

FHWA Programmatic Essential Fish Habitat Consultation For Select Transportation Actions in the NMFS Greater Atlantic Region

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1.0 Programmatic Consultation Overview

Since 2013, the Federal Highway Administration (FHWA) and NOAA’s National Marine Fisheries Service’s (NMFS), Greater Atlantic Regional Fisheries Office, Habitat Conservation Division (GARFO HCD) have coordinated on the development of programmatic approaches to consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife Coordination Act (FWCA). Section 305(b)(2) of the MSA requires federal action agencies such as FHWA or their designated non-federal representative, such as state Departments of Transportation (state DOTs), to consult with NMFS on any action they authorize, fund, or carry out that may adversely affect essential fish habitat (EFH).¹ NMFS also provides comments under the FWCA to reduce environmental impacts to migratory, estuarine, and marine fish and their habitats, during EFH consultation. Based on the EFH regulations at 50 CFR Subpart K, 600.920(j), programmatic consultation is an efficient and effective method for FHWA and NMFS to consult on a potentially large number of projects that FHWA routinely funds, authorizes, or carries out in the Greater Atlantic Region (GAR).² Due to the routine nature of the transportation actions as described herein, and with the descriptions of the stressors and effects of transportation actions on EFH in the NMFS GARFO/FHWA Best Management Practices (BMP) Manual, sufficient information is available to develop programmatic EFH conservation recommendations and other recommendations under the FWCA that will address reasonably foreseeable adverse impacts to EFH and NOAA trust resources. This programmatic EFH consultation was developed upon a thorough review of past and projected transportation actions to create a more efficient consultation process for certain transportation projects that FHWA funds, authorizes, or carries out through their authorities.

This programmatic EFH consultation reduces the number of projects screened by GARFO HCD on an individual basis by issuing EFH conservation recommendations for transportation actions that may adversely affect EFH or NOAA trust resources, without detailed information on a specific project or site. Transportation activities may avoid and minimize adverse impacts to EFH either individually or cumulatively by modifying an activity according to the EFH conservation recommendations provided. This programmatic EFH consultation enables FHWA/state DOTs to determine when an action will require individual EFH consultation with GARFO HCD.

1.1 Covered Transportation Activities

FHWA supports state and local governments in the design, construction, and maintenance of the nation’s highway system. This programmatic EFH consultation applies to a subset of transportation activities that are funded or authorized by FHWA that may adversely affect EFH and/or other NOAA trust resources. FHWA administers the Federal-Aid Highway Program, Federal Lands Highway Program, and Federal Lands Access Program to maintain the integrity and safety of roads and bridges. Although this programmatic EFH consultation is with FHWA,

¹ An adverse effect is any impact that reduces quality and/or quantity of EFH. This includes direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to species and their habitat, and other ecosystem components, or reduction of the quality and/or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of EFH.

² The Greater Atlantic Region (GAR) includes coastal states from Maine through Virginia. Specifically, this includes the states of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, and Virginia, and the District of Columbia.

FHWA Divisions or state DOTs may use this consultation for applicable FHWA funded or authorized activities. FHWA/state DOT may use this consultation for applicable projects or consult with GARFO HCD on a case-by-case basis through individual EFH consultation. Regardless of the transportation project contracting approach, complete information on the project design in relation to effects to EFH must be available, in accordance with the NMFS/FHWA Consultation Process Guide for each of the projects using this consultation.

This programmatic EFH consultation will satisfy MSA requirements for a covered transportation project and conclude consultation, as confirmed through a completed Verification Form. Individual transportation projects that undergo programmatic EFH consultation may require permits issued by federal agencies including the U.S. Army Corps of Engineers or the U.S. Coast Guard. In these cases, FHWA shall be the lead federal agency for the purposes of EFH consultation with GARFO HCD on FHWA funded or authorized projects and FHWA/state DOT shall include the completed Verification Form in any other permit application materials, as necessary, to confirm EFH consultation is complete.

Actions covered under this consultation include bridge repair, demolition, and replacement; culvert repair and replacement; slope stabilization; and docks, piers, and waterway access projects, with certain limitations and restrictions, occurring within the GAR. This consultation is applicable in tidally influenced waters and wetlands of the U.S. and non-tidal waters that support diadromous fish within the GAR. The projects included under this programmatic EFH consultation will not have a substantial adverse effect on EFH, because FHWA/state DOT will implement the projects in a manner that avoids and minimizes impacts to EFH and sensitive life stages of managed species and other trust resources.

Transportation activities must adhere to all the applicable programmatic EFH conservation recommendations provided in Appendix A below for a project to be part of this programmatic EFH consultation, except where FHWA/state DOT provides justification and GARFO HCD concurs via Verification Form that the project does not have substantial effect on EFH. Projects that deviate from the activity descriptions or fail to implement the appropriate programmatic EFH conservation recommendations herein (excluding any additional justification) will require individual EFH consultation if they may adversely affect EFH or NOAA trust resources.

1.2. Excluded Activities

The specific activities covered under this programmatic EFH consultation, including thresholds and required conservation recommendations, are further described in Appendix A. The following of excluded activities is provided up front, for FHWA/state DOTs to determine up front if a project is excluded from the programmatic consultation. These activities are not eligible for the FHWA programmatic EFH consultation and will require individual consultation with GARFO HCD. This is because the activity and/or the effects of such work are expected to be more than minimal and/or additional information will be required to determine the effects and provide recommendations to avoid and minimize effects to EFH and NOAA trust resources.

1. Any work (including anchoring) that results in impacts to:
 - existing or historically mapped submerged aquatic vegetation (SAV) beds or areas within 100 feet of existing or historically mapped SAV beds;

- $\geq 1,000$ square feet of salt marsh, areas containing shellfish³, and intertidal areas;
 - ≥ 100 square feet of natural rocky habitat (e.g., bedrock, boulders, cobble, and/or gravel);
2. Stream channelization.
 3. Any temporary structures, construction access, and dewatering activities proposed to be in place for \geq two years.
 4. Slip-lining or invert lining existing culverts.
 5. Any permanent structures longer than 150 linear feet over salt marsh.
 6. Construction of new or expansion of existing boating facilities⁴ or ferry terminals.
 7. Independent pedestrian trails or bridges located directly adjacent to an existing crossing.
 8. New or improvement dredging.
 9. Any nearshore disposal or beach nourishment activities.
 10. New fill/stabilization placed below mean low water in excess of 200 linear feet (lf).
 11. Replacement or maintenance of:
 - sloped stabilization structures > 200 lf *and* waterward of the existing toe, or
 - vertical structures > 18 inches waterward of the existing face *and* > 200 lf.
 12. In-water utility lines ≥ 100 lf installed by trench excavation, or ≥ 200 lf installed by jet-plow, fluidization or other direct burial methods.
 13. Thin layer deposition as a part of wetland restoration.
 14. Placement of any seed shellfish, spatted-shell, or cultch in SAS.⁵
 15. Any exploratory trenching or other similar survey activities.
 16. Airgun seismic activities.
 17. Any new permanent surface water withdrawal, water intakes, or water diversions.
 18. Any blasting or use of explosives that affects EFH or diadromous species habitats.
 19. Construction of new bridges or culverts, where no crossing existed previously.
 20. Any new or replacement causeways (raised roadways across waters or wetlands).
 21. Any in-water work on dams, tide gates, or breakwaters.

³ A shellfish survey is required to make this determination unless it is verified that minimal shellfish are present, e.g., per the maps in Appendix E or conversations with local officials.

⁴ For the purposes of this programmatic EFH consultation, a boating facility is boat docking or mooring space for more than two non-commercial vessels.

⁵ Special aquatic sites (SAS) are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E. SAS includes fish and wildlife sanctuaries and refuges, wetlands, mudflats, SAV beds, and riffle/pool complexes.

2.0 Programmatic Consultation Procedures

For a given transportation activity, FHWA/state DOT must first determine whether EFH and/or NOAA trust resources may be present and whether the activity is applicable under this programmatic EFH consultation. In accordance with the FHWA/GARFO Consultation Process Guide, complete information on the project design relating to effects on EFH and NOAA trust resources must be available to consult under the programmatic EFH consultation. The review and consultation procedures are further described in the FHWA/State DOT Standard Operating Procedures (SOPs) provided as Appendix C.

2.1 Project Verification Requirements

After implementation of this programmatic EFH consultation, FHWA/state DOT will not need to initiate individual EFH consultation for proposed transportation projects that incorporate all applicable programmatic EFH conservation recommendations described in Appendix A. The programmatic EFH conservation recommendations must be included as commitments in all FHWA/state DOT commitments and/or incorporated into the project plans.

For each project proposed under this programmatic EFH consultation, FHWA/state DOT will provide all of the required project-specific information to GARFO HCD, via the Verification Form in Appendix B, upon obtaining complete project information. FHWA/state DOT will email the Verification Form to GARFO HCD at NMFS.GAR.EFH.Consultation@noaa.gov. The Verification Form will serve as a record of the activity and account for cumulative effects of the activities funded or authorized by FHWA. FHWA will track and analyze the activities on an annual basis, as noted below, and will review the results with GARFO HCD.

FHWA/state DOT will send the Verification Form to GARFO HCD, as noted in the SOPs. Upon receipt of the Verification Form, GARFO HCD will indicate whether the project is eligible for the programmatic EFH consultation and will notify FHWA/state DOT if they have any concerns and may request additional information. For a project to proceed under the programmatic EFH consultation, FHWA/state DOT must either receive the Verification Form back from GARFO HCD indicating their concurrence or they may assume GARFO HCD's concurrence 30 calendar days after submitted the form if GARFO HCD does not respond. Projects that do not incorporate all applicable programmatic EFH conservation recommendations may still be eligible for the programmatic EFH consultation, if an individual EFH consultation is not otherwise required. The effects to EFH must not be substantial and FHWA/state DOT must indicate which EFH conservation recommendations were not included and provide justification as to why the conservation recommendations were not included, along with any applicable measures that are proposed.

2.2 Individual EFH Consultation

Individual EFH consultation is required for proposed transportation activities that do not fit within the described project categories, that do not follow all the applicable EFH conservation recommendations or that are specifically identified as needing individual consultation. FHWA/state DOT will email the EFH consultation request to GARFO HCD at NMFS.GAR.EFH.Consultation@noaa.gov, as described in the individual consultation process in the SOPs (Appendix C).

2.3 Annual Meeting

Following the implementation of this programmatic EFH consultation, FHWA and GARFO HCD will meet either in-person or via conference call annually, at least initially. FHWA and NMFS may subsequently agree to meet less often if both agencies agree that the programmatic is functioning as intended and if less frequent meetings will not undermine the goals of the programmatic EFH consultation. FHWA may invite Divisions and state DOTs to participate in the Annual Meeting. At the meeting, FHWA and NMFS will:

- discuss the annual tracking of covered projects;
- evaluate and discuss the continued effectiveness of the programmatic EFH consultation;
- account for any new information or technology;
- ensure that activities authorized by the programmatic consultation continue to minimize adverse effects to EFH; and/or
- update the procedures and conservation recommendations, if necessary.

2.4 Annual Report

FHWA will provide an annual region-wide report of the activities funded, authorized, and/or carried out under this programmatic EFH consultation for the purpose of determining the effectiveness of the programmatic EFH consultation and calculating cumulative effects. This also enables tracking of transportation activities and adaptive management techniques. FHWA will provide the compiled information to GARFO HCD no later than May 1, each year that the programmatic EFH consultation is in effect. If the annual report indicates that adaptive measures are necessary, they will be explored during the annual meeting described above. The Annual Report shall include all the information on the Annual Reporting Spreadsheet, provided in Appendix F.

FHWA will send the Annual Reporting Spreadsheet and description of results to:

NOAA's National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
Habitat Conservation Division
Attn: Lou Chiarella, Assistant Regional Administrator
55 Great Republic Drive
Gloucester, MA 01930
lou.chiarella@noaa.gov

2.5 Revisions

FHWA and GARFO HCD will discuss the need for revisions at the annual meetings, as noted above. Revisions may be needed to account for new information or technology or to better streamline the coordination process. GARFO HCD may revise this document at any time by agreement of both agencies. At any time, GARFO HCD or FHWA may revoke this programmatic EFH consultation if it is not being implemented as intended.

2.6 Statutory Response Requirement

Section 305(b)(4)(B) of the MSA requires FHWA to provide a written response to this programmatic EFH consultation within 30 calendar days of receipt. FHWA must respond to GARFO HCD in writing before this programmatic EFH consultation can take effect. The response must indicate FHWA's acceptance of the conservation recommendations to avoid, minimize, or offset the impacts from covered transportation projects on EFH. The continued use of the programmatic EFH consultation is contingent on acceptance of the subsequent required annual reports by GARFO HCD.

2.7 Supplemental Consultation

Pursuant to 50 CFR 600.920(l), FHWA must reinitiate EFH consultation with GARFO HCD if a proposed action is substantially revised in a manner that may adversely affect EFH, if new information becomes available that affects the basis for NMFS' EFH conservation recommendations, or if the activity is no longer covered by this programmatic EFH consultation. In addition, if GARFO HCD receives new or additional information that may affect the programmatic EFH conservation recommendations, GARFO HCD may request additional consultation and/or provide additional EFH conservation recommendations.

2.8 Training

As requested by FHWA, GARFO HCD will provide training to FHWA/state DOT staff on the application of these procedures and implementation of the FHWA GARFO programmatic EFH consultation. Training will be made available to staff through workshops, web-based trainings, or other appropriate forums. GARFO HCD welcomes FHWA training on project process, design, and construction.

3.0 Geographic Scope and EFH

The geographic scope of this programmatic consultation includes all tidal waters and non-tidal waters that support diadromous fish, in the jurisdiction of GARFO HCD. Specifically, this includes coastal and riverine areas within and offshore of the states of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, and Virginia, and the District of Columbia. The New England, Mid-Atlantic, and South Atlantic Fishery Management Councils designate EFH for multiple federally managed fish and shellfish species in marine, estuarine, and riverine waters of the GAR. Transportation activities under this programmatic EFH consultation would occur in areas identified as EFH for various life stages of fish species managed by the Councils.

3.1 EFH Habitat Descriptions

EFH includes pelagic water column habitat as well as benthic bottom habitats such as sand, mud, gravel, cobble, hard bottom, submerged aquatic vegetation (SAV), and areas containing shellfish. Structurally complex habitats, rocky habitats, and areas containing shellfish are productive areas, which provide shelter and forage for many of the managed species. In addition, special aquatic sites (SAS) are areas that are afforded additional protection due to their significant contribution to the environment under the Section 404(b)(1) guidelines of the Clean Water Act. They are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E. SAS include fish and wildlife sanctuaries and refuges, wetlands, mudflats, SAV beds, and riffles and pool complexes. The GARFO HCD website contains [EFH descriptions](#) for each life stage of managed species in the GAR. The links provided in Appendix E may help transportation agencies obtain general fishery resource and habitat information at a project site.

3.1.1 Submerged Aquatic Vegetation (SAV)

SAV, including eelgrass, plays a critical ecosystem role. The U.S. Environmental Protection Agency designated SAV as an SAS under Section 404(b)(1) of the Clean Water Act, due to its important role in the marine ecosystem for nesting, spawning, nursery cover, and forage areas for fish and wildlife. Furthermore, the Mid-Atlantic Fishery Management Council designated SAV as a Habitat Area of Particular Concern for summer flounder EFH. SAV provides important ecological services including fish and shellfish habitat, shore-bird feeding habitats, nutrient and carbon cycling, sediment stabilization, and biodiversity (Thayer *et al.* 1984, Fonseca and Cahalan 1992, Fonseca *et al.* 1998, Kenworthy *et al.* 1998, Orth *et al.* 2006).

In many locations along the east coast of the U.S., eelgrass coverage declined by 50% or more since the 1970's (Thayer *et al.* 1975, Short *et al.* 1993, Short and Burdick 1996). Loss of eelgrass is attributed to reduced water quality and clarity resulting from elevated inputs of nutrients or other pollutants such as suspended solids and disturbances such as excavation (Kemp *et al.* 1983, Short *et al.* 1993, Short and Burdick 1996, Orth *et al.* 2006). The environmental effects of excess nutrients and elevated suspended sediments are the most common and significant causes of SAV decline worldwide (Orth *et al.* 2006). Eelgrass may also be adversely affected through shading and burial or smothering resulting from turbidity and subsequent sedimentation (Deegan and Buchsbaum 2005, Duarte *et al.* 2005, Johnson *et al.* 2008). In Massachusetts, surveys from 1995 to 2007

show statewide declines in seagrass cover in 90% of the embayments where it was studied (Costello and Kenworthy, 2011). In New Hampshire, eelgrass distribution throughout the entire Great Bay Estuary has declined precipitously since 1996, with a loss of 76% in the Great Bay and extirpation of nearly all beds in the Piscataqua River during that time (Short 2013). Large scale SAV declines have also occurred in Chesapeake Bay in Maryland and Virginia, where overall abundance was reduced by 90% during the 1960s and 1970s (Goldsborough 1997). Although a modest recovery of historic SAV distribution was seen in Chesapeake Bay over the past few decades, reduced light penetration in the water column from nutrient enrichment and sedimentation continues to impede substantial restoration. Given the widespread decline in eelgrass beds in the GAR, any additional loss of this habitat will significantly affect the resources that depend on these beds. Successful compensatory mitigation for impacts to SAV can be costly and difficult to implement, making this habitat especially vulnerable to permanent loss.

3.1.2 Salt Marsh and Tidal Wetlands

Tidal wetlands are important for healthy fisheries and coastlines. Salt marshes and tidal creeks provide food, refuge, and nursery habitat for several federally managed species. These systems support many forage fish and invertebrates that serve as prey for commercially and recreationally valuable fish (Steimle *et al.* 2000). Salt marshes also protect shorelines from erosion by buffering wave action and trapping sediments. They reduce flooding by absorbing rainwater and protect water quality by filtering runoff and metabolizing excess nutrients. Given the importance of this habitat, impacts to tidal wetlands will significantly affect a variety of species and habitats.

3.1.3 Intertidal Mudflats

Mudflats serve as EFH for multiple managed fish species during spawning, juvenile, and/or adult life history stages. The U.S. Environmental Protection Agency designated mudflats as an SAS under Section 404(b)(1) of the Clean Water Act, due to their important role in the marine ecosystem for spawning, nursery cover, and forage areas for fish and wildlife. Juvenile fish and invertebrates seek shelter in mudflats by burrowing into the soft sediments. Mudflats support distinct benthic communities that provide important prey and foraging habitat for managed fish species (Cargnelli *et al.* 1999; Chang *et al.* 1999; Pereira *et al.* 1999; Stevenson *et al.* 2014). These habitats are particularly vulnerable to disturbances that may result in turbidity or scouring impacts. Compensatory mitigation for impacts to intertidal mudflat habitat can be difficult to implement, making this habitat especially vulnerable to permanent loss.

3.1.4 Hard Bottom Habitat

Complex structural habitats including gravel, cobble, and boulder substrates (natural rocky habitats⁶) provide important functional value for fish as shelter and refuge from predators (Auster 1998; Auster and Langton 1999; NRC 2002; Stevenson *et al.* 2006).

⁶ These are composed of pebble/gravel, cobble, boulder, or rock ledge/outcrop substrate. Manufactured stone (e.g. cut or engineered rip-rap) is not considered a natural rocky habitat.

The relationship between benthic habitat complexity and demersal fish community diversity is positively correlated (Malek *et al.* 2010). Multiple managed fish species have life-history stages that are dependent on, or mediated by, hard bottom habitats and attributes (Gotceitas *et al.* 1995, Lindholm *et al.* 1999, Collette and Klein-MacPhee 2002, Auster *et al.* 2001, Auster 2005, Methratta and Link 2006). Hard bottom habitats provide a substrate for epibenthic growth serving as additional refuge for juvenile fish and can significantly increase survivorship of juvenile cod (Lindholm *et al.* 1999 and 2001). These benthic substrates are vulnerable to disturbances that reduce complexity, particularly due to their extended recovery times (Bradshaw *et al.* 2000, Collie *et al.* 2005, Tamsett *et al.* 2010).

3.1.5 Areas Containing Shellfish

Shellfish provide an important ecological role through water column filtration, sediment stabilization, and supplying habitat for multiple fish species (Zimmerman *et al.* 1989, Dame and Libes 1993, Coen *et al.* 1999, Nakamura and Kerciku 2000, Forster and Zettler 2004, Newell 2004, Coen and Grizzle 2007, McDermott *et al.* 2008). They are also an important food source for federally managed species (Steimle *et al.* 2000). Shellfish are susceptible to elevated levels of suspended sediments, which can interfere with spawning success, feeding, and growth for species such as mussels, clams, and oysters (Wilber and Clarke 2001). Sessile species and life history stages are highly vulnerable to smothering and activities that may result in dislodgement of recently settled individuals.

3.1.6 Intertidal Habitat

Intertidal habitats support distinct marine communities and provide important foraging habitats and areas of refuge from predation for juvenile fish during periods of high tide (Helfman *et al.* 2009). Intertidal habitats include salt marsh, mud and sandflats, sandy beaches, and rocky shorelines. The functional value of these habitats may be adversely impacted by activities that result in increased erosional rates, changes in slope profiles, habitat conversions, and/or decreased connectivity with shallow water subtidal habitats.

3.1.7 Shallow Water Habitat

Shallow water coastal, marine, and estuarine habitats are important for multiple managed fish species for spawning, juvenile, and/or adult life history stages (Cargnelli *et al.* 1999, Chang *et al.* 1999, Pereira *et al.* 1999, Stevenson *et al.* 2014). Because of their shallow depths, seasonally warm water temperatures, and proximity to nutrients derived from river runoff, these habitats are highly productive (Stevenson *et al.* 2014). Each shallow water habitat type provides EFH for multiple managed fish species. Mud and sand habitats support distinct benthic communities that serve as EFH for managed fish species by directly providing prey and foraging habitat, or through emergent fauna providing increased structural complexity and shelter from predation. Habitat attributes within fine-grained substrates also provide important functions for managed fish species including shelter, foraging, and prey (Wicklund 1966, Ogren *et al.* 1968, Stanley 1971, Shepard *et al.* 1986, Able and Fahay 1998). Sand waves and ridges in shallow areas serve as valuable habitat for refuge and shelter, as well as habitat for spawning and juvenile development for a variety of managed species. Gravel, cobble, and boulder habitats

provide structural complexity for managed fish species that require shelter and seek refuge from predation (Auster 1998, Auster and Langton 1999, NRC 2002, Stevenson *et al.* 2006, Stevenson *et al.* 2014). Due to their proximity to the coast, these shallow water habitats are vulnerable to degradation and loss from human activity.

3.1.8 Prey Species/Diadromous Fish

Diadromous fish provide a food source for many federally managed species (Buckel and Conover 1997, Steimle *et al.* 2000, McDermott *et al.* 2015). Diadromous species, including blueback herring, alewife, rainbow smelt, and American shad have declined in numbers over the last several decades, largely due to fishing pressure and habitat loss (ASMFC 2009). Diadromous fish are significantly impacted by waterway blockages during their upstream or downstream migrations. Physical structures in the waterway can block fish movement, and fish migration can also be blocked by turbidity plumes, thermal plumes, or acoustic events. Suspended sediment can mask pheromones used by migratory fish to reach their spawning grounds, impede fish migration, and can smother immobile benthic organisms and newly-settled juvenile demersal fish (Auld and Schubel 1978; Breitburg 1988; Newcombe and MacDonald 1991; Burton 1993; Nelson and Wheeler 1997). Diadromous fish are considered a component of EFH pursuant to the MSA because they serve as prey for a number of federally-managed species. Actions that reduce the availability of prey species, either through direct harm or capture or through adverse impacts to the prey species' habitat, are considered adverse effects on EFH.

4.0 Transportation Activities

Transportation projects are typically centered around building and maintaining roads, bridges, and culverts as well as occasional docks, piers, and waterway access structures (e.g., boat ramps). Associated activities may include establishing staging areas and installation of fill or platforms to provide temporary access to a project area, cofferdam construction and dewatering, site exploration using scientific devices, brush clearing and grubbing, grading, installing turbidity/sediment and erosion control measures, creating stormwater systems, scour repair, and road widening/stabilization.

This programmatic EFH consultation covers the following four (4) general activity types in the GAR, with certain limitations and/or conditions:

1. Bridge repair, demolition, and replacement
2. Culvert repair and replacement
3. Docks, piers, and waterway access projects
4. Slope stabilization

Information on the stressors produced by such activities and the effects to EFH, managed species, and NOAA trust resources is provided in more detail in the NMFS GARFO/FHWA BMP Manual. This programmatic EFH consultation will streamline reviews of common actions in the above categories that are anticipated to have minimal impacts with the incorporation of the programmatic EFH conservation recommendations provided in Appendix A. In addition, activities that are ineligible for the programmatic EFH consultation are listed in Section 1.2 above, and again in Appendix A. Each activity is described below with a brief description including potential sub-activities and potential stressors. The programmatic EFH conservation recommendations contain descriptors and thresholds for the specific actions under the programmatic EFH consultation.

Table 1. Potential stressors from each project type

Potential Stressor	Project Type			
	Bridges	Culverts	Docks, Piers, and	Slope Stabilization
Underwater Noise	X	X	X	X
Impingement/Entrainment and Entanglement ⁷	X	X	X	X
Water Quality/Turbidity	X	X	X	X
Habitat Alteration	X	X	X	X
Vessel Traffic	X		X	X

⁷ Entrainment is the voluntary or involuntary movement of aquatic organisms from a water body into a surface diversion or through, under, or around screens and results in the loss of the organisms from the population. Impingement is the involuntary contact and entrapment of aquatic organisms on the surface of intake screens caused when the approach velocity exceeds the swimming capability of the organism (WDFW 1998).

4.1 Description of Proposed Activities

4.1.1 Bridge Repair, Demolition, and Replacement

Bridges may cross rivers, streams, or other water bodies as well as other transportation infrastructure. For the purposes of this programmatic EFH consultation, any culvert-like structure is considered a culvert and not a bridge, regardless of the length or size of the structure; this is due to the installation methods and expected stressors. Bridge work may include structural repairs; pile driving and removal; demolition; excavation for and installation of bridge abutments; temporary fills; riprap placement; constructing bridge piers or columns; constructing stormwater structures; approach widening; and paving with asphalt or concrete. Bridge construction may be a component of larger roadway construction or a standalone project. Installation of replacement bridges may require construction of a temporary or detour bridge. The construction of new bridges is not included in this consultation, unless the new bridge is replacing an existing crossing that will be removed as part of the proposed action.

Work under this activity can be deconstructed into the following sub-activities: cofferdams/dewatering, demolition, pile driving/removal, dredging/excavation, fill/stabilization, vessel activities, habitat restoration, scientific measurement devices/survey activities, and staging area establishment. Potential stressors produced by bridge repair, demolition, and replacement include: underwater noise, impingement/entrainment and entanglement, water quality/turbidity, habitat alteration, and vessel traffic.

4.1.2 Culvert Repair and Replacement

Culverts convey rivers, streams, and other water bodies under roadways or other fill. For the purposes of this programmatic EFH consultation, any culvert-like structure is considered a culvert and not a bridge, regardless of the length or size of the structure; this is due to the installation methods and expected stressors. Conventional culverts may be made of concrete, corrugated metal, timber, and PVC piping. Culvert installation may occur independently or as part of a larger transportation improvement project. Work on culverts may involve vegetation and sediment removal, pavement and roadbed removal, culvert extraction, placing new culverts or outflow pipes, backfilling and patching the pavement, installing armoring and headwalls, planting/re-vegetating, and dewatering the work area and establishing a flow bypass prior to initiating work. The construction of new culverts is not included in this consultation, unless the new culvert is replacing an existing crossing that will be removed as part of the proposed action.

Work under this activity can be deconstructed into the following sub-activities: cofferdams/dewatering, demolition, excavation, fill/stabilization, habitat restoration, scientific measurement devices/survey activities, and staging area establishment. Potential stressors produced by culvert repair and replacement include: underwater noise, impingement/entrainment and entanglement, water quality/turbidity, and habitat alteration.

4.1.3 Docks, Piers, and Waterway Access Projects

Docks, piers, and waterway access projects may be associated with boardwalks, bicycle/pedestrian paths or bridges, other docks and piers, boat ramps, overlooks, viewpoints, and/or historical markers. These activities may include at-grade or elevated trails including boardwalks (piles with decking), fill/stabilization, and excavation. Decking may be made of plastic, timber, or steel. Docks, piers, and waterway access projects may be associated with larger transportation projects or be created as an independent action. They can be stand alone structures or incorporated into existing or replaced crossings.

Work under this activity can be deconstructed into the following sub-activities: cofferdams/dewatering, demolition, pile driving/removal, excavation, fill/stabilization, vessel activities, habitat restoration, scientific measurement devices/survey activities, and staging area establishment. Potential stressors produced by docks, piers, and waterway access projects include: underwater noise, impingement/entrainment and entanglement, water quality/turbidity, habitat alteration, and vessel traffic.

4.1.4 Slope Stabilization

Slope stabilization is the protection of embankments at bridges, culverts, and roadways from erosive forces of flowing water. Stabilization techniques include placing or resetting riprap, abutment caps, bulkheads, concrete mattresses, or other structures to protect and restore eroded slopes or to protect slopes that are vulnerable to erosion. Non-structural shoreline stabilization measures that do not use hard components such as the placement of sand fill, coir logs, and/or native shell may also be incorporated. Stabilization structures can be installed from land, temporary structures, or water via shallow-draft barges.

Work under this activity can be deconstructed into the following sub-activities: cofferdams/dewatering, pile driving/removal, excavation, fill/stabilization, vessel activities, habitat restoration, scientific measurement devices/survey activities, and staging area establishment. Potential stressors produced by slope stabilization include: underwater noise, impingement/entrainment and entanglement, water quality/turbidity, habitat alteration, and vessel traffic.

4.2 Description of Sub-Activities

The sub-activities listed for the transportation projects eligible for the programmatic consultation are described as follows:

4.2.1 Cofferdams/Dewatering

Cofferdams are often installed to create isolated work areas that can be dewatered for construction to allow work to be done in-the-dry. Cofferdams are also used to create diversion channels to divert water around an area. Cofferdams may be installed with hammers, by crane and excavator, or placed by hand, depending on size. Cofferdams are typically used temporarily during construction, but are sometimes cut below the mudline and left in place as a permanent structure.

4.2.2 Demolition

Transportation projects may involve mechanical dismantling of structures from an adjacent structure or barge, or via land. Structural components are removed using mechanical demolition methods. Demolition debris is typically removed mechanically and demolished structures are typically barged or trucked offsite for disposal. Explosive demolition is excluded from the programmatic EFH consultation.

4.2.3 Pile Driving/Removal

Piles support piers and abutments, provide temporary support during construction, serve as fenders and dolphins to protect structures, support navigation markers, and may support cofferdams, and bulkheads. They can be made of steel, concrete, wood, or plastic, and may be in the form of single piles or sheets. Piles can be driven into the substrate by impact or vibratory hammers, water jetting, or drilled/augured in by drilled shafts or rock sockets and may be removed by vibratory hammer, direct pull, clamshell bucket grab, cutting/breaking below the mudline, or mechanical demolition.

4.2.4 Dredging/Excavation

Dredging is typically done with hydraulic or mechanical equipment to remove naturally accreting sediment, deepen or widen a waterway, or to return an area to pre-construction conditions. Dredging or excavation may be associated with the installation of sub-structures, placement of erosion and scour control measures or utility lines or cables, or to remove debris. Excavation is often necessary for use of stabilization materials.

4.2.5 Fill/Stabilization

Fill and grading may be required prior to stabilization. Construction of temporary access fills and roads may be required to provide a working platform or access for machinery. Scour repair measures including fill and stabilization structures may be necessary.

4.2.6 Vessel Activities

Construction and maintenance of transportation projects can increase vessel traffic. Equipment access may be from barges, depending on site characteristics. An increase in vessel traffic is usually temporary, ceasing when the construction is complete; however, certain actions can allow vessel access to an area that was previously inaccessible.

4.2.7 Habitat Restoration, Establishment, and Enhancement

Habitat restoration, establishment, or enhancement may be done to restore areas impacted temporarily during the construction of a project, or as compensatory mitigation or to create mitigation banks. This may include excavation, fill, planting, invasive plant removal, channel reconstruction, shell placement, and living shorelines. Habitat restoration may also include demolition of abandoned or obsolete structures and debris removal.

4.2.8 Scientific Measurement Devices/Survey Activities

The use of scientific measurement devices or survey activities may be necessary to collect data at a project site in advance of project design or construction or as a part of required monitoring. Such devices or survey activities may include staff or current gages, water recording and biological observation devices, soil borings, core sampling, historic resource surveys, and side scan sonar.

4.2.9 Staging Area Establishment

Staging areas may need to be established for delivery and storage of construction materials and equipment, contractor office and storage trailers, and parking. Staging areas vary in size and may require vegetation clearing, grubbing, grading, or excavation to level the site, and installation of drainage improvements.

5.0 Programmatic EFH Conservation Recommendations

GARFO HCD evaluated the potential adverse effects to EFH and NOAA trust resources resulting from common transportation projects in the GAR and developed EFH conservation recommendations based on best available information including past consultations and the BMP Manual, to avoid and minimize impacts to EFH pursuant to Section 305(b)(2) of the MSA. Additionally, GARFO HCD analyzed and previously provided EFH conservation recommendations to FHWA/state DOT on substantially similar projects in the past, and is familiar with these types of projects. GARFO HCD evaluated a broad range of these activities in *Impacts to Marine Fisheries Habitat from Nonfishing Activities in the Northeastern United States* (Johnson *et al.* 2008), and *Shallow Water Benthic Habitats in the Gulf of Maine: A Summary of Habitat Use by Common Fish and Shellfish Species in the Gulf of Maine* (Stevenson *et al.* 2014). The full list of programmatic EFH conservation recommendations for transportation projects covered under this programmatic EFH consultation is provided in Appendix A.

According to information from NMFS’ tracking database for the years 2011 through 2016, transportation agencies engaged GARFO HCD in EFH consultation on approximately 110 activities that may fit within the transportation activities description of the programmatic EFH consultation (Table 2). More than half of those activities concerned bridge repair, demolition, or replacement. Due to relatively stable levels of funding for the federal highway transportation programs, GARFO HCD anticipates similar numbers and types of projects in subsequent years. There may be activities in Table 2 for which state DOTs initiated EFH consultation, but did not receive FHWA funding or authorization. GARFO HCD is unable to accurately separate FHWA federalized projects from solely state activities because this information is generally not reported during consultations. FHWA/state DOTs were unable to provide comprehensive information on the past or future numbers and types of projects undergoing EFH consultation in the region.

Table 2. Numbers/types of transportation projects engaging in EFH consultation 2011-2016

Activity Type	# of Transportation Projects in the GAR 2011-2016
Bridge repair, demolition, and replacement	68
Culvert repair and replacement	15
Docks, piers, and waterway access projects	6
Slope stabilization	21
Total Projects	110

GARFO HCD regards the programmatic EFH conservation recommendations as integral components of the proposed action and expects that all transportation activities using this programmatic EFH consultation will be consistent with the recommendations. The programmatic EFH conservation recommendations in Appendix A must be incorporated into the transportation project plans. Projects that do not fit into the project types described herein or projects that do not follow the programmatic EFH conservation recommendations (except for justification from FHWA/state DOT with which GARFO HCD concurs via Verification Form), will not be covered under this programmatic EFH consultation; such actions will require individual EFH consultation. The projects included in this programmatic EFH consultation will not have a substantial adverse effect on EFH, because the projects will be designed or implemented in a manner that avoids and minimizes impacts to EFH and sensitive life stages of managed species and NOAA trust resources.

6.0 Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA)

This programmatic EFH consultation applies only to EFH consultations in the GAR and does not obviate FHWA's responsibilities to consult with NMFS under either the ESA or Marine Mammal Protection Act (MMPA). Section 7(a)(2) of the ESA states that each federal agency shall insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Any discretionary federal action that may affect a listed species should undergo section 7 consultation. If a listed species may be present in a project area, FHWA must determine whether the proposed action is likely to affect any listed species. The MMPA prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas. If the proposed action will result in the take of marine mammals, the appropriate authorization as issued under the MMPA should be obtained. More information regarding the ESA and MMPA is located on the [GARFO PRD section 7 website](#).

7.0 Conclusions

In summary, this programmatic EFH consultation on select FHWA transportation actions in the GAR provides upfront EFH conservation recommendations for certain projects funded or authorized through FHWA authorities. It provides an efficient method for FHWA and GARFO HCD to consult with each other on these routine minor impact transportation projects. The consultation includes EFH conservation recommendations that are categorized by the stressor they are designed to address.

GARFO HCD evaluated potential adverse effects to EFH pursuant to section 305(b)(2) of the MSA for transportation activities including bridge repair, demolition, and replacement; culvert repair and replacement; docks, piers, and waterway access projects; and slope stabilization. GARFO HCD determined that the above activities qualify for consideration under the programmatic EFH consultation and provided the programmatic conservation recommendations to avoid, mitigated or otherwise offset adverse effects to EFH.

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List of Appendices

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Appendix B. Verification Form

Appendix C. FHWA/State DOT Standard Operating Procedures

Appendix D. Recommended Time of Year Restrictions

Appendix E. Information and Resource List

Appendix F. Annual Reporting Spreadsheet

Appendix A. Programmatic EFH Conservation Recommendations

Programmatic EFH conservation recommendations are provided below by stressor for all transportation activities covered under this consultation. The types of activities or impact thresholds that require individual EFH consultation are also provided. The potential stressors produced by a given activity are summarized in the table below. A given transportation activity must incorporate all of the applicable programmatic EFH conservation recommendations into the action to qualify for programmatic EFH consultation, except where justification is provided and GARFO HCD concurs via the Verification Form.

Table 1. Potential stressors from each activity type

Potential Stressor	Project Type			
	Bridges	Culverts	Docks, Piers, and	Slope Stabilization
Underwater Noise	X	X	X	X
Impingement/Entrainment and Entanglement	X	X	X	X
Water Quality/Turbidity	X	X	X	X
Habitat Alteration	X	X	X	X
Vessel Traffic	X		X	X

Underwater Noise

The following EFH conservation recommendations are provided to minimize adverse effects to EFH and NOAA trust resources from underwater noise produced by transportation activities.

1. Use a soft start each day of pile driving, after a break of 30 minutes or more, and if any increase in pile installation or removal intensity is required. Build up power slowly from a low energy start-up over a 20-minute period to warn fish to leave the vicinity. This buildup shall occur in uniform stages to provide a constant increase in output.
2. Noise-generating work conducted in diadromous streams within the spring diadromous fish TOY restriction listed in Appendix D must be isolated behind sealed, dewatered cofferdams, to avoid impeding fish migration.

Impingement/Entrainment and Entanglement

The following EFH conservation recommendations are provided to minimize adverse effects to EFH and NOAA trust resources from impingement/entrainment and entanglement from transportation activities.

3. Turbidity control measures must be properly secured and monitored to ensure aquatic species are not entangled or trapped in the project area.
4. Temporary intakes related to construction must be equipped with mesh size screening and approach velocity appropriate for the species and life stage anticipated. Per the NMFS [Anadromous Salmonid Passage Facility Design](#) manual, screen openings must not exceed 3/32 inch and screen approach velocity must be less than .25 feet per second (ft/sec).
 - In New York, New Jersey, Delaware, Maryland, and Pennsylvania, 2 millimeter (mm) wedge wire screens must be used with a maximum intake velocity of 0.5 feet per second (ft/sec).

- In Virginia, a 1 mm wedge wire with a maximum intake velocity of 0.25 ft/sec).
5. No new permanent surface water withdrawal, water intakes, or water diversions.

Water Quality/Turbidity

The following EFH conservation recommendations are provided to minimize adverse effects to EFH and NOAA trust resources from reduced water quality and/or increased turbidity from transportation activities.

1. Install soil erosion, sediment, and turbidity controls⁸ and maintain them in effective operating condition during construction. Remove controls upon completion of work, after all exposed soil and other fills, as well as any work waterward of ordinary high water or the high tide line, are permanently stabilized.
2. Install and remove any in-water soil erosion, sediment, and turbidity controls outside the TOY restrictions in Appendix D.
3. Work that produces greater than minimal turbidity or sedimentation⁹ in diadromous streams¹⁰ or EFH must not be done during the TOY restriction(s) in Appendix D.
4. Prevent construction debris and sediment from entering aquatic areas and remove all construction debris and excess/deteriorated materials and dispose of in an upland area.
5. Dredged and/or excavated materials, including any fine-grained materials removed from inside culverts, shall either be moved to an upland location and stabilized to prevent re-entry into the waterway or disposed of at a previously approved disposal site.
6. Completely remove and do not reuse existing creosote piles that are affected by project activities and do not install new creosote piles.
7. Coat any chemically or pressure treated piles (CCA, ACQ, etc.) with an impact-resistant, biologically inert substance. Coat the piles at the point of manufacture, not on site.
8. Derelict, degraded, or abandoned piles, except for those inside of existing work footprints for piers, must be completely removed or cut and driven three feet below the surface.
9. Ensure that raw concrete does not contact the water; wet pours of concrete must be confined within sealed forms until the concrete is set or pre-cast members installed.

Habitat Alteration

The following EFH conservation recommendations are provided to minimize adverse effects to EFH and the habitat of NOAA trust resources produced by transportation activities.

10. Remove temporary and/or obsolete structures and fills in their entirety. Use geotextile barriers prior to placement of temporary fill material to ensure complete removal.

⁸ These include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint, installation of sediment control barriers (i.e., silt fence, vegetated filter strips, geotextile silt fences, filter tubes, erosion control mixes, hay bales, or other devices) downhill of all exposed areas, stream fords, retention of existing vegetated buffers, application of temporary mulching during construction, phased construction, and permanent seeding and stabilization. Controls shall be capable of preventing erosion; collecting sediment, suspended and floating materials; and filtering fine sediment.

⁹ For the purposes of this consultation, “greater than minimal turbidity and sedimentation” is generally not considered to occur from the installation of piles (including sheet piles), limited areal extent excavation in predominantly sand and courser material, and dredged material disposal into a properly constructed upland contained dredged material disposal area.

¹⁰ More information on the identifying the locations of diadromous streams is located in Appendix E.

11. Install a riprap bedding layer (such as a gravel filter blanket or geotextile) prior to riprap placement to prevent underlying soils from washing through the riprap during high water.
12. Return areas impacted by temporary activities, fills, or structures to pre-construction or better condition, including elevations and substrate, and replant with native species.
13. Temporary monitoring devices shall be removed and the substrate restored to pre-construction elevations no later than 24 months from initial installation, or upon completion of data acquisition.
14. Pipelines and cables that cross a waterway must not rest on the substrate. They may be attached to an overwater structure or be buried to allow an area to return to preexisting conditions.
15. Any fill, including planting media and placement of any seed shellfish, spatted-shell, or cultch must be free of all non-native or invasive species and/or contaminants. An invasive species control plan must be part of the project if the transportation agency cannot guarantee this.
16. Prevent dislodging of coir logs, mats, or native oyster shell.
17. Incorporate measures to increase the ambient light transmission under overwater structures.
18. The lowermost part of floating docks must be ≥ 18 inches above the substrate at all times, to avoid grounding and propeller scour and to provide adequate circulation and flushing.
19. Conduct and submit pre-dredge benthic biological surveys to determine benthic communities present and conduct post-dredge surveys to ensure targeted depths have been reached and to determine benthic recovery.
20. Grain size of any sediment used as part of habitat restoration must be the same size or larger than the native material at the site.
21. If rock relocation is necessary, move them to an area of equivalent depth and substrate.
22. Incorporate natural habitats (*e.g.*, living shorelines) and soft approaches (*e.g.*, vegetative plantings and large woody debris) into the stabilization design in addition to or instead of hardened structures. See NOAA's [Guidance for Considering the Use of Living Shorelines](#) for more information.

Sensitive Habitats (SAS¹¹, natural rocky habitats,¹² intertidal areas, and areas containing shellfish)

23. Locate all temporary structures, construction, access, and dewatering actives outside of sensitive habitats.¹³
24. Prior to construction, identify and mark in the field any SAV at the project site. An SAV survey is required for activities adjacent to mapped or known SAV if a survey has not been conducted in three years.
25. Provide compensatory mitigation for all permanent and temporary impacts to sensitive habitats. This could include a contribution to an existing in-lieu fee program. When impacts are unavoidable:
 - conduct a biological survey to map the coverage of the sensitive habitats;

¹¹ Special aquatic sites (SAS) are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E. SAS includes fish and wildlife sanctuaries and refuges, wetlands, mudflats, SAV beds, and riffle/pool complexes.

¹² These are composed of pebble/gravel, cobble, boulder, or rock ledge/outcrop substrate. Manufactured stone (*e.g.* cut or engineered rip-rap) is not considered a natural rocky habitat.

¹³ For the purposes of this consultation, sensitive habitats include SAS, natural rocky habitats, intertidal areas, and areas containing shellfish. This is a subset of EFH.

- develop a compensatory mitigation plan for biological resource losses, including success criteria, monitoring plan, and long-term maintenance plan;
 - submit the results of the biological survey and the mitigation plan to GARFO HCD for review; and
 - undertake compensatory mitigation prior to or concurrent with any impacts to sensitive habitat.
26. Where construction requires heavy equipment operation in or across wetlands or mudflats, the equipment shall have low ground pressure (typically ≤ 3 pounds per square inch); be placed on construction timber mats that are adequate to support the equipment; or be operated on dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Construction mats must not be dragged into position.
27. Habitat restoration or mitigation projects must not result in a permanent conversion or loss of sensitive habitats.
28. No dredging shall occur within:
- intertidal areas;
 - 100 feet of SAV; or
 - 25 feet of SAS,¹⁴ natural rocky habitats, or areas containing shellfish.
29. The height of docks and piers must be at least four feet above salt marsh substrate and must be greater than or equal to the width of the deck, to minimize shading impacts. The height must be measured from the marsh substrate to the bottom of the longitudinal support beam.
30. Outlets must not discharge directly into sensitive habitats.

Fish Passage/Migration Habitat

31. Design replacement crossings to provide diadromous and resident fish and aquatic organism passage. Structures must
- provide sufficient water depth and maintain suitable water velocities during migration periods; and
 - maintain or replicate natural stream channel and flow conditions.
32. Incorporate climate change projections into the project design. Use the Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP) 8.5/high greenhouse gas emission scenario and RCP 4.5/intermediate greenhouse gas emission scenario (IPCC 2014) and the global mean and regional sea level rise projections for intermediate-high and extreme scenarios referenced in Sweet *et al.* (2017) in design calculations for replacement structures.
33. Replaced or upgraded crossings must be “in kind” or go up in order of preference set out in NMFS’ [Anadromous Salmonid Passage Facility Design](#):
- Road abandonment and reclamation or road realignment to avoid crossing the stream.
 - Bridge or stream simulation spanning the stream flood plain, providing long-term dynamic channel stability, retention of existing spawning areas, maintenance of benthic invertebrate production, and minimized risk of failure. If a stream

¹⁴ In Virginia, dredging shall not occur in areas within the distance from SAS equal to four times the depth of the dredging.

crossing is proposed in a segment of stream channel that includes a salmonid spawning area, only full-span stream simulation designs are acceptable.

- Embedded pipe culvert, bottomless arch designs or non-floodplain spanning stream simulation.
- Hydraulic design method, associated with more traditional culvert design approaches- limited to low stream gradients (0 to 1%) or for retrofits.
- Culvert designed with an external fishway (including roughened channels) for steeper slopes.
- Baffled culvert or internal weirs- to be used only for when other alternatives are infeasible.

34. For activities that require soil erosion, sediment, and turbidity controls

- in non-tidal streams containing diadromous fish:¹⁵
 - i. They must not encroach >25% of the stream width measured from ordinary high water during the diadromous TOY restriction; and
 - ii. They must maintain safe, timely, and effective downstream fish passage throughout the project.
- in tidal waters:
 - i. They must not encroach >50% of a tidal stream's width as measured from mean high water.

Vessel Traffic

The following EFH conservation recommendations are provided to minimize adverse effects to EFH and NOAA trust resources produced by vessels during transportation activities.

- 35. Project vessels shall be operated in adequate water depths to avoid propeller scour and grounding at all tides. Shallow draft vessels will be used in shallow areas to maximize the navigational clearance between the vessel and the bottom substrate. Spuds may be used to elevate the vessel.
- 36. Project vessels shall not be moored in or use spuds in SAV or be located in such a way that the vessel could shade SAV.

Activities that Require Individual Consultation

The following activities are not eligible for the FHWA programmatic EFH consultation and will require individual consultation with GARFO HCD. This is because the activity and/or the effects of such work are expected to be more than minimal and/or additional information will be required to determine the effects and provide recommendations to avoid and minimize effects to EFH and NOAA trust resources.

- 1. Any work (including anchoring) that results in impacts to:
 - existing or historically mapped submerged aquatic vegetation (SAV) beds or areas within 100 feet of existing or historically mapped SAV beds;
 - $\geq 1,000$ square feet of salt marsh, areas containing shellfish¹⁶, and intertidal areas;

¹⁵ More information on the identifying the locations of diadromous streams is located in Appendix E.

¹⁶ A shellfish survey is required to make this determination unless it is verified that minimal shellfish are present, e.g., per the maps in Appendix E or conversations with local officials.

- ≥ 100 square feet of natural rocky habitat (e.g., bedrock, boulders, cobble, and/or gravel);
2. Stream channelization.
 3. Any temporary structures, construction access, and dewatering activities proposed to be in place for \geq two years.
 4. Slip-lining or invert lining existing culverts.
 5. Any permanent structures longer than 150 linear feet over salt marsh.
 6. Construction of new or expansion of existing boating facilities¹⁷ or ferry terminals.
 7. Independent pedestrian trails or bridges located directly adjacent to an existing crossing.
 8. New or improvement dredging.
 9. Any nearshore disposal or beach nourishment activities.
 10. New fill/stabilization placed below mean low water in excess of 200 linear feet (lf).
 11. Replacement or maintenance of:
 - sloped stabilization structures > 200 lf *and* waterward of the existing toe, or
 - vertical structures > 18 inches waterward of the existing face *and* > 200 lf.
 12. In-water utility lines ≥ 100 lf installed by trench excavation, or ≥ 200 lf installed by jet-plow, fluidization or other direct burial methods.
 13. Thin layer deposition as a part of wetland restoration.
 14. Placement of any seed shellfish, spatted-shell, or cultch in SAS.¹⁸
 15. Any exploratory trenching or other similar survey activities.
 16. Airgun seismic activities.
 17. Any new permanent surface water withdrawal, water intakes, or water diversions.
 18. Any blasting or use of explosives that affects EFH or diadromous species habitats.
 19. Construction of new bridges or culverts, where no crossing existed previously.
 20. Any new or replacement causeways (raised roadways across waters or wetlands).
 21. Any in-water work on dams, tide gates, or breakwaters.

¹⁷ For the purposes of this programmatic EFH consultation, a boating facility is boat docking or mooring space for more than two non-commercial vessels.

¹⁸ Special aquatic sites (SAS) are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E. SAS includes fish and wildlife sanctuaries and refuges, wetlands, mudflats, SAV beds, and riffle/pool complexes.

Appendix B. Verification Form

Federal Highway Administration (FHWA) or the applicable state Department of Transportation (state DOT) will email a signed version of this completed form, together with any project plans, maps, supporting analyses, etc., to NOAA’s National Marine Fisheries Service (NMFS), Greater Atlantic Regional Fisheries Office, Habitat Conservation Division (GARFO HCD) at NMFS.GAR.EFH.Consultation@noaa.gov, upon obtaining sufficient information. FHWA/state DOT must receive a response from GARFO HCD or wait at least 30 calendar days to proceed under the programmatic EFH consultation. FHWA will compile the information from the completed Verification Forms for the purposes of tracking and annual monitoring. FHWA/state DOT must include the completed Verification Form as part of a permit application with any other federal agency, such as U.S. Army Corps of Engineers or U.S. Coast Guard, to confirm that EFH consultation is complete.

Project Activity Type

- 1. Bridge repair, demolition, and replacement
- 2. Culvert repair and replacement
- 3. Docks, piers, and waterway access projects
- 4. Slope stabilization

Transportation Project Information

Project Sponsor:			
Contact Person:		Email/Phone:	
Latitude (e.g., 42.625884):			
Longitude (e.g., -70.646114):			
Project Description and Purpose <i>(include town/city/state and waterway where project is located:</i>			
Anticipated Project Start Date:		Anticipated Project End Date:	
Total area of impact to EFH (in acres): Include locus map with area of impact.			
Area of impacts to sensitive habitats (in square feet):	No impacts to submerged aquatic vegetation (SAV) or oyster reefs allowed.		
Natural rocky habitat (e.g., bedrock, boulders, cobble, and/or gravel):			
Salt marsh:			
Areas containing shellfish (excluding oyster reefs):			
Intertidal mudflats:			
Area of impact to diadromous fish habitat:			

FHWA’s Determination of Effects to Essential Fish Habitat

FHWA/state DOT will select the appropriate determination:

- The activity is in compliance with all programmatic EFH conservation recommendations in the FHWA programmatic EFH consultation and adverse effects to EFH will not be substantial.
- The activity is not in compliance with all of the programmatic EFH conservation recommendations in the FHWA programmatic EFH consultation, however, the justification below demonstrates that the adverse effects to EFH are not substantial. This does not apply to EFH conservation recommendations that are not applicable to the project.

Justification for Not Incorporating All EFH Conservation Recommendations

If the project is not in compliance with all of the applicable programmatic EFH conservation recommendations and FHWA/state DOT has still determined that the effects of a project on EFH are not substantial and the project is otherwise consistent with the FHWA programmatic EFH consultation, provide justification below and identify which conservation recommendations are not included:

FHWA/state DOT preparer:

Name

Signature

Date

By providing your determination and signature, you are certifying that to the best of your knowledge the information provided in this form is accurate and based upon the best available scientific information. This form must be filled out and signed by FHWA or state DOT staff, as an officially designated non-federal representative.

Potential Stressors Caused by the Activity (Check all that apply based on activity type)

- Underwater Noise
- Impingement/Entrainment and Entanglement
- Water Quality/Turbidity
- Habitat Alteration
- Vessel Traffic

GARFO HCD Determination (To be filled out by NMFS)

After receiving the Verification Form, GARFO HCD will contact FHWA/state DOT with any concerns.

- GARFO HCD concurs with FHWA’s determination that the proposed project is consistent with the programmatic EFH consultation (without the need for justification).
- GARFO HCD concurs with FHWA’s determination that the proposed project is consistent with the programmatic EFH consultation, with justification described above.
- GARFO HCD does not concur with FHWA’s determination that the project is consistent with the programmatic EFH consultation. FHWA/state DOT must conduct additional coordination with GARFO HCD and a separate individual EFH consultation may be required.

GARFO HCD reviewer:

Name

Signature

Date

Appendix C. FHWA/State DOT Standard Operating Procedures

Federal Highway Administration (FHWA) and State Departments of Transportation (DOT) Standard Operating Procedures

for

NOAA's National Marine Fisheries Service (NMFS), Greater Atlantic Regional Fisheries Office, Programmatic Essential Fish Habitat (EFH) Consultations

I. Initial Screening Process

- a. FHWA/state DOT will screen the project for the presence of Essential Fish Habitat (EFH) and federally managed species using the [EFH tables](#) and the [EFH mapper](#). FHWA/state DOT will also determine whether diadromous fish or other NOAA trust resources are present using the information and resources in Appendix E.
- b. If EFH may be present within the project action area, then FHWA/state DOT will review the programmatic EFH consultation to determine whether the project conforms to the activity description and the specified criteria and limitations. For any EFH consultation on Federal-Aid Highway Program projects, FHWA shall be the lead federal agency for the purposes of the consultation.

II. Impact Determination and Consultation Type

Once there is sufficient information on the project design relation to effects to EFH (See the Consultation Process Guide), FHWA/state DOT will make an EFH determination on the project effects using the following standards.

- a. If the action does not adversely affect EFH (including non-EFH trust resources) temporally or spatially, FHWA/state DOT will determine that an action will not adversely affect EFH, and no EFH consultation is required. State DOTs are not required to consult with GARFO HCD if there is no federal nexus for the action. It is not necessary to notify GARFO HCD or seek NMFS' concurrence with the determination if there is no adverse effect to EFH or NOAA trust resources.
- b. If the action adversely affects EFH (including non-EFH-trust resources), then FHWA/state DOT will initiate programmatic or individual EFH consultation with GARFO HCD. An adverse effect may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystems components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from an action occurring within or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.
 - i. For projects that fit within the activity description and incorporate all applicable EFH conservation recommendations in the programmatic EFH consultation or for projects with justification from FHWA/state DOT with

which GARFO HCD concurs via Verification Form), FHWA/state DOT will submit the Verification Form to GARFO/HCD. GARFO HCD will respond within 30 calendar days after receiving the Verification Form and identify whether they concur with FHWA/state DOT's effect determination and the project conforms to the terms of the programmatic EFH consultation. If FHWA/state DOT does not receive a response from GARFO HCD after 30 calendar days of sending the Verification Form, then they may assume GARFO HCD's concurrence.

- ii. For projects that do not fit within the activity description and/or do not incorporate all applicable EFH conservation recommendations in the EFH programmatic consultation (except in cases where FHWA/state DOT provide additional justification), FHWA/state DOT will initiate individual EFH consultation with GARFO HCD and the activity cannot use the programmatic consultation. If GARFO does not concur with FHWA/state DOT's justification for activities that do not meet all applicable conservation recommendations, FHWA/state DOT must coordinate with GARFO HCD and an individual consultation may be required. The individual EFH consultation process is detailed below. FHWA/state DOT will initiate and complete individual EFH consultation by:
 1. Notifying the GARFO HCD of the action by email (send consultation request to NMFS.GAR.EFH.consultation@noaa.gov;
 2. Submitting an [EFH assessment](#) for the action to GARFO HCD;
 3. Receiving a response from GARFO HCD, including any EFH conservation recommendations or recommendations under the Fish and Wildlife Coordination Act; and
 4. Responding to GARFO HCD's recommendations within 30 calendar days on how FHWA/state DOT will proceed.

III. Activities using programmatic EFH consultation process

- a. FHWA/state DOT will send the Verification Form to GARFO HCD at NMFS.GAR.EFH.consultation@noaa.gov, for each activity under the programmatic EFH consultation, with complete project information.
 - i. FHWA/state DOT will ensure that any activity using the programmatic EFH consultation incorporates all applicable EFH conservation recommendations and completely fill out and submit the Verification Form to GARFO HCD at NMFS.GAR.EFH.consultation@noaa.gov.
 - ii. For projects that do not incorporate all applicable programmatic EFH conservation recommendations but FHWA/state DOT has provided justification with which GARFO HCD concurs via Verification Form that the effects of the project on EFH are not substantial and an individual EFH consultation is not required, the unincorporated EFH conservation recommendations must be documented in the Verification Form with justification and any additional measures that will be used to avoid, minimize, and/or mitigate adverse effects to EFH.

- b. GARFO HCD will complete the Verification Form or notify FHWA/state DOT within 30 calendar days after receipt of the Verification Form if they have any concerns, including whether the proposed project is eligible under the programmatic EFH consultation, or to request additional information to verify the project conforms to the programmatic EFH consultation. If FHWA/state DOT does not receive a response from GARFO HCD after 30 calendar days of sending the Verification Form, then they may assume GARFO HCD's concurrence.
- c. For all transportation actions undergoing programmatic EFH consultation, FHWA/state DOT will compile the completed Verification Form with the response from GARFO HCD for tracking and reporting purposes.
- d. FHWA/state DOT will submit the completed Verification Form, with the response from GARFO HCD with the application for any permits from federal agencies, such as Army Corps of Engineers or U.S. Coast Guard, to confirm EFH consultation is complete.
- e. If project plans change after a Verification Form is submitted to GARFO HCD, FHWA/state DOT will determine if reinitiation of EFH consultation is necessary and whether a new Verification Form must be submitted or separate individual consultation must be initiated.

IV. Activities Requiring Individual Consultation

- a. FHWA/state DOT will initiate individual EFH consultation with GARFO HCD for:
 - i. Any activity listed in Appendix A, under "activities that require individual consultation."
 - ii. Any activity that does not conform to the programmatic activity description or incorporate all applicable programmatic EFH conservation recommendations, without justification. The thresholds for requiring individual EFH consultation are based upon single and complete projects and all direct, secondary, and indirect impacts.
 - iii. Any activity for which GARFO HCD does not concur with FHWA/state DOT's determination in the Verification Form and/or identifies as needing individual consultation.
- b. Individual consultation can be either abbreviated or expanded. Abbreviated consultation procedures are used when the adverse effect(s) of an action could be alleviated through minor project modifications. FHWA/state DOT will initiate an abbreviated consultation with a phone call or email to GARFO HCD to discuss the project. GARFO HCD will notify FHWA/state DOT that:
 - i. The action would not adversely affect EFH likely due to project changes and no conservation recommendations are needed;
 - ii. Conservation Recommendations can be provided based upon existing information; or
 - iii. An EFH Assessment is needed.
 - iv. An expanded consultation is needed due to the action resulting in substantial adverse effects on EFH. GARFO HCD will request via email or letter (at Supervisor level) to FHWA/state DOT that they initiate expanded consultation.

- c. FHWA/state DOT will email an EFH consultation initiation request with all of the necessary information to GARFO HCD at NMFS.GAR.EFH.consultation@noaa.gov and confirm that GARFO HCD received the project materials.
 - i. The information required for both abbreviated and expanded individual EFH consultation includes:
 1. project description;
 2. project plans showing existing and proposed conditions as well as all waters of the U.S. on the project site, mean low water and mean high water clearly marked, and sensitive habitats mapped, including special aquatic sites (SAS),¹⁹ natural rocky habitat, intertidal areas, and/or areas containing shellfish;
 3. current SAV survey results conducted in accordance with the [Joint Federal Agency Submerged Aquatic Vegetation Survey Guidance](#), or other approved method, where appropriate;
 4. current shellfish survey results conducted within the project area²⁰ where appropriate;
 5. an [EFH assessment](#) which includes an analysis of potential adverse effects on EFH²¹ and managed species as well as measures to avoid, minimize or mitigate the impacts;
 6. site photographs, if available; and
 7. a compensatory mitigation plan, if applicable.
- d. Upon receiving a complete EFH assessment, GARFO HCD will respond to FHWA/state DOT within 30 calendar days for an abbreviated consultation and within 60 calendar days for an expanded consultation by providing one of the following:
 - i. EFH conservation recommendations for the activity;
 - ii. concurrence that impacts are not more than minimal and conservation recommendations are not necessary for the activity; or
 - iii. a request for additional information to better understand the project and/or determine the effects to be able to complete consultation.

¹⁹ SAS includes SAV, saltmarsh, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges.

²⁰ Coordinate with GARFO HCD prior to conducting the shellfish survey and use the appropriate method according to the state agency. Appendix E contains more information on available state shellfish information.

²¹ The EFH worksheet can be used for an abbreviated EFH assessment.

Appendix D. Recommended Time of Year Restrictions

Time of year (TOY) restrictions are provided for each state in the GAR so that in-water work (i.e., turbidity producing activities) is avoided during sensitive life stages of managed species. These standard restrictions consider the breeding, nursery, and migration stages of managed species which are especially vulnerable to in-water silt-producing activities, noise impacts, or activities which may encroach greater than 25% into a waterway interfering with migration.

State	TOY Restrictions
Maine	Winter Flounder: March 15 to June 30 Diadromous Fish: April 1 to June 30 and September 1 to November 30* Shellfish: June 1 to October 31
New Hampshire	Winter Flounder: March 16 to November 14 Diadromous Fish: March 16 to November 14 and September 1 to November 30*
Massachusetts ¹	Winter Flounder: January 15 to June 30 Diadromous Fish: March 1 to June 30 and September 1 to November 30* Shellfish: June 1 to October 31
Rhode Island	Winter Flounder: February 1 to June 30 Diadromous Fish: March 15 to June 30 and September 1 to November 30* Shellfish: May 1 to October 14
Connecticut ²	Winter Flounder: February 1 to May 31 Diadromous Fish: April 1 to June 30 and September 1 to November 30* Shellfish: May 1 to September 30
New York ³	Winter Flounder: January 15 to May 31 Diadromous Fish: March 1 to June 30 and September 1 to November 30* Overwintering Blue Crab and Striped Bass: November 15 to April 15
New Jersey ^{3,4}	Winter Flounder: January 1 to May 31 Diadromous Fish: March 1 to June 30 and September 1 to November 30* SAV: April 15 to September 30 Overwintering Blue Crab and Striped Bass: November 15 to April 15
Pennsylvania ⁵	Diadromous Fish: March 15 to June 30 and September 1 to November 30*
Delaware	Diadromous Fish: March 15 to June 30 and September 1 to November 30* Sandbar Shark: April 15 to September 15 Horseshoe Crab: April 15 to September 15

Maryland	Diadromous Fish: February 15 to June 15 and September 1 to November 30* SAV: April 15 to October 15
Virginia	Diadromous Fish: February 15 to June 30 and September 1 to November 30* SAV: April 15 to October 15

*All diadromous areas: Use the fall TOY restriction in cases where an action will substantially block the waterway in the fall.

¹ The Massachusetts Division of Marine Fisheries (MA DMF) developed site-specific TOY restrictions by waterbody. Refer to the [MA DMF TOY document](#) for applicable locations.

² For work occurring in the Connecticut River, the TOY restriction north of Old Saybrook, is from April 1 through June 30 and from February 1 to May 31 for areas south of Old Saybrook. For dredging in Mumford Cove and connecting parts of Venetian Harbor, the water temperatures must be $\leq 42^{\circ}\text{F}$ for 3 consecutive days.

³ Diadromous runs may begin March 15 in upstream areas in the Delaware River.

⁴ There is no winter flounder EFH designated south of the Absecon Inlet, New Jersey.

⁵ Diadromous runs may begin closer to March 15 in upstream areas in the Delaware River.

Appendix E. Information and Resource List

The links provided below are available to transportation agencies to use to obtain general resource information at a project site. If any of the maps or data contained in the links below indicate that sensitive habitat may be present at a project site, further site-specific investigations will provide more information.

Useful Links

[National Wetland Inventory Maps](#)

[EPA's National Estuaries Program](#)

[Northeast Regional Ocean Council \(NROC\) Data Portal](#)

[Mid-Atlantic Regional Council on the Ocean \(MARCO\) Data Portal](#)

Resources by State

Maine

[Maine Office of GIS Data Catalog](#)

[Town shellfish information including shellfish conservation area maps](#)

[State of Maine Shellfish Sanitation and Management](#)

[Eelgrass maps](#)

[Casco Bay Estuary Partnership](#)

[Maine GIS Stream Habitat Viewer](#)

New Hampshire

[NH's Statewide GIS Clearinghouse, NH GRANIT](#)

[NH Coastal Viewer](#)

[State of NH Shellfish Program](#)

Massachusetts

[MassGIS Data](#)

[MA Shellfish Sanitation and Management Program](#)

[Eelgrass Maps](#)

[MassGIS Data](#)

[MA DMF Recommended TOY 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

[RI Shellfish and Aquaculture](#)

[RI Shellfish Management Plan](#)

[Eelgrass Maps](#)

[RI GIS Data](#)

[Narraganset Bay Estuary Program](#)

[Rhode Island Division of Marine Fisheries](#)

[Rhode Island Coastal Resources Management Council](#)

Connecticut

[CT Bureau of Aquaculture](#)

[CT GIS Resources](#)

[Natural Shellfish Beds in CT](#)

[Eelgrass Maps](#)

[Long Island Sound Study](#)

[CT GIS Resources](#)

[CT DEEP Office of Long Island Sound Programs and Fisheries](#)

[CT River Watershed Council](#)

New York

[Eelgrass Report](#)

[Peconic Estuary Program](#)

[NY/NJ Harbor Estuary](#)

[New York GIS Clearinghouse](#)

New Jersey

[Submerged Aquatic Vegetation Mapping](#)

[Barnegat Bay Partnership](#)

[NJ GeoWeb](#)

[NJ DEP Shellfish Maps](#)

Pennsylvania

[Delaware River Management Plan](#)

[PA DEP Coastal Resources Management Program](#)

[PA DEP GIS Mapping Tools](#)

Delaware

[Partnership for the Delaware Estuary](#)

[Center for Delaware Inland Bays](#)

[Delaware FirstMap](#)

Maryland

[Submerged Aquatic Vegetation Mapping](#)

[MERLIN](#)

[Maryland Coastal Bays Program](#)

Virginia

[Submerged Aquatic Vegetation mapping](#)

[Data VA](#)

[VDGIF Time of Year Restrictions \(TOYR\) and Other Guidance](#)

Appendix F. Annual Reporting Spreadsheet

The spreadsheet is provided as a separate downloadable file.