

FHWA Transportation Projects, Design Criteria, and Procedures for Authorization under a Programmatic Determination of Not Likely to Adversely Affect Select ESA-Listed Species in the Greater Atlantic Region (FHWA NLAA Program Criteria)

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April 2018

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1.0 FHWA GARFO 2018 NLAA Program Background

The Federal Highway Administration (FHWA) and NOAA’s National Marine Fisheries Service’s (NMFS) Greater Atlantic Regional Fisheries Office,¹ Protected Resources Division (GARFO PRD) identified projects and jointly developed the following project design criteria (PDC) and procedures to reduce adverse impacts to select Endangered Species Act (ESA)-listed species and designated critical habitat for routine, non-controversial² transportation projects to insignificant or discountable levels while also creating more efficient streamlined consultation procedures. These procedures and PDC form the basis for FHWA’s request to GARFO PRD for concurrence with FHWA’s “not likely to adversely affect” programmatic determination for GARFO ESA-listed species and are described in this document, the FHWA NLAA Program Criteria, or “Criteria.” The Criteria together with the programmatic ESA section 7 consultation, are jointly referred to as the FHWA GARFO 2018 NLAA Program, or “Program.”

FHWA and GARFO PRD developed the Program for common transportation projects that are funded, authorized, or carried out by FHWA. FHWA designated the state Departments of Transportation (state DOTs) as the non-federal representative³ for preparing biological assessments and conducting informal section 7 consultation under the ESA.

¹ The coastal jurisdiction of the Greater Atlantic Region includes Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and the District of Columbia.

² This describes activities that are non-controversial from an ESA perspective. Projects that are contentious for non-ESA reasons may still be eligible for the Program, provided all appropriate thresholds and conditions are adequately met.

³ Pursuant to 50 CFR 402.08, a federal agency may designate a non-federal representative to conduct informal consultation by giving written notice.

2.0 Procedural Overview and Consultation Process

Once a transportation activity is proposed, FHWA/state DOT must estimate the action area, obtain a species list, and determine whether any ESA-listed species and/or critical habitat may be present in the action area and be exposed to stressors from the action. FHWA/state DOT must have sufficient information on the project design relating to effects on ESA-listed species and/or critical habitat to determine if the activity may be eligible for the Program. The types and amount of information needed to initiate informal ESA section 7 consultation are described in the FHWA/NMFS Consultation Process Guide for Transportation Actions in the Greater Atlantic Region. The review and consultation procedures are described in the FHWA/State DOT Standard Operating Procedures (SOPs) for the Program.

2.1 Individual Project Verification

After GARFO PRD submits the programmatic informal ESA section 7 consultation letter in response to this Criteria and the Program is in place, FHWA/state DOT will not need to initiate individual informal consultation for proposed transportation projects that are eligible for the Program. However, for each project considered in the Program, FHWA/state DOT must provide GARFO PRD all the required information set forth in the Verification Form (Appendix A). GARFO PRD will review the form, as noted below. The Verification Form will serve as a record to certify that the proposed activity is NLAA ESA-listed species under GARFO PRD jurisdiction and to track and analyze activities under the Program.

2.2 Verification Requirements

The programmatic consultation procedures and process for using the Verification Form are described in the SOPs for the Program. FHWA/state DOT will send a completed Verification Form to GARFO PRD for each proposed project using the Program. FHWA/state DOT will submit the Verification Form electronically to: NMFS.GAR.ESA.Section7@noaa.gov.

GARFO PRD will review the completed Verification Form to ensure the project is eligible for the Program and may request additional information to verify eligibility. GARFO PRD will contact FHWA/state DOT with any ESA-listed species or critical habitat concerns. FHWA/state DOT must receive a completed Verification Form back from GARFO PRD with concurrence that the proposed project is consistent with the Program for the proposed action to proceed.

If FHWA/state DOT or GARFO PRD determines that a project is not consistent with the Program, or if there are species or critical habitat under NMFS' jurisdiction that are present within the action area that are not covered in the Program, FHWA/state DOT must make a separate effects determination and initiate a separate individual consultation with GARFO PRD, per 50 CFR 402. In addition, GARFO PRD may require any proposed transportation activity to initiate an individual consultation at their discretion; this would be an uncommon occurrence, but could be due to potential controversy, uncertainty of effects, etc. The action must not be associated in any way with known existing litigation against NMFS, FHWA, or the applicant.

2.3 Technical Assistance

FHWA/state DOT may request technical assistance including species information from GARFO PRD prior to submitting a Verification Form. FHWA/state DOT shall contact GARFO PRD as early as possible to avoid project delay. GARFO PRD will provide FHWA/state DOT with the most recent *Federal Register* notices and other relevant documents pertaining to ESA-listed species' location, distribution, timing, habitat requirements, and current information regarding critical habitat delineation and essential features. In addition to during the technical assistance phase, this will be done via posting of information on the [GARFO PRD section 7 website](#) as the information becomes available, at annual or regular meetings, and/or through general stakeholder notifications.

2.4 Annual Meeting

FHWA will meet with GARFO PRD either in-person or via conference call on an annual basis, or less often as needed, to evaluate and discuss the continued effectiveness of the Program. Joint evaluations will consider whether the procedures and PDC are adequately preventing adverse effects to ESA-listed species and critical habitat, whether the scope of projects or category types should be modified, and whether administrative procedures should be updated to improve efficiency of processing. The Annual Meeting will occur on or before May 1 of each year, or as necessary. FHWA may invite Divisions and state DOTs to participate in the Annual Meeting.

2.5 Annual Report

Each year no later than April 1 (or at least 30 calendar days prior to the Annual Meeting), FHWA will provide an annual report of all activities funded, authorized, and/or carried out by FHWA that used the Program. This enables tracking of transportation activities and adaptive management techniques. The Report will include a spreadsheet with information based on the model provided in Appendix B. FHWA will email the annual report to: NMFS.GAR.ESA.Section7@noaa.gov.

2.6 Effective Period

The Program is effective immediately after GARFO PRD submits the programmatic ESA section 7 consultation letter to FHWA. FHWA and/or GARFO PRD may end the Program at any time if either federal agency determines that the Program is not being implemented as intended or if new information requires reinitiation of consultation. For example, GARFO PRD may revoke their programmatic concurrence if FHWA fails to provide annual reports. GARFO PRD may also revoke any programmatic concurrence provided for individual projects at any time by notifying FHWA/state DOT as soon as information becomes available. This could be necessary in light of new information that raises concerns or uncertainty of effects. The need for revisions or reinitiation of the Program will be discussed during the Annual Meeting.

2.7 Training

As requested by FHWA, GARFO PRD will provide training to FHWA/state DOT staff on effects determinations and the application of these procedures and implementation of the

Program. Training will be made available to staff through workshops, web-based trainings, or other appropriate forums. FHWA may train GARFO PRD on project process, design, and construction.

3.0 Description of Action Area and Proposed Action

Under the Program, the proposed action is the implementation of transportation projects funded, authorized, or carried out by FHWA. 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. The action includes FHWA's use of these programs to fund, authorize, or carry out transportation improvements in the GAR. A subset of the projects funded, authorized, or carried out by FHWA is eligible for the Program.

3.1 Action Area

The action area includes "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action" (50 CFR § 402.02). In this case, the action area is defined as waters of the United States, specifically wetlands and navigable waters, within the states of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and the District of Columbia. The action area may include other areas within the proposed transportation project footprint (i.e., adjacent uplands), where pathways exist for exposure of NMFS ESA-listed species to stressors from project activities.

Activities associated with offsite use areas of projects eligible for the Program, such as vessel traffic, establishing staging areas, access roads, and contractor-selected borrow material and waste disposal sites, are recognized as interrelated and/or interdependent activities for the purposes of section 7 consultation under the ESA. These types of project-related activities may or may not occur within the project limits of construction and are often carried out by contractors to FHWA/state DOT, but must be considered when determining whether a project is eligible for the Program.

The ESA-listed species and critical habitat designated for those species, as described below, may occur within the action area. A general reference of species distribution throughout the GAR, maps, and species presence tables are located on the [GARFO PRD website](#). The [maps](#) contain areas identified as sturgeon spawning, rearing, and overwintering habitat.

The main geographic areas within the action area where ESA-listed species and critical habitat under NMFS' jurisdiction can be found are separated out by 1) Gulf of Maine; 2) Southern New England/New York Bight; and 3) Chesapeake Bay (Tables 2 and 3).

3.1.1 Gulf of Maine

This area broadly includes waters from the Maine/Canada border south to the tip of Cape Cod, Massachusetts.

3.1.2 Southern New England/New York Bight

This area broadly includes waters south of the tip of Cape Cod, Massachusetts to Cape Henlopen, Delaware and includes Long Island Sound and Delaware Bay.

3.1.3 Chesapeake Bay

This area includes the waters within and surrounding Chesapeake Bay in Delaware, Maryland, and Virginia, from Cape Henlopen, Delaware south to the Virginia/North Carolina border.

3.2 Description of Proposed Projects

The Program covers four (4) general project types within the action area described above:

1. Bridge Repair, Demolition, and Replacement;
2. Culvert Repair and Replacement;
3. Docks, Piers, and Waterway Access Projects; and
4. Slope Stabilization.

Each project type is described below with a brief description including possible sub-activities and potential stressors. The stressors produced by common transportation actions and effects to ESA-listed species and critical habitat are thoroughly described in the NMFS/FHWA Best Management Practices Manual. GARFO PRD’s programmatic consultation will analyze the stressors associated with the project type and sub-activities, as defined and constrained by the PDC, in response to FHWA’s determination that effects considered in the Program are insignificant and discountable.

Table 1. Potential stressors from each project type

Potential Stressor	Project Type			
	Bridges	Culverts	Docks, Piers, and Waterway Access	Slope Stabilization
Underwater Noise	X	X	X	X
Impingement/Entrainment and Entanglement ⁴	X	X	X	X
Water Quality/Turbidity	X	X	X	X
Habitat Alteration	X	X	X	X
Vessel Traffic	X		X	X

3.2.1 Bridge Repair, Demolition, and Replacement

Bridges may cross rivers, streams, or other water bodies as well as other transportation infrastructure. For the purposes of the Program, any culvert-like structure is considered a culvert and not a bridge, regardless of the length or size of the structure. 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

⁴ 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).

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 project type can be deconstructed into nine sub-activities that encompass the range of possible activities that may introduce stressors for ESA-listed species and/or critical habitat. These sub-activities may include: 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 this project type include: underwater noise, impingement/entrainment and entanglement, water quality/turbidity, habitat alteration, and vessel traffic.

3.2.2 Culvert Repair and Replacement

Culverts convey rivers, streams, and other water bodies under roadways or other fill. For the purposes of the Program, 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 project type can be deconstructed into seven sub-activities that encompass the range of possible activities that may introduce stressors for ESA-listed species and/or critical habitat. These sub-activities may include: cofferdams/dewatering, demolition, excavation, fill/stabilization, habitat restoration, scientific measurement devices/survey activities, and staging area establishment. Potential stressors produced by this project type include: underwater noise, impingement/entrainment and entanglement, water quality/turbidity, and habitat alteration.

3.2.3 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 standalone structures or incorporated into existing or replaced crossings.

Work under this project type can be deconstructed into nine sub-activities that encompass the range of possible activities that may introduce stressors for ESA-listed species and/or critical habitat. These sub-activities may include: 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 this project type include: underwater noise, impingement/entrainment and entanglement, water quality/turbidity, habitat alteration, and vessel traffic.

3.2.4 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 project type can be deconstructed into eight sub-activities that encompass the range of possible activities that may introduce stressors for ESA-listed species and/or critical habitat. These sub-activities may include 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 this project type include: underwater noise, impingement/entrainment and entanglement, water quality/turbidity, habitat alteration, and vessel traffic.

3.3 Description of Sub-Activities

The possible sub-activities of transportation projects are described as follows:

3.3.1 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.

3.3.2 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 Program.

3.3.3 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.

3.3.4 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 to key in stabilization materials.

3.3.5 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.

3.3.6 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.

3.3.7 Habitat Restoration

Habitat restoration, establishment, or enhancement may be done to restore areas impacted temporarily during the construction of a project, 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.

3.3.8 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.

3.3.9 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.

4.0 ESA-Listed Species and Critical Habitat in the Program

The ESA-listed species and critical habitat that may be found within the action area of the GAR are provided in the tables below.

Table 2. ESA-listed species found in the action area (E = endangered, T = threatened)

Species	ESA Status	Expected Life Stages	Expected Behaviors	Expected Time of Year	Listing Rule	Newest Recovery Plan Date	Geographic Area(s)
North Atlantic Right Whale	E	Adults; juveniles	Foraging; wintering; migrating	Year round	73 FR 12024	NMFS 2005	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay
Fin Whale	E	Adults; juveniles	Foraging; wintering; migrating; calving	Year round	35 FR 18319	NMFS 2010	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay
Kemp's Ridley Sea Turtle	E	Juveniles	Foraging; migrating	May to November	35 FR 18319	NMFS <i>et al.</i> 2011	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay
Leatherback Sea Turtle	E	Adults; juveniles	Foraging; migrating	May to November	35 FR 849	NMFS & U.S. FWS 1992	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay
Loggerhead Sea Turtle; Northwest Atlantic DPS	T	Adults; subadults; pelagic/benthic juveniles	Foraging; migrating	May to November	76 FR 58868	NMFS & U.S. FWS 2008	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay
Green Sea Turtle; North Atlantic DPS	T	Adults; juveniles	Foraging; migrating	May to November	81 FR 20057	NMFS & U.S. FWS 1991	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay
Atlantic sturgeon (all 5 DPSs)	E (GOM) T (4 others)	All life stages (eggs to adults)	Spawning & rearing (specific rivers); foraging; overwintering; migrating	Year round	77 FR 5880 and 77 FR 5914	N/A	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay
Shortnose sturgeon	E	All life stages (eggs to adults)	Spawning & rearing (specific rivers); foraging; overwintering; migrating	Year round	32 FR 4001	NMFS 1998	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay
Atlantic salmon; Gulf of Maine DPS ⁵	E	All life stages (eggs to adults)	Foraging, migrating, spawning, rearing, overwintering	April to Nov (ocean/ estuaries); year round (fresh-water)	74 FR 29344	NMFS & U.S. FWS 2016	Gulf of Maine

⁵ According to the NMFS/U.S. FWS Statement of Cooperation (March 2009), U.S. FWS has the lead on all section 7 consultations on activities in freshwater, except dams, and NMFS has the lead on all section 7 consultations on activities within estuaries and marine waters. Therefore, Atlantic salmon in the freshwater portion of its range is not included in the Program.

Table 3. Designated critical habitat for ESA-listed species found in the action area

Critical Habitat	Federal Register Citation	Location	Geographic Area(s)
North Atlantic Right Whale	81 FR 4837	Gulf of Maine and Georges Bank	Gulf of Maine
Atlantic Salmon – Gulf of Maine DPS	74 FR 29300	45 areas of rivers, streams, and estuaries in the Gulf of Maine that occur or originate within the State of Maine that discharge to the Gulf of Maine	Gulf of Maine
Atlantic Sturgeon 1. Gulf of Maine DPS 2. New York Bight DPS 3. Chesapeake Bay DPS	82 FR 39160	1. Penobscot, Kennebec, Androscoggin, Piscataqua, and Merrimack rivers 2. Connecticut, Housatonic, Hudson, and Delaware rivers 3. Nanticoke, Potomac, Rappahannock, York, Pamunkey, Mattaponi, and James rivers and Marshyhope Creek	Gulf of Maine, Southern New England/New York Bight, Chesapeake Bay

Critical habitat is designated via rulemaking and is defined as the specific areas 1) within the geographical area occupied by the species at the time of listing, on which are found those physical or biological features (PBFs) essential to conservation, and which may require special management considerations or protection; and 2) outside the geographical area occupied by the species at the time of listing if the agency determines that the area itself is essential for conservation. PBFs for North Atlantic right whale, Atlantic salmon, and Atlantic sturgeon critical habitat are provided in the tables below.

Table 4. PBFs for North Atlantic right whale critical habitat in the Northeastern U.S.

1.	The physical oceanographic conditions and structures of the Gulf of Maine and Georges Bank region that combine to distribute and aggregate <i>Calanus finmarchicus</i> for right whale foraging, namely prevailing currents and circulation patterns, bathymetric features (basins, banks, and channels), oceanic fronts, density gradients, and temperature regimes.
2.	Low flow velocities in Jordan, Wilkinson, and Georges Basins that allow diapausing <i>C. finmarchicus</i> to aggregate passively below the convective layer so that the copepods are retained in the basins.
3.	Late stage <i>C. finmarchicus</i> in dense aggregations in the Gulf of Maine and Georges Bank region.
4.	Diapausing <i>C. finmarchicus</i> in aggregations in the Gulf of Maine and Georges Bank region.

Table 5. PBFs for Atlantic salmon (GOM DPS) critical habitat

Atlantic Salmon Spawning and Rearing Primary Constituent Elements	
1.	Deep, oxygenated pools and cover (e.g., boulders, woody debris, vegetation, etc.) near freshwater spawning sites, necessary to support adult migrants during the summer while they await spawning in the fall.
2.	Freshwater spawning sites that contain clean, permeable gravel and cobble substrate with oxygenated water and cool water temperatures to support spawning activity, egg incubation, and larval development.
3.	Freshwater spawning and rearing sites with clean, permeable gravel and cobble substrate with oxygenated water temperatures to support emergence, territorial development, and feeding activities of Atlantic salmon fry.
4.	Freshwater rearing sites with space to accommodate growth and survival of Atlantic salmon parr.

5.	Freshwater rearing sites with a combination of river, stream, and lake habitats that accommodate parr's ability to occupy many niches and to maximize parr production.
6.	Freshwater rearing sites with cool, oxygenated water to support growth and survival of Atlantic salmon parr.
7.	Freshwater rearing sites with diverse food resources to support growth and survival of Atlantic salmon parr.
Atlantic Salmon Migration Primary Constituent Elements	
8.	Freshwater and estuary migratory sites free from physical and biological barriers that delay or prevent access of adult salmon seeking spawning grounds needed to support recovered populations.
9.	Freshwater and estuary migration sites with pool, lake, and instream habitat that provide cool, oxygenated water and cover items (e.g. boulders, woody debris, and vegetation) to serve as temporary holding and resting areas during upstream migration of adult salmon.
10.	Freshwater and estuary migration sites with abundant, diverse native fish communities to serve as a protective buffer against predation.
11.	Freshwater and estuary migration sites free from physical and biological barriers that delay or prevent emigration of smolts to the marine environment.
12.	Freshwater migration sites with sufficiently cool water temperatures and water flows that coincide with diurnal cues to stimulate smolt migration.
13.	Freshwater migration sites with water chemistry needed to support sea water adaptation of smolts.

Table 6. PBFs for Atlantic sturgeon critical habitat

1.	Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0 to 0.5 parts per thousand range) for settlement of fertilized eggs, refuge, growth, and development of early life stages.
2.	Aquatic habitat with a gradual downstream salinity gradient of 0.5 up to as high as 30 parts per thousand and soft substrate (e.g., sand, mud) between the river mouth and spawning sites for juvenile foraging and physiological development.
3.	Water of appropriate depth absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (1) unimpeded movement of adults to and from spawning sites; (2) seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and (3) staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (e.g., at least 1.2 meters) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river.
4.	Water, between the river mouth and spawning sites, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: (1) spawning; (2) annual and interannual adult, subadult, larval, and juvenile survival; and (3) larval, juvenile, and subadult growth, development, and recruitment (e.g., 13°C to 26°C for spawning habitat and no more than 30°C for juvenile rearing habitat, and 6 milligrams per liter dissolved oxygen or greater for juvenile rearing habitat).

5.0 Project Design Criteria (PDC)

The following PDC for the project types described herein were developed based on best available information, including past consultations, and the NMFS/FHWA Best Management Practices Manual for Transportation Projects. The PDC are expected to avoid and minimize the effects of stressors produced by transportation activities. Effects will be reduced to levels that are insignificant (i.e., undetectable, not measurable, or so minor that they cannot be meaningfully evaluated, where the size or severity of the impact should never reach the scale where take occurs) or discountable (i.e., extremely unlikely to occur); and therefore, NLAA the ESA-listed species or critical habitat considered in the Program.

Projects that do not fit into the described activity types or do not follow the PDC are not included in the Program, except in cases where FHWA/state DOT provides justification in the Verification Form and GARFO PRD concurs that the project conforms to the Program. If the GARFO PRD section 7 biologist reviewing the form determines the justification is not acceptable, then the project will not be eligible for the Program. Project modifications must not result in different effects not already considered. The action must not be associated in any way with known existing litigation against NMFS, FHWA, or the applicant.

The PDC may differ among particular geographic areas based on species biological requirements, species vulnerability to project effects, and differing ecological landscapes. The PDC are intended to ensure projects, individually and combined, are NLAA ESA-listed species and/or critical habitat. They include prescriptions on work timing, methods and materials approved for use, descriptions of locations where the Program does or does not apply, and other measures. General PDC are provided first, followed by stressor-specific PDC.

5.1 General

1. Ensure all operators, employees, and contractors are aware of all FHWA environmental commitments, including these PDC, when working in areas where ESA-listed species may be present or in critical habitat.
2. No work will individually or cumulatively have an adverse effect on ESA-listed species or critical habitat.
3. No work will occur in the tidally influenced portion of rivers/streams where Atlantic salmon presence is possible from April 10 through November 7.
4. No work will occur in areas identified as Atlantic or shortnose sturgeon spawning grounds⁶ as follows:
 - i. Gulf of Maine: April 1 through August 31
 - ii. Southern New England/New York Bight: March 15 through August 31
 - iii. Chesapeake Bay: March 15 through July 1 & September 15 through November 1
5. No work will occur in areas identified as sturgeon overwintering grounds⁹ where dense aggregations are known to occur, as follows:
 - i. Gulf of Maine: October 15 through April 30

⁶ Best available river kilometer information regarding spawning and overwintering grounds for Atlantic salmon, shortnose sturgeon, and Atlantic sturgeon is found in the species tables provided by GARFO at: www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/maps/index.html. Regularly check this site for up to date information.

- ii. Southern New England/New York Bight: November 1 through March 15
 - iii. Chesapeake Bay: November 1 through March 15
- 6. Within designated Atlantic sturgeon critical habitat, no work will affect hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 parts per thousand (ppt) range) for settlement of fertilized eggs, refuge, growth, and development of early life stages (PBF 1).
- 7. Work will result in no or only temporary/short-term changes in water temperature, water flow, salinity, or dissolved oxygen levels.
- 8. If it is possible for ESA-listed species to pass through the action area, a zone of passage with appropriate habitat for ESA-listed species (e.g., depth, water velocity, etc.) must be maintained (i.e., physical or biological stressors such as turbidity and sound pressure must not create barrier to passage).
- 9. The project will not directly affect any submerged aquatic vegetation (SAV) or oyster reefs.
- 10. No blasting or use of explosives will occur.
- 11. No in-water work on dams or tide gates.

5.2 Underwater Noise

- 12. If pile driving is occurring during a time of year when ESA-listed species may be present, and the anticipated noise is above the behavioral noise threshold, a 20-minute “soft start” is required to allow animals an opportunity to leave the project vicinity before sound pressure increases.
- 13. If the project involves driving steel piles, non-steel piles greater than 24-inches in diameter, or any other noise-producing mechanism, the expected underwater noise (pressure) must be below the physiological/injury noise threshold for ESA-listed species in the action area.
- 14. Any new pile supported structure must involve the installation of no more than 50 piles (below MHW).

Noise Criteria:

Fish:

- a) Peak Sound Pressure Level (SPL): 206 dB re 1 μ Pa (injury)
- b) Cumulative Sound Exposure Level (cSEL): 187 dB re 1 μ Pa²-s for fishes above 2 grams and cSEL: 183 dB re 1 μ Pa²-s for fishes below 2 grams (injury)
- c) Behavioral Disturbance: levels \geq 150 dB re 1 μ Pa RMS

Sea Turtles:

- a) Injury: Levels \geq levels 180 dB re 1 μ Pa RMS
- b) Behavioral Disturbance: levels \geq 166 dB re 1 μ Pa RMS

Whales:

- a) Behavioral Disturbance (non-pulse): levels \geq 120 dB re 1 μ PA RMS
- b) Behavioral Disturbance (impulsive): levels \geq 160 dB re 1 μ PA RMS

Steel Piles (or non-steel piles and steel sheet piles >24")

FHWA/state DOT is responsible for showing that proposed pile installation work will not create ensonified areas that will adversely affect any behavior of ESA-listed species. FHWA/state DOT can make these determinations using GARFO's Acoustic Tool (available at: www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.html), or using other methods that rely upon the best available information.

FHWA/state DOT must provide the information they use to make these determinations with their completed Verification Form. If GARFO does not agree with a determination, the project must undergo individual consultation.

For any pile driving involving ESA-listed whales (including non-steel piles and steel sheet piles < 24")

If ESA-listed whales are in the action area, FHWA/state DOT will be responsible for showing that proposed pile installation work will not create ensonified areas isopleths that will adversely affect any behavior of ESA-listed whales (i.e., create a barrier for passage for species that are migrating through the action area). FHWA/state DOT can make these determinations using GARFO's Acoustic Tool (available at: www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.html), or using other methods that rely upon the best available information.

FHWA/state DOT will also need to use the GARFO user spreadsheet for calculating the effect distances (i.e., isopleths) from a source for marine mammal permanent threshold shift (PTS) onset thresholds (available at: www.nmfs.noaa.gov/pr/acoustics/guidelines.htm). Using this spreadsheet, FHWA/state DOT must show that proposed pile driving will not injure listed cetaceans.

FHWA/state DOT must provide the information they use to make these determinations with their completed Verification Form. If GARFO PRD does not agree with a determination, the project must undergo individual consultation.

5.3 Impingement/Entrainment/Entanglement

15. Only mechanical, cutterhead, and low volume hopper dredges may be used.
16. No new dredging in Atlantic sturgeon or Atlantic salmon critical habitat (maintenance dredging still must meet all other PDC). New dredging outside Atlantic sturgeon or salmon critical habitat is limited to one-time dredge events (e.g., burying a utility line) and minor (≤ 2 acres) expansions of areas already subject to maintenance dredging.
17. Temporary intakes related to construction must be equipped with 2 mm wedge wire mesh screening and must not have greater than 0.5 feet per second intake velocities, to prevent impingement or entrainment of any ESA-listed species.
18. Work behind cofferdams, turbidity curtains, and other methods to block access of animals to a dredge footprint is required when ESA-listed species may be present.
19. No new permanent surface water withdrawal, water intakes, or water diversions.
20. Turbidity control measures, including cofferdams, must be designed to not entangle or entrap ESA-listed species.
21. Any in-water lines, ropes, or chains must be made of materials and installed in a manner

to minimize or avoid the risk of entanglement by using thick, heavy, and taut lines that do not loop or entangle. Lines can be enclosed in a rigid sleeve.

5.4 Water Quality/Turbidity

22. In-water offshore disposal may only occur at designated disposal sites that have already been the subject of ESA section 7 consultation with NMFS and where a valid consultation is in place.
23. Any temporary discharges must meet state water quality standards (i.e., no discharges of substances in concentrations that may cause acute or chronic adverse reactions, as defined by EPA water quality standards criteria).
24. Only repair of existing discharge pipes or replacement in-kind allowed; no new construction.
25. Work behind cofferdams, turbidity curtains, or other methods to control turbidity are required when ESA-listed species may be present.

5.5 Habitat Alteration

26. Minimize all new waterward encroachment and permanent fill.
27. In Atlantic salmon critical habitat, replaced culverts must be constructed at a minimum of 1.2 bankfull width (BFW).
28. In Atlantic salmon critical habitat, no culvert end extensions, invert line culvert rehabilitation, or slipline culvert rehabilitation may occur.

5.6 Vessel Traffic

29. Maintain project vessel speed limits below 10 knots and dredge vessel speeds of 4 knots maximum, while dredging.
30. Maintain a 150-foot buffer between project vessels and ESA-listed whales and sea turtles (1,500 feet for right whales) and while dredging, at least a 300-foot buffer between dredge vessels and ESA-listed whales and sea turtles (1,500 feet for right whales).
31. The number of project vessels must be limited to the greatest extent possible, as appropriate to size and scale of the project.
32. A project must not result in the permanent net increase of commercial vessels.

Appendix A. Verification Form

Federal Highway Administration (FHWA) or the applicable state Department of Transportation (state DOT) will submit 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, Protected Resources Division (GARFO PRD) at nmfs.gar.esa.section7@noaa.gov with “FHWA GARFO 2018 NLAA Program” in the subject line, upon obtaining sufficient information.

Project Activity Type (check all that apply to entire action):

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

Transportation Project Information

Name of Project:			
Project Sponsor:			
Contact Person:		Email/Phone:	
Latitude (e.g., 42.625884):			
Longitude (e.g., -70.646114):			
Anticipated Project Start Date:		Anticipated Project End Date:	
Total Area of Habitat Alteration (acres):			
Project/Action Description and Purpose (include town/city/state and water body where project is occurring):			

ESA-Listed Species and/or Critical Habitat Present (Check all that apply)

<input type="checkbox"/>	Atlantic sturgeon (all DPSs) If not all DPSs, list which here:	<input type="checkbox"/>	Kemp’s ridley sea turtle
<input type="checkbox"/>	Atlantic sturgeon critical habitat (GOM, NYB, Chesapeake Bay DPSs)	<input type="checkbox"/>	Loggerhead sea turtle (Northwest Atlantic DPS)
<input type="checkbox"/>	Shortnose sturgeon	<input type="checkbox"/>	Leatherback sea turtle
<input type="checkbox"/>	Atlantic salmon (GOM DPS)	<input type="checkbox"/>	North Atlantic right whale
<input type="checkbox"/>	Atlantic salmon critical habitat (GOM DPS)	<input type="checkbox"/>	North Atlantic right whale critical habitat
<input type="checkbox"/>	Green sea turtle (North Atlantic DPS)	<input type="checkbox"/>	Fin whale

The following stressors are applicable to the action (check all that apply- use Table 1 for guidance)

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

FHWA’s Determination of Effects to ESA-Listed Species and/or Critical Habitat

By submitting this Verification Form, FHWA, or state DOT as FHWA’s designated non-federal representative, indicates that they determined that the proposed activity described above is not likely to adversely affect (NLAA) ESA-listed species or designated critical habitat under NMFS’ jurisdiction in accordance with the Program, and all effects (direct, indirect, interrelated, and interdependent) are either insignificant (so small they cannot meaningfully be measured, detected, or evaluated) and/or discountable (extremely unlikely to occur).

- The activity complies with all of the Project Design Criteria (PDC) in the Program, as confirmed in the PDC checklist.
- The activity does not comply with all of the PDC in the Program, but the additional justification demonstrates how the project conforms to the Program. This does not apply to PDC that are not applicable to the project.

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.

Project Design Criteria (PDC) Checklist

FHWA/state DOT shall incorporate all general PDC and all applicable PDC in the appropriate stressor category. For any PDC that are not incorporated, additional justification is required for a project to be eligible for the Program. FHWA/state DOT shall check the corresponding box for each PDC that is, or will be, incorporated into the project.

General

- 1. Ensure all operators, employees, and contractors are aware of all FHWA environmental commitments, including these PDC, when working in areas where ESA-listed species may be present or in critical habitat.

- 2. No work will individually or cumulatively have an adverse effect on ESA-listed species or critical habitat.
- 3. No work will occur in the tidally influenced portion of rivers/streams where Atlantic salmon presence is possible from April 10 through November 7.
- 4. No work will occur in areas identified as Atlantic or shortnose sturgeon spawning grounds as follows:
 - i. Gulf of Maine: April 1 through August 31
 - ii. Southern New England/New York Bight: March 15 through August 31
 - iii. Chesapeake Bay: March 15 through July 1 & September 15 through November 1
- 5. No work will occur in areas identified as sturgeon overwintering grounds where dense aggregations are known to occur, as follows:
 - i. Gulf of Maine: October 15 through April 30
 - ii. Southern New England/New York Bight: November 1 through March 15
 - iii. Chesapeake Bay: November 1 through March 15
- 6. Within designated Atlantic sturgeon critical habitat, no work will affect hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 parts per thousand (ppt) range) for settlement of fertilized eggs, refuge, growth, and development of early life stages) (PBF 1).
- 7. Work will result in no or only temporary/short-term changes in water temperature, water flow, salinity, or dissolved oxygen levels.
- 8. If it is possible for ESA-listed species to pass through the action area, a zone of passage with appropriate habitat for ESA-listed species (e.g., depth, water velocity, etc.) must be maintained (i.e., physical or biological stressors such as turbidity and sound pressure must not create barrier to passage).
If the “maximum extent of stressor” exceeds the “width of water body,” PDC 9 is NOT met, and justification is required to proceed with the Verification Form.
Width (m) of waterbody in action area:
Stressor category (stressor that extends furthest distance into waterbody- e.g., turbidity plume, sound pressure wave):
Maximum extent (m) of stressor into the waterbody:
- 9. The project will not directly affect any submerged aquatic vegetation (SAV) or oyster reefs.
- 10. No blasting or use of explosives will occur.
- 11. No in-water work on dams or tide gates.

Underwater Noise

- 12. If pile driving is occurring during a time of year when ESA-listed species may be present, and the anticipated noise is above the behavioral noise threshold, a 20-minute “soft start” is required to allow animals an opportunity to leave the project vicinity before sound pressure increases.
- 13. If the project involves driving steel piles, non-steel piles greater than 24-inches in diameter, or any other noise-producing mechanism, the expected underwater noise (pressure) must be below the physiological/injury noise threshold for ESA-listed species in the action area.
Submit your calculation showing that the noise is below the injury thresholds.

Pile material (e.g., steel pipe, timber, concrete)	Pile diameter/width (inches)	Number of piles	Installation method (e.g., impact hammer, vibratory start and then impact hammer to depth)

- 14. Any new pile-supported structure must involve the installation of no more than 50 piles (below MHW).

Impingement/Entrainment/Entanglement

- 15. Only mechanical, cutterhead, and low volume hopper dredges may be used.
- 16. No new dredging in Atlantic sturgeon or Atlantic salmon critical habitat (maintenance dredging still must meet all other PDC). New dredging outside Atlantic sturgeon or salmon critical habitat is limited to one-time dredge events (e.g., burying a utility line) and minor (≤ 2 acres) expansions of areas already subject to maintenance dredging.
- 17. Temporary intakes related to construction must be equipped with 2 mm wedge wire mesh screening and must not have greater than 0.5 feet per second intake velocities, to prevent impingement or entrainment of any ESA-listed species.
- 18. Work behind cofferdams, turbidity curtains, and other methods to block access of animals to dredge footprint is required when ESA-listed species may be present.
- 19. No new permanent surface water withdrawal, water intakes, or water diversions.
- 20. Turbidity control measures, including cofferdams, must be designed to not entangle or entrap ESA-listed species.
- 21. Any in-water lines, ropes, or chains must be made of materials and installed in a manner to minimize or avoid the risk of entanglement by using thick, heavy, and taut lines that do not loop or entangle. Lines can be enclosed in a rigid sleeve.

Water Quality/Turbidity

- 22. In-water offshore disposal may only occur at designated disposal sites that have already been the subject of ESA section 7 consultation with NMFS and where a valid consultation is in place.
- 23. Any temporary discharges must meet state water quality standards (i.e., no discharges of substances in concentrations that may cause acute or chronic adverse reactions, as defined by EPA water quality standards criteria).
- 24. Only repair of existing discharge pipes or replacement in-kind allowed; no new construction.
- 25. Work behind cofferdams, turbidity curtains, or other methods to control turbidity are required when ESA-listed species may be present.

Habitat Alteration

- 26. Minimize all new waterward encroachment and permanent fill.
- 27. In Atlantic salmon critical habitat, replaced culverts must be constructed at a minimum of 1.2 bankfull width (BFW).

- 28. In Atlantic salmon critical habitat, no culvert end extensions, invert line culvert rehabilitation, or slipline culvert rehabilitation may occur.

Vessel Traffic

- 29. Maintain project vessel speed limits below 10 knots and dredge vessel speeds of 4 knots maximum, while dredging.
- 30. Maintain a 150-foot buffer between project vessels and ESA-listed whales and sea turtles (1,500 feet for right whales) and while dredging, at least a 300-foot buffer between dredge vessels and ESA-listed whales and sea turtles (1,500 feet for right whales).
- 31. The number of project vessels must be limited to the greatest extent possible, as appropriate to size and scale of project.
- 32. A project must not result in the permanent net increase of commercial vessels.

Justification for NLAA Determination if not Incorporating All PDC

If the project is not in compliance with all of the applicable PDC, but FHWA/state DOT determined that the project is consistent with the Program and all effects are insignificant and/or discountable, provide justification below and identify which PDC are not incorporated. Project modifications must not result in different effects not already considered.

GARFO PRD Determination (To be filled out by GARFO PRD)

After receiving the Verification Form, GARFO PRD will contact FHWA/state DOT with any concerns and indicate whether GARFO PRD concurs with FHWA/state DOT's determination.

- GARFO PRD concurs with FHWA's determination that the proposed project complies with the Program.
- GARFO PRD concurs with FHWA's determination that the proposed project complies with the Program, with the justification described.
- GARFO PRD does not concur with FHWA's determination that the project complies with the Program and FHWA/state DOT should initiate a separate individual consultation.

GARFO PRD reviewer:

Name

Signature

Date

Appendix B. Annual Reporting Spreadsheet

See separate downloadable spreadsheet.