US Army Corps
of Engineers®
New York District

WESTCHESTER COUNTY STREAMS, BYRAM RIVER BASIN

FLOOD RISK MANAGEMENT FEASIBILITY STUDY

FAIRFIELD COUNTY, CONNECTICUT AND WESTCHESTER COUNTY, NEW YORK

FINAL INTEGRATED FEASIBILITY REPORT & ENVIRONMENTAL IMPACT STATEMENT

APPENDIX A.5:

Essential Fish Habitat Assessment

1. INTRODUCTION

In compliance with Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (1996 amendments), the New York District – U.S. Army Corps of Engineers (District) in partnership with the Town of Greenwich, CT, is providing this assessment of the potential effects on Essential Fish Habitat (EFH) from the proposed Alternative 5: U.S. Route 1 Bridge Replacements and Nonstructural Flood Risk Management (FRM) Measures within the 10% Floodplain of the Byram River Basin Flood Risk Management Feasibility Study. This alternative includes temporary disturbance of riverbed and bank sediments due to the removal of the existing bridge abutments within an estuarine-tidal reach of the Byram River. The National Oceanic and Atmospheric Administration (NOAA) grids and EFH mapping system are not detailed enough to show EFH designations within the affected reach of the Byram River. However, since the tidal range of the Byram River extends past the existing U.S. Route 1 bridges (i.e. project area) and the Long Island Sound is designated as EFH habitat, an EFH assessment was completed to demonstrate compliance with EFH requirements.

The following assessment addresses the potential adverse effects of discharging dredged material and placing fill materials as part of the bridge replacements within a tidal reach of the Byram River. The following best management practices (BMPs), at a minimum would be implemented:

- Operating in compliance with seasonal restriction recommendations to ensure the protection of natural resources;
- Utilizing previously disturbed areas such as existing bridge abutments to the maximum extent practicable;
- Disposing off-site of any contaminated dredged material; and
- Ensuring all fill materials are clean.

Furthermore, compliance with any additional Special Conditions mandated under the State of Connecticut and New York Clean Water Act (CWA) and Coastal Zone Management Act (CZMA) jurisdictions as implemented under their Federal Consistency determinations, would be used to avoid and minimize potential adverse effects to protected and/or managed species and their habitat, thereby precluding the need for any other mitigation.

2. PROJECT AUTHORIZATION, DESCRIPTION, AND PROPOSED ACTION

2.1. Federal Project Authorization

Byram River Flood Risk Management Feasibility Study, Greenwich, Connecticut and Village of Port Chester, New York was authorized by resolution of the Committee on Transportation and Infrastructure, Docket 2779, dated May 2, 2007.

2.2. Federal Project Description

The proposed project provides flood risk management to residential homes and commercial properties from overtopping of the Byram River in the Village of Port Chester, NY and the Town of Greenwich, CT. Please refer to **Figure 1** for project location.

2.3. Description of Planned Action

The District, in partnership with the Town of Greenwich, CT, proposes to remove the existing northbound and southbound U.S. Route 1 bridges over the Byram River and replace them with similar bridges at an elevation approximately three feet higher than the current elevation. The bridge replacement would consist of a 90-ft single span with the new bridge abutments installed outside of the river channel. The existing bridge decks currently cause flow from the Byram River to back up and exacerbate flooding upstream. Therefore, raising the elevation of the bridge decks and removing the existing abutments would lower the water surface by two to four feet during the 1% annual chance flood.

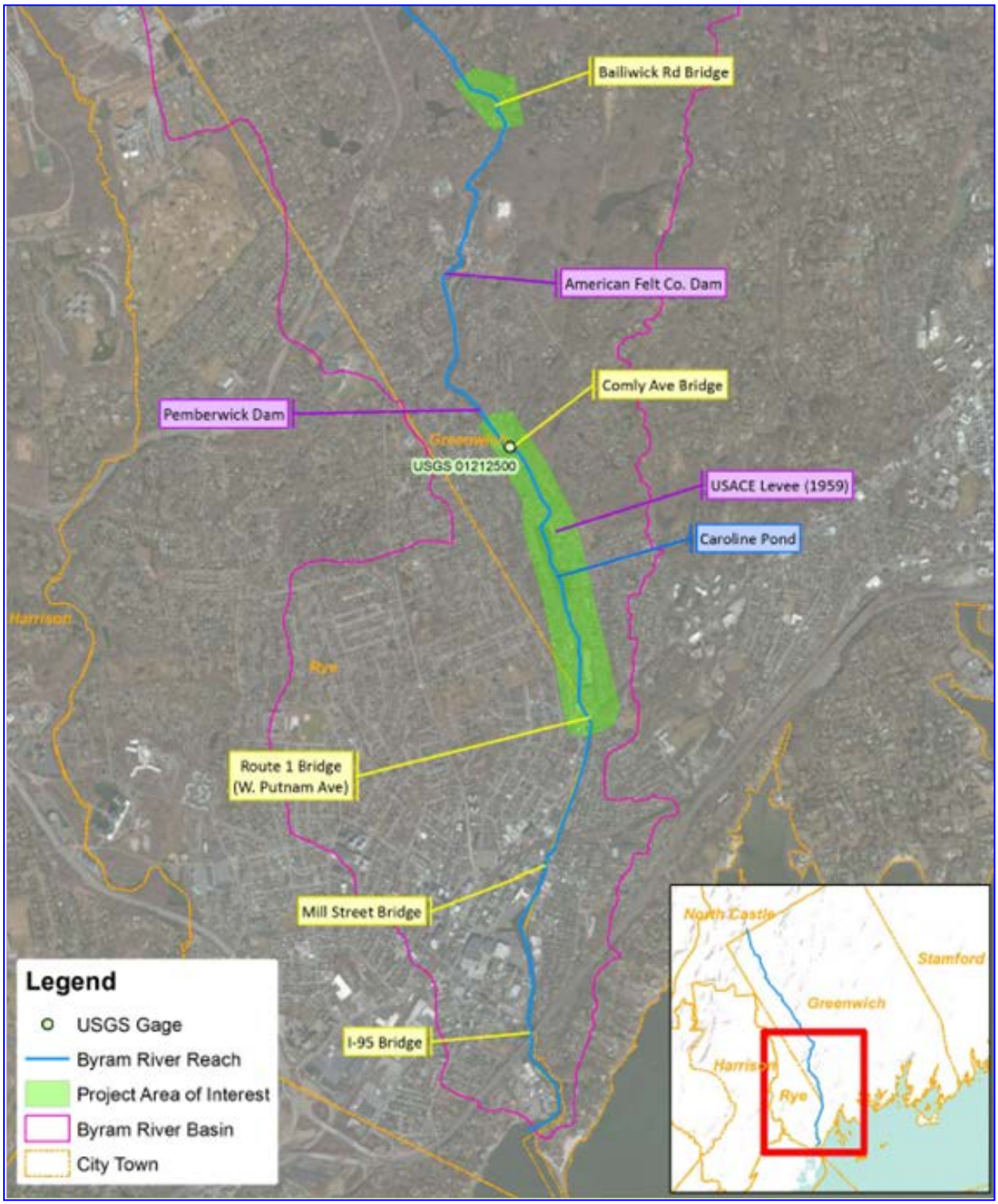
The proposed activities may result in temporary short-term and minor disturbances to the river channel and bottom sediments. It is anticipated that crews would work from the dry bank area; no construction vehicles would be allowed to enter the river channel. Any in-channel work associated with removal of bridge abutments would be performed in the dry with the aid of cofferdams.

3. DESCRIPTION OF STUDY AREA

The study area is in Town of Greenwich, Fairfield County, Connecticut and the Village of Port Chester, Westchester County, New York. The Town of Greenwich and the Village of Port Chester have been subjected to repeated, severe flooding caused by overflow of the Byram River due to precipitation events of high intensity, large amounts, and/or prolonged duration. The source of fluvial flooding is the Byram River. The 0.2% floodplain in the Byram River Basin contains approximately 500 structures. Equivalent annual damages have been estimated at $3 million. The largest floods on record resulted from the storms of October 1955, June 1972, September 1975, and April 2007. The study is scoped to address fluvial flood events, not coastal flooding, which constitute a separate flood mechanism.

The Byram River is approximately 13.5 miles long with a watershed of approximately 30 square miles. The river largely flows from north to south through five towns in both Connecticut (Town of Greenwich) and New York (Towns of Rye, North Castle, New Castle, and Bedford). The project area focuses on the river reach in the area of the southbound to northbound U.S. Route 1 bridges. The river width varies from approximately 70 feet at the southbound U.S. Route 1 bridge to approximately 80 feet at the northbound U.S. Route 1 bridge. The river banks are natural in the project area with an established tree canopy providing shade and cover. The natural substrate consists of muck and silt with exposed gravel bars.

Figure 1 - Byram River Project Area



All waters in New York State are assigned a letter classification that denotes their best uses. Letter classes such as A, B, C, and D are assigned to fresh surface waters, and SA, SB, SC, I, and SD to saline (marine) surface waters (NYSDEC 2018. http:/www.dec.ny.gov/chemical/23853.html). The surface water quality classification of the tidal portion of the Byram River is SC (source: New York Department of Environmental Conservation Environmental Resource Mapper and 6NYCRR Chapter X). The non-tidal portion, north of the U.S. Route 1 bridges, is designated as Class C. Both Class SC and C waters are suitable for fish, shellfish and wildlife propagation and survival, and have a best usage of fishing. The water quality is suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes (6 NYCRR Part 701).

4. ANALYSIS OF EFFECTS ON ESSENTIAL FISH HABITAT (EFH)

Best management practices would be utilized to avoid, minimize and mitigate potential adverse effects to EFH. The removal of the existing bridge abutments and subsequent restoration of the river banks would be required to take place in the "dry" using a cofferdam (i.e. Portodam or equivalent) to minimize any increase in turbidity in surrounding waters. The proposed removal of the bridge abutments may temporarily increase turbidity; however, any increases in turbidity are projected to be short in duration and contained within the cofferdam area. Any impact on water quality would also be temporary and localized since turbidity levels and the concentration of materials suspended in the water column would quickly return to ambient conditions. A silt curtain would be installed downstream of the work area to further prevent any sediment from migrating downstream. Furthermore, to minimize impacts to federally-managed fish species, in-stream work would not be conducted during recommended time of year (TOY) restrictions. The duration of the in-stream work is expected to be no longer than 30 days for the two bridges. The EFH Worksheet is Attachment A and provides more detailed analyses of the potential adverse effects on EFH in the project area.

5. DIRECT AND INDIRECT EFFECTS ON EFH MANAGED SPECIES

5.1. EFH Species Listed for the Project Area

As mentioned above, since NOAA's EFH mapping system grids are not detailed enough to show EFH designations within the affected reach of the Byram River, the mapped EFH designations for the Long Island Sound were used. The federally-managed species with EFH designations in the Long Island Sound within the distinct designated 10′ latitudinal and longitudinal square closest to the tidal reach of the Byram River are listed in attached Tables 1 and 2 Attachment A. Table 1 covers the Greenwich CT grid and Table 2 covers the Village of Port Chester grid.

5.2. Potential EFH Impacts

The EFH Worksheet contained in Attachment A is the formal EFH assessment for the actions that comprise the proposed project.

5.2.1. Summary of Direct Impacts

The following is a list of the anticipated direct impacts to federally-managed species or designated EFH:

There are no significant (permanent, long term or extensive) adverse direct impacts to EFH associated with the Federal Project.

5.2.2. Summary of Indirect Impacts

The following is a list of the anticipated indirect impacts to federally-managed species or designated EFH:

There are no significant (permanent, long term or extensive) adverse indirect impacts to EFH associated with the Federal project.

6. CUMULATIVE EFFECTS ON EFH MANAGED SPECIES

Based on a review of available existing information, there are no other known planned projects by the U.S. Army Corps of Engineers, Port Chester or Greenwich, or others in the project vicinity that would adversely impact federally-managed species or designated EFH associated with the Byram River. Therefore the proposed Project would not result in significant (i.e. permanent, long term or extensive) cumulative impacts on federally-managed species or designated EFH associated with the proposed Project.

Attachment A contains support for our analyses of potential effects to EFH from the proposed Project.

7. CONCLUSION

Based on the analyses and conclusions presented the proposed bridge replacements would have no significant impact to EFH for the species and life stages listed in Tables 1 and 2. Disturbance to river sediments would be temporary due to the removal of the existing bridge abutments, center pier and subsequent bank stabilization.

Environmentally sound engineering practices and BMPs would be employed to avoid and minimize adverse impacts to EFH. BMPs such as use of cofferdam to complete the in-stream work in the “dry”, downstream silt curtain, and implementing recommended TOY restrictions to protect managed fishery resources during sensitive life stages would ensure minimal adverse impacts to these resources and designated EFH. By utilizing these BMPs (in addition to any

Special Conditions mandated by the states), the project would avoid and minimize impacts to natural resources, and result in no need for additional or compensatory mitigation measures.

There are no significant (permanent, long term or extensive) adverse direct effects or indirect effects to EFH associated with the Federal project.

The District has concluded that there would be no significant adverse effect on EFH resulting from the construction of the proposed Byram River Basin Flood Risk Management Feasibility Study project, and therefore concludes that EFH Consultation is not required.

8. ATTACHMENTS

Attachment A - NOAA Fisheries Greater Atlantic Regional Fisheries Office Essential Fish Habitat (EFH) Consultation Guidance ERH Assessment Worksheet

Attachment A

NOAA Fisheries Greater Atlantic Regional Fisheries Office Essential Fish Habitat (EFH) Consultation Guidance ERH Assessment Worksheet

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.

Summary of Essential Fish Habitat (EFH) Designation

10&#65533; x 10&#65533; Square Coordinates:

Boundary	North	East	South	West
Coordinate	41° 10.0&#65533; N	73° 30.0&#65533; W	41° 00.0&#65533; N	73° 40.0&#65533; W

Square Description (i.e. habitat, landmarks, coastline markers): Atlantic Ocean waters within the square within Long Island Sound affecting south of the following: Greenwich, CT., Belle Harbor, CT., Cos Cob, CT., Riverside, CT., Stamford, CT., Glenbrook, CT., and Mianus, CT., along with Greenwich Pt., Shippan Pt., Field Pt., Cos Cob Harbor, and the entrance to the Ripparan River and the Mianus River, from Holly Pond south of Noroton Heights to east of Port Chester NY. Also affected are: Captain Harbor, Newfoundland Reef, The Cows, Stamford Harbor, Westcott Cove, and western Holly Pond.

Table 1

Species	Eggs	Larvae	Juveniles	Adults
Atlantic salmon *(Salmo salar)*			X	X
Atlantic cod *(Gadus morhua)*				
haddock *(Melanogrammus aeglefinus)*				
pollock *(Pollachius virens)*			X	X
whiting *(Merluccius bilinearis)*				
offshore hake *(Merluccius albidus)*				
red hake *(Urophycis chuss)*	X	X	X	X
white hake *(Urophycis tenuis)*				
redfish *(Sebastes fasciatus)*	n/a			
witch flounder *(Glyptocephalus cynoglossus)*				
winter flounder *(Pseudopleuronectes americanus)*	X	X	X	X
yellowtail flounder *(Limanda ferruginea)*				
windowpane flounder *(Scophthalmus aquosus)*	X	X	X	X
American plaice *(Hippoglossoides platessoides)*			X	X
ocean pout *(Macrozoarces americanus)*				
Atlantic halibut *(Hippoglossus hippoglossus)*				
Atlantic sea scallop *(Placopecten magellanicus)*				
[illegible] *(Clupea [illegible])*			X	X

Atlantic sea herring *(Clupea harengus)*			X	X
monkfish *(Lophius americanus)*				
bluefish *(Pomatomus saltatrix)*			X	X
long finned squid *(Loligo pealeii)*	n/a	n/a		
short finned squid *(Illex illecebrosus)*	n/a	n/a		
Atlantic butterfish *(Peprilus triacanthus)*				
Atlantic mackerel *(Scomber scombrus)*	X	X	X	X
summer flounder *(Paralichthys dentatus)*			X	
scup *(Stenotomus chrysops)*	X	X	X	X
black sea bass *(Centropristis striata)*	n/a		X	
surf clam *(Spisula solidissima)*	n/a	n/a		
ocean quahog *(Artica islandica)*	n/a	n/a		
spiny dogfish *(Squalus acanthias)*	n/a	n/a		
tilefish *(Lopholatilus chamaeleonticeps)*				
king mackerel *(Scomberomorus cavalla)*	X	X	X	X
Spanish mackerel *(Scomberomorus maculatus)*	X	X	X	X
cobia *(Rachycentron canadum)*	X	X	X	X
sand tiger shark *(Carcharias taurus)*		X		

Summary of Essential Fish Habitat (EFH) Designation

10° x 10° Square Coordinates:

Boundary	North	East	South	West
Coordinate	41° 00.0° N	73° 40.0° W	40° 50.0° N	73° 50.0° W

Square Description (i.e. habitat, landmarks, coastline markers): The waters within the square within the Hudson River estuary on the north shore of Long Island, affecting the following: north of Manhasset Neck, Port Washington, NY., Berker Pt., Sands Pt., and Mott Pt., the tip of Hewlett Pt. on the north of Great Neck, north of Manhasset, NY., and Douglastown, NY. Also, the waters within Long Island Sound south of mainland New York from Port Chester, NY., and Rye, NY., to Westchester, NY., on East Chester Bay, along with south of the following: Harrison, NY., Mamaroneck, NY., Larchmont, NY., Pelham, NY., New Rochelle, NY., Pelham Manor, NY., and East Chester, NY. Also, around the following islands and features: Hart, City, Davids, Pea, Hen, Glen, Hunter and Huckleberry, the Scotch Caps, Middle Gorund, Execution Rocks, Gangway Rocks, Porgy Shoal and Hen and Chickens Rocks, along with the Hutchinson River, Mamaroneck Harbor, Milton Harbor, and Larchmont Harbor.

Table 2

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod *(Gadus morhua)*			X	X
haddock *(Melanogrammus aeglefinus)*				
pollock *(Pollachius virens)*			X	X
whiting *(Merluccius bilinearis)*				
offshore hake *(Merluccius albidus)*				
red hake *(Urophycis chuss)*	X	X	X	X
white hake *(Urophycis tenuis)*				
redfish *(Sebastes fasciatus)*	n/a			
witch flounder *(Glyptocephalus cynoglossus)*				
winter flounder *(Pseudopleuronectes americanus)*	X	X	X	X
yellowtail flounder *(Limanda ferruginea)*				
windowpane flounder *(Scophthalmus aquosus)*	X	X	X	X
American plaice *(Hippoglossoides platessoides)*				
ocean pout *(Macrozoarces americanus)*				
Atlantic halibut *(Hippoglossus hippoglossus)*				
Atlantic sea scallop *(Placopecten magellanicus)*				
Atlantic sea herring *(Clupea harengus)*		X	X	X
monkfish *(Lophius americanus)*				
bluefish *(Pomatomus saltatrix)*			X	X
long finned squid *(Loligo pealeii)*	n/a	n/a		

short finned squid *(Illex illecebrosus)*	n/a	n/a		
Atlantic butterfish *(Peprilus triacanthus)*		X	X	X
Atlantic mackerel *(Scomber scombrus)*			X	X
summer flounder *(Paralichthys dentatus)*		X	X	X
scup *(Stenotomus chrysops)*	X	X	X	X
black sea bass *(Centropristis striata)*	n/a		X	X
surf clam *(Spisula solidissima)*	n/a	n/a		
ocean quahog *(Artica islandica)*	n/a	n/a		
spiny dogfish *(Squalus acanthias)*	n/a	n/a		
tilefish *(Lopholatilus chamaeleonticeps)*				
king mackerel *(Scomberomorus cavalla)*	X	X	X	X
Spanish mackerel *(Scomberomorus maculatus)*	X	X	X	X
cobia *(Rachycentron canadum)*	X	X	X	X
sand tiger shark *(Carcharias taurus)*		X		

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

PROJECT NAME: Byram River Flood Risk Management Feasibility Study

DATE: 02/28/2018

PROJECT NO.:

LOCATION (Water body, county, physical address):
Byram River, Greenwich CT Fairfield Co., CT and Village of Port Chester, NY Westchester Co.

PREPARER: Magdalena Lofstedt, Senior Environmental Scientist, CDM Smith Inc.

Step 1: Use NOAA's EFH Mapper to generate the list of designated EFH for federally-managed species and life stages for the geographic area of interest. Use this 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:** See Tables 1 and 2, Attached	✔	
Is the action located in or adjacent to EFH designated for larvae? **List the species:** See Tables 1 and 2, Attached	✔	
Is the action located in or adjacent to EFH designated for juveniles? **List the species:** See Tables 1 and 2, Attached	✔	

Is the action located in or adjacent to EFH designated for adults or spawning adults? List the species: See Tables 1 and 2, Attached	✔	

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?	Water column
What are the sediment characteristics?	The river bottom sediment consists of silt, sand, and gravel, The sediments have not been sampled and analyzed for grain size or chemical parameters; this will be done as part of the design and permitting phase.
Is there submerged aquatic vegetation (SAV) at or adjacent to project site? If so describe the SAV species and spatial extent.	No
Are there wetlands present on or adjacent to the site? If so, describe the spatial extent and vegetation types.	Neither CT or The NY environmental database mapping systems indicate any state regulated wetlands within or adjacent to the site. The National Wetland Inventory mapper does not show any wetlands present on or adjacent to the site (https://www.fws.gov/wetlands/data/mapper.html); Byram River is mapped as Riverine habitat upstream of northbound Route 1 and as Estuarine habitat downstream of northbound Route 1. It was confirmed during the site walk in 2013 that there are no wetlands present on or adjacent to the Route 1 bridges.

Is there shellfish present at or adjacent to the project site? If so, please describe the spatial extent and species present.	No
Are there mudflats present at or adjacent to the project site? If so please describe the spatial extent.	No
Is there rocky or cobble bottom habitat present at or adjacent to the project site? If so, please describe the spatial extent.	No
Is Habitat Area of Particular Concern (HAPC) designated at or near the site? If so for which species, what type habitat type, size, characteristics?	No
What is the typical salinity, depth and water temperature regime/range?	Typical salinity is estimated at 0.5 - 18 ppt. The Byram River is brackish within the project area. The average depth of the river within the project footprint is 1.5 feet. No data is available on water temperature.
What is the normal frequency of site disturbance, both natural and man-made?	Typical estuarine disturbances (diurnal tidal currents, temperature fluctuations, resuspended sediments) compounded by anthropogenic disturbances such as non-point source discharges (i.e. stormwater runoff).
What is the area of proposed impact (work footprint & far afield)?	The two bridge replacements would alter approximately 5,000 sf of river bottom within the Byram River for the removal of existing bridge abutments and subsequent bank stabilization. This includes the footprint of the existing bridge abutments and adjacent river bottom sediments that would be temporarily altered.

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.			Disturbance to bottom sediments from removal of existing bridge abutments and subsequent bank stabilization. All in-stream work would be required to be performed in the "dry" using cofferdams (Portodam or equivalent). Duration of the in-channel work would be approximately 30 days.
Will the benthic community be disturbed? If no, why not? If yes, describe in detail how the benthos will be impacted.	✔		There may be some very minor alteration to the benthic community in the immediate vicinity of the existing bridge abutments during the removal from disturbing the adjacent bottom sediments.
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 present on 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?		✔	There is no salt marsh habitat at or near the project site.

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?	☐	☑	There is no mudflat habitat at or near the project site.
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.	☐	☑	No shellfish habitat is present at or near the project site.
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?	☐	☑	Approximately 0.09 acres of substrate, of which a portion is comprised of gravel, will experience minor disturbance associated with construction of the new bridge abutments. Approximately 0.02 acres of natural substrate will be restored through removal of the center bridge piers. In-situ substrate, including cobble and gravel will be restored to the area.
Will sediments be altered and/or sedimentation rates change? If no, why not? If yes, describe how.	☐	☑	Existing bottom sediments will be temporarily altered, however all work will be required to be done in the "dry" using a cofferdam (mostly likely Portodam or equivalent) so no resuspension of river sediments in the water column is anticipated. The proposed activities will have no effect on sedimentation rates or sediment characteristics.
Will turbidity increase? If no, why not? If yes, describe the causes, the extent of the effects, and the duration.	☑	☐	Only temporary and minor increases in turbidity are expected as a result of construction. Impacts will be minimized by the use of Best Management Practices.

Will water depth change? What are the current and proposed depths?		✔	The existing water depths in the project area will not change as the temporarily altered river bottom from the removal of the existing bridge abutments will be restored to preconstruction grades with material matching existing conditions.
Will contaminants be released into sediments or water column? If yes, describe the nature of the contaminants and the extent of the effects.		✔	Based on a review of available existing data, there are no known conatmination issues within the project area. Sediment sampling will be conducted within the project area as part of the design and permitting phase. Appropriate sediment management and disposal procedures would be developed and incorporated into the construction specifications to address contaminated sediment, if confirmed to be present. All in-stream work would be required to be performed in the "dry" using cofferdams (Portodam or equivalent) and thereby preventing the release of any contaminated sediment into the water column and subsequent transport downstream.
Will tidal flow, currents, or wave patterns be altered? If no, why not? If yes, describe in detail how.		✔	The temporary alteration to bottom sediments from the removal of the existing bridge abutments and subsequent bank stabilization will have no effect on tidal flow, currents or wave patterns of the Byram River or the downstream Long Island Sound. Overall, the removal of the existing center piers will restore the river's natural flow regime.
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.		✔	There may be some very short term (i.e. less than 24 hrs) temporary impacts to water quality from minor increases in turbidity during the installation and removal of the cofferdam for the removal of the existing bridge abutments. Water quality impacts will be minimized during construction using Best Management Practices.
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.		✔	The Project does not include any changes that would permanently impact ambient noise levels. However, there will be some temporary increase in ambient noise levels associated with construction activities. Construction related noise impacts will be mitigated by using new or well-maintained equipment with standard intake/exhaust mufflers and engine jackets. The best available noise-reducing technology (i.e., specialized mufflers and shields) may be necessary to eliminate impacts to nearby receptors. Construction activities will also be limited to day time hours of 7am to 5pm.
Does the action have the potential to impact prey species of federally managed fish with EFH designations?	✔		There would be some temporary impacts to benthic organisms during the 30 days that the cofferdam would be installed within the river. It is estimated that approximately 5,000 square feet river bottom would be adversely affected. It is anticipated that the impacted area would return to suitable benthic habitat upon completion of construction once the river flow is restored. In fact, the removal of the existing bridge abutments would provide additional habitat for benthic organisms to thrive.

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. NOAA's EFH Mapper 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.**		✔	The proposed Project would not adversely affect spawning of EFH designated species since in-stream work would not be conducted during recommended time of year (TOY) restrictions. TOYs are established by examining the life history and habitat requirements for each species and are designed to reasonably encompass species life stages (i.e. spawning, larval settlement, and early juvenile development) that are both more vulnerable to impact and more critical to the fitness of a population.
Nursery **If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.**		✔	The proposed Project would not adversely affect nursery areas of EFH designated species since in-stream work would not be conducted during recommended time of year (TOY) restrictions. See above.
Forage **If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.**		✔	The proposed Project would not adversely affect forage areas for EFH designated species. As mentioned above, there would be some temporary impacts to benthic organisms during the 30 days that the cofferdam would be installed within the river. It is estimated that approximately 5,000 square feet river bottom would be adversely affected. It is anticipated that the impacted area would return to suitable benthic habitat upon completion of construction once the river flow is restored. In fact, the removal of the existing bridge abutments would provide additional habitat for benthic organisms to thrive.
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.			Temporary and limited to the removal of the existing bridge abutments. It is anticipated that the duration of the in-stream work required to be done in the "dry" using a cofferdam will take no more than 30 days.
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.		✔	Compensatory mitigation will not be required since there will be no long-term or permanent impacts to resources including EFH. Mitigation will be incorporated into the project plans as BMPs, including scheduling the project outside of any in-stream time of year (TOY) restrictions to avoid and minimize any temporary impact to the EFH that may be present in the project area.

<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	NA
American eel	Byram River is known to provide important habitat to American eel (Anguilla rostrata). The American eel is a catadromous fish that spawns in the marine waters of the Sargasso Sea, migrates as an elver from the sea to the river, and spends its adult life in the river. Most eels reach sexual maturity around 5 years of age at which point they migrate back to the Sargasso Sea to spawn. The Project area may be foraging habitat for the American eel. The Project will not disrupt spawning or egg development, or juvenile nursery. In order to avoid impacting American eel, the removal of the existing bridge abutments will be done in the "dry" using a cofferdam (most likely a Portodam) and outside of the spring (March 15-June 30) and fall (Sept 15-Oct 31) migratory seasons to comply with recommended TOY restrictions.
American shad	NA
Atlantic menhaden	NA
blue crab	NA
blue mussel	NA
blueback herring	NA

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

Useful Links

National Wetland Inventory Maps

EPA's National Estuaries Program

Northeast Regional Ocean Council (NROC) Data

Mid-Atlantic Regional Council on the Ocean (MARCO) Data

Resources by State:

Maine
Eelgrass maps

Maine Office of GIS Data Catalog

Casco Bay Estuary Partnership

Maine GIS Stream Habitat Viewer

New Hampshire
New Hampshire's Statewide GIS Clearinghouse, NH GRANIT

New Hampshire Coastal Viewer

Massachusetts
Eelgrass maps

MADMF Recommended Time of Year Restrictions Document

Massachusetts Bays National Estuary Program

Buzzards Bay National Estuary Program

Massachusetts Division of Marine Fisheries

Massachusetts Office of Coastal Zone Management

Rhode Island
Eelgrass maps

Narraganset Bay Estuary Program

Rhode Island Division of Marine Fisheries

Rhode Island Coastal Resources Management Council

Connecticut

Eelgrass Maps

Long Island Sound Study

CT GIS Resources

CT DEEP Office of Long Island Sound Programs and Fisheries

CT Bureau of Aquaculture Shellfish

Maps CT River Watershed Council

New York

Eelgrass report

Peconic Estuary Program

NY/NJ Harbor Estuary

New Jersey

Submerged Aquatic Vegetation mapping

Barnegat Bay Partnership

Delaware

Partnership for the Delaware Estuary

Center for Delaware Inland Bays

Maryland

Submerged Aquatic Vegetation mapping

MERLIN

Maryland Coastal Bays Program

Virginia

Submerged Aquatic Vegetation mapping