Appendix C

Essential Fish Habitat Assessment

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: Passaic River Tidal General Reevaluation Study

DATE: 08/23/2017

PROJECT NO.:

LOCATION (Water body, county, physical address):

Lower Passaic River, Lower Hackensack River, Newark Bay, and an unnamed tributary to Jasper Creek which drains into Newark Bay.

PREPARER: Margaret Wellins, HDR Engineering, Inc.

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:** Cobia, king mackerel, scup, Spanish mackerel, windowpane flounder, winter flounder	✔	
Is the action located in or adjacent to EFH designated for larvae? **List the species:** Atlantic butterfish, Atlantic sea herring, cobia, king mackerel, red hake, sand tiger shark, sandbar shark, scup, Spanish mackerel, summer flounder, windowpane flounder, winter flounder.	✔	
Is the action located in or adjacent to EFH designated for juveniles? **List the species:** Atlantic butterfish, Atlantic mackerel, Atlantic sea herring, black sea bass, bluefish, cobia, king mackerel, red hake, scup, Spanish mackerel, summer flounder, windowpane flounder, winter flounder	✔	

Is the action located in or adjacent to EFH designated for adults or spawning adults? List the species: Atlantic butterfish, Atlantic mackerel, Atlantic sea herring, black sea bass, bluefish, cobia, king mackerel, red hake, sandbar shark, Spanish mackerel, summer flounder, windowpane flounder, winter flounder	✔	

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.

<u>Step 2</u>: 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?	The project involves construction of a series of floodwall segments, most of which will be constructed in upland areas (Figure 1). Segment 3 is the only one that involves in-water work as a floodwall and tide gate across an unnamed tributary to Jasper Creek which drains into Newark Bay. This tributary is a drainage ditch conveying surface water to Newark Bay and contains water column within the project area. Intertidal and subtidal features are unlikely due to the presence of a tide gate at the mouth of Jasper Creek.
What are the sediment characteristics?	Sediment characteristics in the Passaic River include silty fine sediment that has a high concentration of contaminants such as PCB's, dioxins, lead, and mercury as characterized by the Passaic River Sediment Study (IT Corporation 1986). There is no work proposed in or adjacent to the Passaic River, Hackensack River, or Newark Bay. In-water work is proposed at Segment 3 within an unnamed tributary to Jasper Creek where the sediment characteristics are unknown. National Wetland Inventory maps indicate that the the tributary has an unconsolidated bottom.
Is there submerged aquatic vegetation (SAV) at or adjacent to project site? If so describe the SAV species and spatial extent.	No. Maintained navigation channels, commercial and industrial docks preclude the establishment of SAV in tidal waters in the area. Additionally, poor water quality cannot support SAV in this area.
Are there wetlands present on or adjacent to the site? If so, describe the spatial extent and vegetation types.	Yes, Phragmites dominated wetlands are present adjacent to the ditch where a floodwall and tide gate are proposed. NJDEP mapped wetlands adjacent to the ditch in the project area are limited to areas along the shoreline of the ditch and do not extend much further.

Is there shellfish present at or adjacent to the project site? If so, please describe the spatial extent and species present.	NJDEP does not designate shellfish habitat in the Passaic River, Hackensack River, Newark Bay or its unnamed tributary, but previous studies have yielded some blue mussels, soft-shell clams, and blue crabs in nearby Newark Bay near the mouth of the Passaic River. Shellfish are unlikely to be present for the following reasons: 1) the presence of multiple culverts between Segment 3 and Newark Bay which limit shellfish movement; 2) presence of a tide gate at the mouth of Jasper Creek at Newark Bay; 3) an overall lack of shellfish found in Newark Bay; and 4) the distance of Segment 3 to the Bay, which is approximately 1.4 miles.
Are there mudflats present at or adjacent to the project site? If so please describe the spatial extent.	Mudflats may be present within the larger Study Area, but are not present within the footprint of the floodwall segments or the Project Area.
Is there rocky or cobble bottom habitat present at or adjacent to the project site? If so, please describe the spatial extent.	No, bottom habitat is fine substrate such as silt as characterized by the Passaic River Sediment Study (IT Corporation 1986). The Lower Hackensack River and Upper Newark Bay also have a silty characteristics (Murphy et al. 2011) and NWI maps indicate the ditch has an unconsolidated bottom.
Is Habitat Area of Particular Concern (HAPC) designated at or near the site? If so for which species, what type habitat type, size, characteristics?	Based on the review of NOAA's designated HAPC areas, there is no HAPC on or near the Project Area.
What is the typical salinity, depth and water temperature regime/range?	Depending on season and climate, salinity can range from 0 - 21 ppt according to Passaic River Sediment Study (IT Corporation 1986). The river in this reach is all channelized and maintained at depths of 20 feet (USACE 2010). Water temperatures range from 0-24°C. Because of their close proximity to the Lower Passaic River, it can be assumed that the Hackensack River and Newark Bay have similar salinity and temperature regimes. Based on the distance from Newark Bay and smaller size of the drainage ditch it is assumed that temperatures would be higher during the summer season and lower during the winter. Salinity is anticipated to be lower than in Newark Bay due to surface water inputs and the tide gate present at the mouth of Jasper Creek where it flows into Newark Bay.
What is the normal frequency of site disturbance, both natural and man-made?	The Passaic River, Hackensack River, and Newark Bay shorelines are very urbanized environments with frequent disturbance. It is largely bulk-headed with roads and rail bridges running along and traversing the river. The river also experiences frequent vessel traffic. The waterfront is mostly developed for industrial uses including manufacturing, shipping and wastewater treatment. There are public parks along the waterfront as well. The drainage ditch is located in a vacant area and subject to minimal regular disturbance. The ditch may be occasionally dredged.
What is the area of proposed impact (work footprint & far afield)?	All floodwall segments are proposed in uplands not adjacent to waterways with the exception of Segment 3, which is located in a drainage ditch that is an unnamed tributary to Newark Bay. The area of impact within the ditch is approximately 0.02 acres of permanent impacts and 0.02 acres of temporary impacts. Impacts to the wetlands adjacent to the ditch are approximately 0.06 acres of permanent impact and 0.04 acres of temporary impacts.

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.			The project involves the construction of series of floodwall segments in low lying areas of Newark and interior drainage features. In-water work within the drainage ditch and impacts to any aquatic resources will be primarily limited to the duration of construction (up to one year). During operation the tide gate will remain open allowing for species passage. Temporary passage restriction will occur during high tides the bypass the tide gate at the mouth of Jasper Creek and storms resulting in minor temporary impacts.
Will the benthic community be disturbed? If no, why not? If yes, describe in detail how the benthos will be impacted.	✔		Benthos in the drainage ditch at Segment 3 will be permanently impacted as a result of placement of the floodwall within the ditch. Temporary minor impacts such as increased turbidity and sedimentation will also result from construction activities. These impacts will be minimized to the furthest extent possible through the use of soil erosion and sediment control BMPs during construction.
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.		✔	No SAV is known to exist in the area; therefore no impacts are anticipated.
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?	✔		Permanent impacts to Phragmites dominated wetlands are anticipate from placement of the floodwall at Segment 3. A total of approximately 0.06 acres of permanent impact and 0.04 acres of temporary impacts are anticipated.

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?	☐	☑	No mudflats are present within the area of impact.
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.	☑	☐	Shellfish habitat potentially present within the drainage ditch will be impacted by the floodwall and tidegate that will be installed at Segment 3. No shellfish surveys have been conducted; however, based on the following, shellfish are unlikely to be present within the drainage ditch: 1) the presence of multiple culverts between Segment 3 and Newark Bay which limit shellfish movement; 2) presence of a tide gate at the mouth of Jasper Creek at Newark Bay; 3) an overall lack of shellfish found in Newark Bay; and 4) the distance of Segment 3 to the Bay, which is approximately 1.4 miles.
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?	☐	☑	No hard bottom habitats will be impacted.
Will sediments be altered and/or sedimentation rates change? If no, why not? If yes, describe how.	☑	☐	Sedimentation may increase temporarily during construction at Segment 3. Soil erosion and sediment control BMPs will be utilized to the furthest extent possible during construction to minimize these impacts.
Will turbidity increase? If no, why not? If yes, describe the causes, the extent of the effects, and the duration.	☑	☐	Turbidity may increase temporarily during construction of Segment 3. Soil erosion and sediment control BMPs will be utilized to the furthest extent possible during construction to minimize these impacts.

Will water depth change? What are the current and proposed depths?	☐	☑	Water depths upstream and downstream of the proposed floodwall at Segment 3 are anticipated to remain as they are currently.
Will contaminants be released into sediments or water column? If yes, describe the nature of the contaminants and the extent of the effects.	☐	☑	No release of contaminants into the sediments or the water column is anticipated. All applicable BMPs such as proper fuel storage and silt fencing will be utilized to prevent any contaminant leaks from construction equipment and keep sediments localized.
Will tidal flow, currents, or wave patterns be altered? If no, why not? If yes, describe in detail how.	☑	☐	The tide gate proposed at Segment 3 would close during high tide events and remain open at low tide allowing for continued downstream flow.
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.	☑	☐	Turbidity may increase temporarily during construction of Segment 3 for a short duration. Soil erosion and sediment control BMPs will be utilized to the furthest extent possible during construction to minimize these impacts.
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.	☑	☐	Noise levels will increase during construction from the use of heavy construction equipment. Noise levels will return to their original condition following construction.
Does the action have the potential to impact prey species of federally managed fish with EFH designations?	☐	☑	Small prey species may be present within the ditch at Segment 3. These species would be able to avoid the project area during construction and therefore, no impacts to prey species is anticipated.

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.		✔	

Will impacts be temporary or permanent? Please indicate in description box and describe the duration of the impacts.			
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.	☐	✔	No impacts to EFH or managed species are anticipated.

<u>Step 5</u>: 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		
Overall degree of adverse effects on EFH (not including compensatory mitigation) will be: **(check the appropriate statement)**	✔	**There is no adverse effect on EFH or no EFH is designated at the project site.** **EFH Consultation is not required.**
	☐	**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.** **This is a request for an abbreviated EFH consultation.**
	☐	**The adverse effect on EFH is substantial.** **This is a request for an expanded EFH consultation.**

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	There will be no impact to any species habitat listed below.
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 *(Peprilus triacanthus)*		X	X	X
Atlantic mackerel *(Scomber scombrus)*			X	X
Atlantic sea herring *(Clupea harengus)*		X	X	X
black sea bass *(Centropristis striata)*	n/a		X	X
bluefish *(Pomatomus saltatrix)*			X	X
cobia *(Rachycentron canadum)*	X	X	X	X
king mackerel *(Scomberomorus cavalla)*	X	X	X	X
red hake *(Urophycis chuss)*		X	X	X
sand tiger shark *(Carcharias taurus)*		X		
sandbar shark *(Carcharhinus plumbeus)*		X		X
scup *(Stenotomus chrysops)*	X	X	X	
Spanish mackerel *(Scomberomorus maculatus)*	X	X	X	X
summer flounder *(Paralichthys dentatus)*		X	X	X
windowpane flounder *(Scophthalmus aquosus)*	X	X	X	X
winter flounder *(Pseudopleuronectes americanus)*	X	X	X	X