen levels, and potentially release chemical contaminants bound to the fine-grained estuarine/marine sediments. Suspended sediment can also mask pheromones used by migratory fishes to reach their spawning grounds and impede their migration and can smother immobile benthic organisms and demersal newly-settle juvenile fish (Auld and Schubel 1978; Breitburg 1988; Newcombe and MacDonald 1991; Burton 1993; Nelson and Wheeler 1997).

Buckel and Conover (1997) in Fahay et al. (1999) report that diet items of juvenile bluefish include *Alosa* species such as alewife and blueback herring. Juvenile *Alosa* species have also been identified as prey species for summer flounder and windowpane 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, summer flounder and windowpane flounder by reducing the availability of prey items.

Mitigation

The RP will result in the permanent loss of 0.38 of tidal wetlands, tidal-connected freshwater wetlands, and open water habitat, with additional impacts to these habitats possible but not yet determined. A mitigation plan is proposed to be developed in accordance with the federal final mitigation rules published in the Federal Register on April 10, 2008 (33 CFR Chapter 2 Part 332.4 (b)); that mitigation plan should be provided to us for review. The plan should explain how the proposed compensatory mitigation will offset the impacts to estuarine wetlands and EFH. It should also include performance measures, success criteria, and a long-term monitoring and maintenance plan.

Essential Fish Habitat Conservation Recommendations

Pursuant to Section 305 (b) (4) (A) of the MSA, our EFH conservation recommendations are as follows to minimize adverse effects to EFH for bluefish, summer flounder, windowpane flounder, and other federally managed species:

1. No in-water work from 3/1 to 6/30 of each year to minimize impacts to migrating anadromous species including alewife and blueback herring, prey species for a number of federally managed species. This restriction does not apply to work conducted behind the existing one-way tide gate.
2. The compensatory mitigation plan should be provided to us for review. The plan should include performance measures, success criteria, and a long-term monitoring and maintenance plan. The site protection mechanism and long-term land steward should also be identified.
3. All areas of temporary impacts to wetlands should be restored and monitored to ensure restoration success. A restoration and monitoring plan should be provided to us for review.
4. Any newly-installed tide gate should be self-regulating. Self-regulating tide gates allow tidal flow and fish passage but can be set to close at a specified water level. An operations and maintenance plan should be developed for any tide gate installed that specifies the entity responsible for the operation and maintenance of the gate.
5. Best management practices should be used during construction to minimize the release of sediments into the waterway.

Please note that Section 305(b)(4)(B) of the MSA requires you to provide us with a detailed written response to the EFH conservation recommendations, including a description of measures you have adopted to avoid, minimize or mitigate the impact of the project on EFH. In the case of a response that is inconsistent with these conservation 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 effects pursuant to 50 CFR 600.920(k).

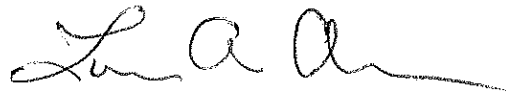
Please also note that a distinct and further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(1) if new information becomes available or the project is revised in such a manner that affects the basis for the above EFH conservation recommendations.

Endangered Species Act

Our Protected Resources Division has already provided comments on this project. Further questions should be directed to Edith Carson-Supino at (978) 282-8490 or edith.carson-supino@noaa.gov.

We look forward to our 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 Ursula Howson of our Highlands, NJ field office at ursula.howson@noaa.gov or (732) 872-3116.

Sincerely,

A handwritten signature in cursive script, appearing to read "Louis A. Chiarella".

Louis A. Chiarella,
Assistant Regional Administrator
for Habitat Conservation

cc: NYD ACOE – M. Voisine
PRD – D. Marrone, E. Carson-Supino

Literature Cited

Auld, A.H., and J.R. Schubel. 1978. Effects of suspended sediments on fish eggs and larvae: a laboratory assessment. *Estuar. Coast. Mar. Sci.* 6: 153-164.

Breitburg, D.L. 1988. Effects of turbidity on prey consumption by striped bass larvae. *Trans. Amer. Fish. Soc.* 117: 72-77.

Buckel, J.A. and D.O. Conover. 1997. Movements, feeding periods, and daily ration of piscivorous young-of-the-year bluefish, *Pomatomus saltatrix*, in the Hudson River estuary. *Fish. Bull. (U.S.)* 95(4):665-679.

Burton, W.H. 1993. Effects of bucket dredging on water quality in the Delaware River and the potential for effects on fisheries resources. Prepared for: Delaware Basin Fish and Wildlife Management Cooperative, by Versar Inc., Columbia MD.

Fahay, M.P., P.L. Berrien, D.L. Johnson and W.W. Morse. 1999. Essential Fish Habitat Source Document: Bluefish *Pomatomus saltatrix* life history and habitat characteristics. U.S. Dep. Commer., NOAA Technical Memorandum NMFS-NE-144.

Nelson, D.A., and J.L. Wheeler. 1997. The influence of dredging-induced turbidity and associated contaminants upon hatching success and larval survival of winter flounder, *Pleuronectes americanus*, a laboratory study. Final report, Grant CWF #321-R, to Connecticut Department Environmental Protection, by National Marine Fisheries Service, Milford CT.

Newcombe, C.P., and D.D. MacDonald. 1991. Effects of suspended sediments on aquatic ecosystems. *N. Amer. J. Fish. Manag.* 11: 72-82.

Steimle, F.W., R.A. Pikanowski, D.G. McMillan, C.A. Zetlin, S.J. Wilk. 2000. Demersal fish and American lobster diets in the Lower Hudson-Raritan Estuary. NOAA Technical Memorandum NMFS-NE-161. Woods Hole, MA. 106 p.



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

April 3, 2019

Mr. Louis A. Chiarella
Assistant Regional Administrator
for Habitat Conservation
55 Republic Drive
Gloucester, MA 01930-2276

Dear Mr. Chiarella:

Thank you for your review and providing comments on the Revised Draft Integrated Hurricane Sandy General Reevaluation Report and Environmental Assessment (HSGRR/EA) for the Passaic Tidal Protection Area Coastal Storm Risk Management Study. The U.S. Army Corps of Engineers, New York District (District) response to your comments are provided below.

Magnuson Stevens Fishery Conservation and Management Act

With regards to more information on pump stations and interior drainage – the Revised Draft details the interior drainage features of the recommended plan. Pump stations were determined to not be necessary. The interior drainage features include tie-ins to existing stormwater lines, a gate, three 36” culverts in the Segment 3 levee, and three 36” culverts under a roadway. These features are detailed in Appendix F - Hydrology and Hydraulics.

Mitigation

The mitigation plan identified at feasibility-level within the HSGRR/EA determined that purchasing credits at a mitigation bank was the most efficient plan. During the design phase, a detailed mitigation plan will be developed. The District will include the Greater Atlantic Regional Fisheries Office (GARFO) in the review of the plan.

Essential Fish Habitat Conservation Recommendations

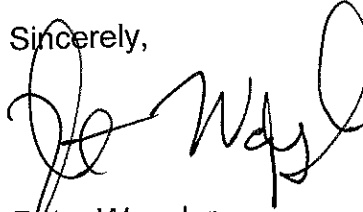
The District agrees with the five recommendations listed below and will utilize them during the construction of the project.

1. The District will not conduct in-water work from March 1 – June 30 forward of the existing one-way tide gate.
2. When developed, the mitigation plan will be provided to GARFO for your review.
3. All temporary impacts to wetlands will be restored and included in the in the monitoring plan.
4. The installed culvert in Segment 3 will be one-way flow. This waterway is not tidally influenced, does not convey water back and forth, and ends a few hundred feet after the existing culverts.
5. The District will use Best Management Practices such as New Jersey Standards for Soil Erosion and Sediment Control (N.J.S.A. 4:24-39 et seq.), the Stormwater

Management Rules (N.J.A.C. 7:8), use of silt fencing, storm drain protection, and stabilized construction entrances, and proper fuel storage.

The New York District appreciates your time and effort in reviewing the HSGRR/EA. Should you require any additional information, please contact Project Biologist, Mr. Matthew Voisine of my staff at (917) 790-8718.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Wepler". The signature is fluid and cursive, with a large initial "P" and "W".

Peter Wepler
Chief, Environmental Analysis Branch

cc:
Karen Green
Ursula Howson