
User's Guide for the Pennsylvania Transportation Action Programmatic Consultation for the Bog Turtle

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**Federal Highway Administration
U.S. Fish and Wildlife Service
Pennsylvania Department of Transportation**

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1. Introduction

This document provides implementation guidance for the U.S. Fish and Wildlife Service (USFWS) programmatic biological opinion (BO) based on the Pennsylvania Department of Transportation (PennDOT) / Federal Highway Administration (FHWA) programmatic biological assessment (BA), *Effects of Transportation Actions on the Bog Turtle within the Commonwealth of Pennsylvania* (USFWS Project Code: 2023-0058552 / May 2025).

This user's guide provides:

- **Programmatic Scope and Effects Analysis Summary:** Actions appropriate for use of the bog turtle programmatic consultation and key effects analysis decision points.
- **Standard Operating Procedure (SOP) for Project(s) Submission:** Guidance for project submission under the bog turtle programmatic consultation for FHWA and its designated non-federal representative, PennDOT; and SOPs for the USFWS review and tracking of the bog turtle programmatic consultation.
- **Project Submittal Form:** A form for transportation agencies to use for submitting project level information to the Pennsylvania USFWS Field Office (Appendix 2); and
- **Avoidance and Minimization Measures:** A summary of programmatic project categories as well as avoidance and minimization measures (AMMs) to reduce the potential effects of projects, consistent with the scope of the bog turtle programmatic consultation (**Tables 3 & 4**).

The USFWS encourages all parties who plan to use the bog turtle programmatic consultation to review the BA and BO if there are questions regarding interpretation. These documents contain detailed information on the proposed action, an analysis of the potential effects to the species and their resources, and support of affect determinations. These and implementation documents relevant for compliance for the bog turtle programmatic consultation in Pennsylvania are available at the USFWS Pennsylvania Field Office website at: <https://www.fws.gov/northeast/pafo/>.

1.1 Bog Turtle (*Glyptemys [Clemmys] muhlenbergii*) Description and Life History

Identification Characteristics

- Small-sized (4-inch adult shell length)
- Dull brown upper shell (carapace) can vary from rough to smooth.

- Lower shell (plastron) can vary from rough to smooth and is generally dull brown with white/yellow starbursts.
- Each section of the shell may exhibit annual growth rings (annuli), especially younger individuals.
- Shells of older turtles typically appear smooth or polished.
- Has a black head with a very characteristic orange skin patch on the neck, can be yellow or white in some individuals. Coloration tends to be more vibrant in younger individuals and duller in older individuals.

Pennsylvania Habitat

- Typically occur in open-canopy, herbaceous sedge meadows, fens, wet pastures, and sphagnum bogs bordered by or interspersed with scrub-shrub and forested components.
- Supporting habitats typically characterized by ample sunlight, high evaporation rates, high humidity in the near-ground microclimate, and perennial saturation of portions of the ground by slow-moving water often forming a network of shallow pools and rivulets.
- Majority of the wetlands occupied by the species are located in agricultural areas and subject to grazing by livestock.
- Due to the lack of pristine habitat resulting from anthropogenic disturbance and plant succession processes throughout its range, the species can become accustomed to disturbed, low-quality wetland complexes which continue to maintain a persistent groundwater discharge regime.
- Transients have been observed using forested habitat with springs and small streams leading to more open marshes. Forested habitat areas, as well as headwater riparian corridors may be utilized as dispersal corridors to other wetlands.
- Extant populations are documented throughout a 17-County Range in Southcentral, Southeastern, and Northeastern PA.

Natural History

- Bog turtles rely upon different portions of the wetland and surrounding habitats at different times of year to fulfill various needs.

- Species become particularly active during spring emergence (late-March through mid-April), mating (mid-April through mid-June), and nesting (late May to early July).
- Eggs are often laid in elevated areas, such as the tops of tussocks and pedestal vegetation with open exposure to sunlight.
- Are generally sedentary during the heat of summer (aestivation) and then become more active in the pre-brumation period (September through early-October) in preparation for, and movement to their hibernaculum.
- Bog turtles are generally sedentary during the winter brumation period (mid-October through late-March).
- Will overwinter in typical fen/wetland habitat (under root mats of woody vegetation, submerged rock crevices, under tussocks and sphagnum bog mats), as well as streambanks in habitats which lack, or are deficient in typical hibernaculum microhabitat.
- Average home range estimates for the species acquired from various research efforts have ranged from 0.05 to 0.13 acre (NatureServe 2017).
- Bog turtles are known to use streams as travel corridors and avenues for dispersal into new, unoccupied wetlands.
- Traveling overland has also been observed through cornfields and pine plantations, across roadways, and through other terrestrial upland habitats.
- Omnivorous and will feed on a variety of items including worms, slugs, insects, and plant materials.

Reasons for Decline

- Loss, degradation, and fragmentation of specialized habitat type due to land development, infrastructure, and natural succession.
- Land development and infrastructure may result in barriers which isolate populations.
- Isolated populations often decrease in size until extirpated.
- Illegal collection and trade
- Invasive species
- Reptile pathogens

2. Programmatic Scope and Effects Analysis Summary

The range-wide programmatic consultation can be used for transportation activities¹ conducted by PennDOT, in coordination with FHWA and other state and federal agencies, that may affect the bog turtle (federally listed as threatened) within the extant range in Pennsylvania (**Figure 1** and **Table 1**). FHWA, the federal agency that supports PennDOT in the design, construction and maintenance through the Federal Aid Highway Program with approvals, reviews, funding and other actions, will be considered the lead federal agency for all transportation activities regardless of whether other federal permits are required, such as U.S. Army Corps of Engineers (USACE) permits under the Clean Water Act. FHWA (the lead agency), and PennDOT (as its non-federal representative) may use this programmatic consultation for included activities, or complete individual consultation, or use any other applicable programmatic consultation for their actions on a case-by-case basis.

The programmatic BO is designed to streamline the consultation process, and as such is the recommended consultation platform. When the required information is provided and the project qualifies for programmatic coverage, informal consultations will be completed within 14 days and formal consultations will be completed within 30 days of receipt of a complete submission. Staffing shortages at USFWS may result in some limited variations in the 30- day review time for formal consultations.

This programmatic consultation is generally all-inclusive for transportation activities, including routine maintenance activities and the construction of new roadways on new alignments. The intent is to cover the majority of transportation activities, however, some activities, upon USFWS review, may be determined to exceed the scope of the programmatic consultation and will require additional coordination or individual consultation. The ability and commitment to implement avoidance and minimization measures (AMMs) is a key factor in the USFWS determination of whether a transportation activity is eligible to utilize the programmatic consultation, therefore, give full consideration to applying the AMMs relevant to your transportation activity. Transportation activities found ineligible for the programmatic consultation will require individual consultation, potentially including formal consultation, resulting in delays and cost increases.

¹ Includes planned or programmed transportation improvement projects and maintenance activities.

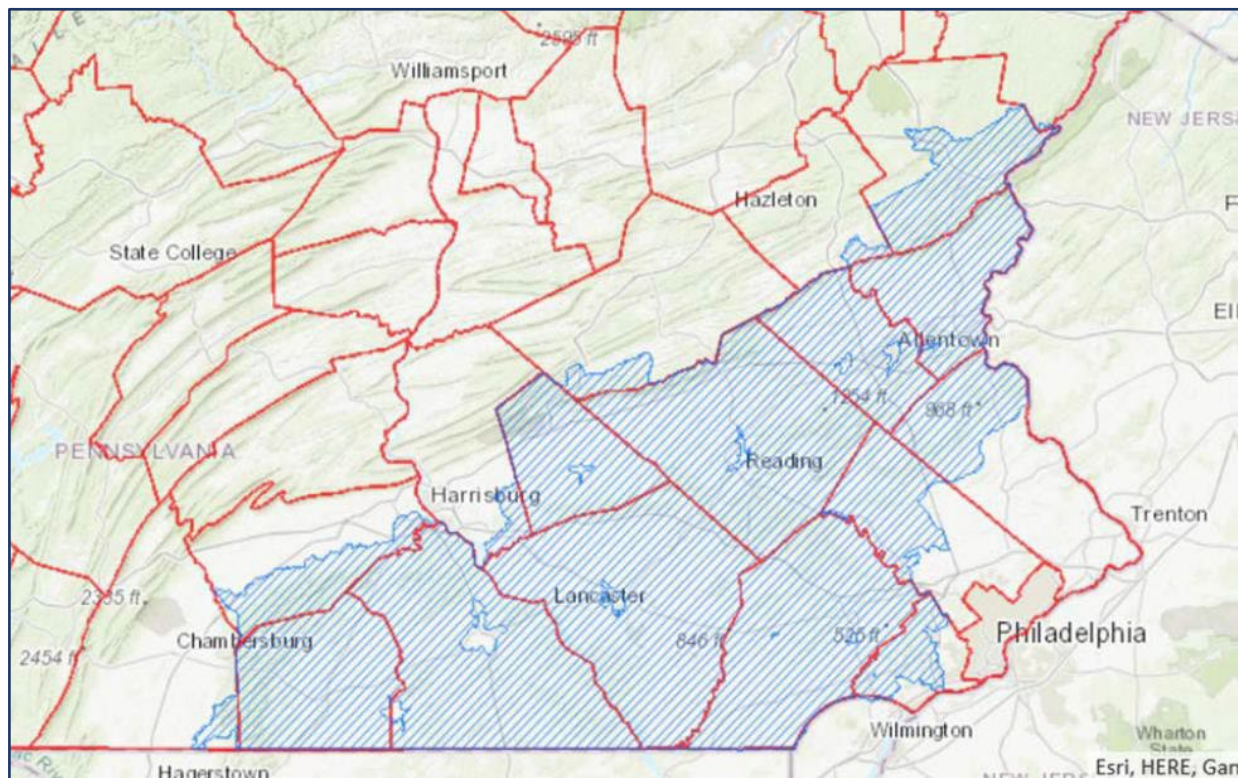


Figure 1. Programmatic Consultation Range and Extant Range of the Bog Turtle in Pennsylvania²

Table 1. Extant Range of the Bog Turtle within Pennsylvania

County	Extant Region	County	Extant Range
Adams	Entire County	Lancaster	Entire County excluding urban City of Lancaster
Berks	Entire County	Lebanon	Entire County
Bucks	Northern Watersheds	Lehigh	Entire County
Carbon	Aquashicola Creek Watershed	Monroe	Southern Watersheds
Chester	Entire County	Montgomery	Northern Watersheds
Cumberland	Southern Watersheds	Northampton	Entire County
Dauphin	Spring Creek and Conewago Creek Watersheds	Schuylkill	Swatara Creek Watershed
Delaware	In part (see Conservation Explorer Map)	York	Entire County excluding urban City of York
Franklin	Antietam Creek Watershed		

² Changes to the current extant range may occur. Utilizing an account login and selecting federal species/bog turtles in the Conservation Explorer Planning Mapping (<http://conservationexplorer.dcnr.pa.gov/content/map>) will provide the most current range. The most current range will always be considered as the Action Area for this programmatic consultation.

2.1 No Effect

The USFWS, FHWA, and PennDOT have agreed that if any of the following are true, there is no effect of the transportation activity on the bog turtle. No AMMs related to the programmatic are required to be applied in these situations:

- a. The activity is not within the extant range of the bog turtle as identified in **Figure 1** and **Table 1**³; or
- b. The activity is a maintenance activity identified in **Table 2** (many maintenance activities are dependent on where the activity occurs such as near wetlands or conversely on paved/maintained surfaces); or
- c. Wetlands are absent from the project area (including a 300-foot buffer around the limit of disturbance/limit of indirect effect); or
- d. A Phase I habitat assessment (habitat assessment) of the project area (including a 300-foot buffer around the limit of disturbance/limit of indirect effect) conducted by a qualified bog turtle surveyor, or trained PennDOT/FHWA personnel has determined the absence of species supporting habitat conditions; or
- e. The transportation activity is within the main channel (within the ordinary high-water mark) of water courses greater than 30 feet in width with persistent cobble/boulder substrate⁴; or
- f. The transportation action has been determined by the FHWA or PennDOT to completely avoid all potential effects on the species.

³ Note that some urbanized areas within the counties depicted in Figure 1 are excluded. Updates to the extant range may occur. Utilizing an account login and selecting federal species/bog turtles in the Conservation Explorer Planning Mapping (<http://conservationexplorer.dcnr.pa.gov/content/map>) will provide the most current range. The most current range will always be considered as the extant range for this programmatic consultation. The PNDI Environmental Review Tool recognizes the most current extant range.

⁴ Appendix 1 contains a listing of watercourses within the extant range that may have reaches greater than 30' wide with persistent cobble/boulder substrates.

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

CODE	BRIEF DESCRIPTION	DETAILED DESCRIPTION	USFWS PROGRAMMATIC DETERMINATION
621-2541-01	FHWA Disaster Recovery (Federal Aid Routes) Debris Clearance	All disaster activities for FHWA reimbursement involve tree, dirt, stone, and other debris removal.	MAY AFFECT
621-2542-01	FHWA Disaster Recovery (Federal Aid Routes) Protective Measures	All disaster activities for FHWA reimbursement involve installation of road closed and detour routing signs, temporary lane restrictions, temporary traffic signals, cones, barricades, etc.	NO EFFECT
621-2543-01	FHWA Disaster Recovery (Federal Aid Routes) Emergency Road Repairs	All disaster activities for FHWA reimbursement involve any repair of the roadway surface (i.e., paving, base repair).	NO EFFECT
621-2544-01	FHWA Disaster Recovery (Federal Aid Routes) Emergency Bridge Repairs	All disaster activities for FHWA reimbursement involving any repair of bridges (i.e., abutments, piers, deck and support structure, underwater and above water inspection, material removal, and related bridge repairs).	MAY AFFECT
621-2545-01	FHWA Disaster Recovery (Federal Aid Routes) Emergency Shoulder Repairs	All disaster activities for FHWA reimbursement involve reshaping, ditching, reestablishment, and rock lining of swales or ditch lining and related shoulder work.	MAY AFFECT
621-2546-01	FHWA Disaster Recovery (Federal Aid Routes) Emergency Pipe Installation	All disaster activities for FHWA reimbursement involve any repair, installation, or replacement of drainage system pipes.	MAY AFFECT
621-2549-01	FHWA Disaster Recovery (Federal Aid Routes) Other Costs	All other disaster activities for FHWA reimbursement, which are in response to the disaster damage.	MAY AFFECT
663-2541-01	FEMA Disaster Recovery (Non-Federal Routes) Debris Clearance	All disaster activities for FEMA reimbursement involve tree, dirt, stone, and other debris removal.	MAY AFFECT
663-2542-01	FEMA Disaster Recovery (Non-Federal Routes) Protective Measures	All disaster activities for FEMA reimbursement involve installation of road closed and detour routing signs, temporary lane restrictions, temporary traffic signals, cones, barricades, etc.	NO EFFECT
663-2543-01	FEMA Disaster Recovery (Non-Federal Routes) Emergency Road Repairs	All disaster activities for FEMA reimbursement involve any repair of the roadway surface (i.e., paving, base repair).	NO EFFECT
663-2544-01	FEMA Disaster Recovery (Non-Federal Routes) Emergency Bridge Repairs	All disaster activities for FEMA reimbursement involving any repair of bridges (i.e., abutments, piers, deck and support structure, underwater and above water inspection, material removal, and related bridge repairs).	MAY AFFECT
663-2545-01	FEMA Disaster Recovery (Non-Federal Routes) Emergency Shoulder Repairs	All disaster activities for FEMA reimbursement involve reshaping, ditching, reestablishment, and rock lining of swales or ditch lining and related shoulder work.	MAY AFFECT
663-2546-01	FEMA Disaster Recovery (Non-Federal Routes) Emergency Pipe Installation	All disaster activities for FEMA reimbursement involve any repair, installation, or replacement of drainage system pipes.	MAY AFFECT
663-2549-01	FEMA Disaster Recovery (Non-Federal Routes) Other Costs	All other disaster activities for FEMA reimbursement, which are in response to the disaster damage.	MAY AFFECT

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

711-7112-01	Shaping	Shaping operations, such as scarifying, grading and shaping, and compacting on long sections of unpaved roads to restore cross section or eliminate corrugations and potholes. This may include a ditch or drainage channel with an excavator taking care to cut ditch/channel to original contour by removing only debris or deposited material.	MAY AFFECT
711-7113-01	Restabilization	The application of stabilization material to long sections of unpaved roads, such as adding, shaping and compacting stabilizing material. Fine material may be graded up from the ditch and blended with the added material to improve compaction.	MAY AFFECT
711-7114-01	Dust Palliative - Bit./Calcium Chloride/Other Product	The placing of bituminous or calcium chloride materials on unpaved roads to prevent dust formation including spot treatments.	NO EFFECT
711-7115-01	Patch/Base Repair	Repairing potholes, isolated depressions, etc. on unpaved roads.	NO EFFECT
711-7116-01	Emergency Truck Escape Ramps	Maintenance of unpaved portion of emergency truck escape ramps.	NO EFFECT
711-7121-01	Patching - Manual	This activity includes all actions to manual patching operations, such as, preparing (milling is included) and sweeping the hole, tacking (hot mix only), manually placing bituminous patching material, and compaction on paved roads.	NO EFFECT
711-7121-02	Road – Paved Manual Patching Non-Standard	Manual patching using emergency repair patching procedures such as filling and compacting.	NO EFFECT
711-7121-04	Road-Paved Spray Patch Manual or Mechanized	Pothole repair spray patching operations such as removing weakened material, cleaning, application of liquid bituminous and aggregate on paved road including rigid pavement.	NO EFFECT
711-7121-05	Manual Patching Mechanized Cutting	Manual patching/mechanized cutting repair of potholes in limited areas	NO EFFECT
711-7122-01	Patching – Mechanical – Tow Paver	Mechanical patching operations of limited areas (less than 500 feet continuous, 1300 linear feet per mile or 1750 square yards per lane mile), such as application of tack coat, placing hot plant mix material with paver and compaction on paved roads.	NO EFFECT
711-7122-02	Patching – Mechanical – Mixer Paver	Mechanical patching operations of a limited area (less than 500 feet continuous, 1300 linear feet per mile, or 1750 square yards per lane mile) using a mixer paver to place a layer of liquid bituminous and aggregate blended mix on paved roads.	NO EFFECT
711-7122-03	Patching – Mechanical – Paver Finisher	Mechanical patching operations of limited areas (less than 500 feet continuous, 1300 linear feet per mile, or 1750 square yards per lane mile); such as the application of tack coat, placing hot plant mix material with a paver finisher and compaction on paved roads.	NO EFFECT
711-7122-04	Patching – Edge – Mechanical	Mechanized edge patching to repair extensive deterioration and re-establishment of roadway width over existing base, including cleaning, placement of tack coat, placement of hot plant bituminous mix, shaping and compacting. The re-established pavement width shall be equal to the roadway width as recorded in the straight-line diagram or the width of the base material as indicated by field conditions.	NO EFFECT
711-7122-05	Plant Mix Patching – Partial Depth (Milling Machine and Widener) Mechanized	Placement of mechanized bituminous patches over surface distresses in a limited area. Includes milling machine in high-productivity surface repair operations.	NO EFFECT
711-7124-01	Surface Treatment – Liquid Bituminous Seal Coat Mechanical	Liquid bituminous surface treatment operations such as sweeping, application of liquid bituminous material and placing and seating the cover aggregate on paved roads. The sweeping and cleaning of the road prior to the surface treatment, such as cleaning up aggregate, re-application of aggregate made necessary by bleeding, etc., should be charged to this code.	NO EFFECT
711-7124-02	Surface Treatment – Sand Bleeding Roads	Placing sand and/or appropriate aggregates on roads flushing/bleeding due to liquid bituminous operations including mechanized skin patching operations.	NO EFFECT

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

711-7124-03	Surface Treatment – Slurry Seal and Ralumac and Nova Chip	The application of slurry seal, ralumac, or nova chip surface treatments.	NO EFFECT
711-7124-04	Surface Treatment – Liquid Bituminous – Seal Coat – Double Application	The application of liquid bituminous immediately followed by the rolling in of course aggregates repeated twice to result in a double application of each material.	NO EFFECT
711-7124-09	Surface Treatment – Seal Coat Stockpiling Material	Stockpiling (hauling) costs for surface treatment/seal coat operations where excess aggregate is stored for future use.	NO EFFECT
711-7126-01	Base/Subbase Repair – Flex. Base – Light Duty	Base/subbase repair operations, such as removal of surface and base/subbase material, placing of u-drains and bleeders, adding new material and compaction on pie crust (pancake) and light duty roads. Pie crust is defined as a roadway with less than two (2) inches total depth of bituminous surface including surface treatment build up.	NO EFFECT
711-7126-02	Base/Subbase Repair – Flex. Base – Heavy Duty	Base/subbase repair operations, such as removal of surface and base/subbase material, placing drains and bleeders, new material, and compaction on flexible base (heavy duty) roads.	NO EFFECT
711-7126-03	Base/Subbase Repair – Rigid Base	Base/subbase repair operations, such as removal of surface and base/subbase material, placing of drainage, new material, and compaction.	NO EFFECT
711-7126-04	Base/Subbase Repair – Widener	High productivity base/subbase repair operations utilizing a milling machine and a mechanized widener such as removing surface material with a milling machine, adding bituminous base/subbase material with a widener and compaction.	NO EFFECT
711-7127-02	Skin Patch – Liquid Bituminous – Mechanical	Mechanized liquid bituminous skin patching of limited areas such as sweeping, application of liquid bituminous material and placing and seating the cover aggregate on paved roads.	NO EFFECT
711-7128-01	Crack Sealing – Bituminous Surface Lane	Crack sealing bituminous surfaces with pre-packaged material in a non-over-banding operation. Activity includes routing of cracks where required (working transverse and single random cracks), cleaning of cracks, applying material, and squeegeeing on rigid or flexible base roads.	NO EFFECT
711-7129-01	Hot Pour Mastic	Hot applied pourable asphalt material containing aggregate used to repair pavement deficiencies which exceed parameters of crack sealing. This includes heating the material, cleaning and drying of cracks or repair areas, applying material and leveling the sealant material on rigid or flexible base roads.	NO EFFECT
711-7131-01	Leveling – <2" - Tow Pav./ Pav. Finish – Mechanical	Applying a leveling course to re-establish the roadway cross section using a paver finisher or tow paver in excess of 500 feet continuous length.	NO EFFECT
711-7131-03	Leveling Course > 2" – Binder Finish Paver Mechanized	The application of a plant mixed leveling course, used to re-establish the roadway cross section, using a paver finisher over an existing paved road.	NO EFFECT
711-7132-01	Milling – Bituminous Surfaces	Pavement milling such as removing material, loading material and clean up on paved surfaces.	NO EFFECT
711-7132-02	Spot Milling Only	Spot pavement milling such as blow-up removal, loading material and clean up on paved surfaces.	NO EFFECT
711-7133-04	Recycling – Bituminous Surfaces- Full Depth (FDR) Mechanized	Pavement recycling such as removing material, adding asphalt, placing mat and compaction on paved surfaces.	NO EFFECT
711-7135-01	Surface Treatment – Plant Mix – Paver 1½	The application of a uniform 1½" bituminous paving operation, application of a tack coat, cutting pavement notches, placing of hot mix with bituminous paver finisher and compaction on paved roads in excess of 500 feet continuous length.	NO EFFECT
711-7135-02	Surface Treatment – Plant Mix - 1" Paving	The application of a uniform 1-inch bituminous paving operation such as sweeping, application of tack coat, cutting pavement notches, placing of hot mix with a bituminous paver finisher and compaction on paved roads in excess of 500 feet continuous length.	NO EFFECT

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

711-7135-03	Surface Treatment – Plant Mix Single Lane	Single lane application of a uniform plant mixed bituminous paving course over an existing paved road.	NO EFFECT
711-7136-01	Pavement Widening Mechanized	The widening of paved roadways such as scarifying, shaping and/or removing existing material, the addition of bituminous concrete base course (BCBC) shaping and compacting. The widening shall consist of a minimum of 2 feet. If both sides of the roadway are to be widened, it shall consist of a minimum of 2 feet on each side.	MAY AFFECT
711-7138-01	Recycled Asphalt Pavement, Paver Finisher (RAP)– Placement Only <3”	Application of fresh mixed recycled asphalt material over an existing bituminous roadway to reestablish a uniform cross section.	NO EFFECT
711-7138-02	Recycled Asphalt Pavement Paver Finisher – Placement Only >3”	Application of fresh mixed recycled asphalt material over an existing bituminous roadway with a finish paver using RAP applied at a compacted depth of 3-5 inches.	NO EFFECT
711-7138-03	Recycled Asphalt Pavement – Widening Recycled Materials	Involves widening of the paved roadways and placing freshly mixed RAP material, shaping, and compacting. Existing roadway 18 feet or less and widening shall be a minimum of 2 feet.	MAY AFFECT
711-7138-04	Recycled Asphalt Pavement – Base Repair Mechanized	Removal of distressed pavement base material and replacement using freshly mixed RAP material.	NO EFFECT
711-7138-05	Recycling Bituminous Mobile Mixer Paver	Application of recycled bituminous material on an existing bituminous roadway using a mobile mixer paver.	NO EFFECT
711-7138-08	Recycled Asphalt Pavement Central Mix Plant (Pug Mill) Production Only	Production of RAP material from stockpiled reclaimed (milled) asphalt material and virgin aggregate mixed with liquid bituminous material. (This assembly is combined with 711-7238-01)	NO EFFECT
711-7138-11	Recycled Asphalt Pavement Cold-in Place Recycling	On-grade construction and material process of a cold recycled bituminous base course with a self-propelled milling machine processing a down-cutting drum, screening, and pugmill mixer.	NO EFFECT
711-7139-01	FB Paving Paver Finisher – Placement Only Leveling >2”	Application of fresh mixed FB asphalt over an existing bituminous roadway using a finish paver to re-establish a uniform cross-section.	NO EFFECT
711-7139-02	FB Paving Paver Finisher – Placement Only Uniform Overlay >2”	Application of fresh mixed FB asphalt to a uniform depth over a prepared bituminous roadway using a finished paver to re-establish a uniform cross-section.	NO EFFECT
711-7139-05	FB Paving Mobile Mixer Paver	Mixing of virgin aggregate and liquid bituminous material to established standards for FB mixes, along with the application of the fresh mixed FB asphalt onto an existing bituminous roadway using a mobile mixer.	NO EFFECT
711-7139-08	FB Paving Central Mix Plant (Pug Mill) Production Only	Production of FB asphalt material for stockpiled virgin aggregate mixed with liquid bituminous material for application to an existing bituminous roadway using a finished paver. (This assembly is combined with 711-7239-01)	NO EFFECT
711-7141-01	Concrete Patching – Full Depth	The full depth patching/replacement with concrete on rigid pavements.	NO EFFECT
711-7141-02	Concrete Patching – Spalls	The partial depth patching (spall repair) with concrete on rigid pavements.	NO EFFECT
711-7147-01	Joint Sealing Concrete Roads	Joint sealing operations on rigid pavements only.	NO EFFECT
711-7147-02	Joint Sealing Concrete Rds. – Pavement/Shoulders Separation	Sealing the separated area located immediately adjacent to a concrete highway and bituminous shoulder.	NO EFFECT
711-7148-01	Stockpile Aggregate	Account code only – no on ground activity.	NO EFFECT

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

711-7151-01	Minor Risk Management/ Safety	Completion of minor risk management/safety improvement projects. This includes designated, site-specific activities such as brushing, bank cutting/shaping, radius improvement, guiderail, etc. coordinated through the District traffic unit or the district risk engineer/specialist.	MAY AFFECT
711-7212-01	Grading - Mechanical	Grading operations, such as grading, shaping, and compacting of unpaved shoulder and side approaches. This is one of our most important preventative maintenance functions. Properly sloped and maintained shoulders aid in the quick removal of surface water from the roadway into the drainage system. Incidental material may be added or removed. If the ditch line adjacent to the effective shoulder area is cut, this should be charged to 711-7312-01 ditch cleaning.	MAY AFFECT
711-7213-01	Stabilization – Add Material Mechanical	The application, shaping and compaction of stabilizing material over long portions of the shoulder. This type of operation is typically performed after a roadway has been resurfaced and the shoulder elevation needs to be adjusted to meet the new pavement grade.	NO EFFECT
711-7214-01	Dust Palliative Bituminous or Calcium Chloride	The application of a bituminous, calcium chloride material, or other dust palliatives on the surface of a properly graded, stabilized or earth shoulder to increase stability.	NO EFFECT
711-7215-01	Cutting – Belt Loader	The cutting of unpaved shoulders utilizing a belt loader includes grading, shaping, adding material, compacting, and hauling away excess material from earth shoulders and cutting and hauling of turf from areas adjacent to paved shoulders.	MAY AFFECT
711-7215-02	Cutting – Front End Loader	The cutting of unpaved shoulders utilizing a front-end loader including grading, shaping, adding material, compacting, and hauling away excess material from earth shoulders and cutting and hauling of turf from areas adjacent to paved shoulders.	MAY AFFECT
711-7216-01	Upgrading – Paving Mechanized	The upgrading of unpaved shoulders to paved shoulders, such as scarifying, shaping and/or removing existing material, the addition of new material, shaping and compacting. This action is intended to reduce or eliminate shoulder erosion caused by high water velocities on unpaved surfaces. The grading of shoulders shall be confined to areas where shoulder erosion problems exist.	MAY AFFECT
711-7217-01	Stabilization – Add Material Manual	The application, shaping and compaction of stabilizing material over short sections of unpaved shoulders, due to washouts or pavement edge drop-offs at the inside of curves, intersections or other locations.	NO EFFECT
711-7221-01	Patching – Manual	This activity includes all actions related to manual patching operations on paved shoulders.	NO EFFECT
711-7221-02	Patching Plant Mix Paver or Widener Mechanized	Mechanized repair of deteriorated paved shoulder area.	NO EFFECT
711-7222-01	Patching – Mechanical – Plant Mix	This activity is the single application of liquid bituminous and aggregate on paved shoulders.	NO EFFECT
711-7224-01	Surface treatment – Mechanical – Liquid Bituminous	This activity includes all actions related to liquid bituminous surface treatment operations on paved shoulders and side approaches.	NO EFFECT
711-7224-09	Surface Treatment – Liquid Bituminous	This assembly shall only apply to the end of the surface treatment/seal coat operations where excess aggregate is stored for future use.	NO EFFECT
711-7225-01	Driveway Adjustment	This activity is for the adjustment of either paved or unpaved driveways. This includes all actions related to driveway adjustments.	NO EFFECT
711-7226-01	Base/Subbase Repair – Light Duty	This activity includes all actions related to base/subbase repair operations such as removal of surface and base/subbase material, placing of U-drains and bleeders, and adding new material and compactions on light-duty paved shoulders.	NO EFFECT
711-7226-02	Base/Subbase Repair – Heavy Duty	This activity includes all actions related to base/subbase repair operations, such as removal of surface and base/subbase material, placing drainage, new material, and compaction on heavy-duty shoulders.	NO EFFECT
711-7227-01	Skin Patching – Manual – Liquid Bituminous	This activity is the manual application of liquid bituminous and aggregate on paved shoulders in limited areas. This includes sweeping, application of liquid bituminous material and placing and seating the cover aggregate on paved	NO EFFECT

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

		shoulders.	
711-7227-02	Skin Patching – Mechanical – Liquid Bituminous	This activity is the mechanized application of liquid bituminous and aggregate on paved shoulders in limited areas. This includes sweeping, application of liquid bituminous material and placing and seating the cover aggregate on paved shoulders.	NO EFFECT
711-7227-09	Skin Patching – Paved Skin Patch Stockpile Costs Only	This assembly shall only apply to the end of the seal coat/surface treatment operations where excess aggregate is stored for future use.	NO EFFECT
711-7228-01	Crack Sealing – Bituminous Surface Manual	Sealing of cracks in bituminous shoulders with pre-packed material	NO EFFECT
711-7228-02	Crack Sealing – Concrete Surface Manual	Sealing of cracks in concrete shoulders with pre-packed material.	NO EFFECT
711-7232-01	Shoulders – Paved Milling and Bituminous Surface Mechanized	This activity includes all actions related to paved shoulder milling such as removing material, loading material, and cleanup on paved surfaces.	NO EFFECT
711-7238-01	Shoulders – Paved Recycled Asphalt Pavement	This assembly shall be performed in conjunction with a recycled bituminous roadway surface improvement (RAP) assembly when shoulders are present	NO EFFECT
711-7239-01	Shoulders – Paved FB Paving	This assembly shall be performed in conjunction with a FB paving assembly when shoulders are present.	NO EFFECT
711-7311-01	Cleaning – Inlet/Endwall/ Basin – Manual/Mechanical	Cleaning inlets and end walls such as removal and disposal of material. Normally, if the activity is just cleaning inlets and end walls all cleaning operations performed in the ditch channel within 15 feet of the pipe opening and one shovel length into the pipe will be charged to this code.	MAY AFFECT
711-7311-02	Cleaning – Inlet Clogged	Cleaning inlets and end walls such as removal and disposal of material. Normally, if the activity is just cleaning inlets and end walls all cleaning operations performed in the ditch channel within 15 feet of the pipe opening and one shovel length into the pipe will be charged to this code.	MAY AFFECT
711-7312-01	Cleaning – Ditch/Drain Chan. Mech.	Mechanized cleaning and reshaping of ditches and drainage channels, such as removal and disposal of material. Ditches and drainage channels should provide an obstruction free flow of surface water away from and parallel to the roadway.	MAY AFFECT
711-7312-02	Cleaning – Ditch/Drain Chan. Manual	Cleaning flow lines (swales), such as removal and disposal of material. The cleaning of flow lines on unpaved roads is also charged to this activity.	MAY AFFECT
711-7312-03	Cleaning – Swales – Mech.	Cleaning flow lines (swales), such as removal and disposal of material. The cleaning of flow lines on unpaved roads is also charged to this activity.	MAY AFFECT
711-7314-01	Cleaning Pipes and Culverts	The mechanical cleaning of pipes and culverts and the removal and disposal of material. The flushing of pipes and culverts is accomplished by using a high velocity sewer cleaner, sewer odor or cable unit. Inlet and outlet ditches must be cleaned before the pipe cleaner arrives at the work site and charged to “ditch cleaning”.	MAY AFFECT
711-7315-01	Install Rock Lining	The installation of rock lining in drainage ditches.	MAY AFFECT
711-7321-01	Replace Inlet and Endwall – Manual	The repair or replacement of inlets and end walls such as removing old material, excavating area, construction of forms, pouring of concrete or appropriate material.	MAY AFFECT
711-7321-02	Repair/Adjust Inlets and or Endwalls – Manual	The repair and or adjustments to inlets and/or end walls. Includes actions required to make repairs/adjustments to inlets and/or end walls.	MAY AFFECT
711-7324-01	Replace Pipes and Culverts under 36 inches – Mech.	The replacement/installation of pipes and culverts less than 36 inches in diameter, such as cutting/sawing pavement, excavation of trench, installing pipe, backfilling, and compaction.	MAY AFFECT

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711-7324-02	Replace Pipes and Culverts over 36 inches–Mech.	The replacement/installation of pipes and culverts 36" and greater in diameter, such as cutting/sawing pavement, excavation of trench, installing pipe, backfilling, compacting, and installation of flared end sections or construction of field stone end walls.	MAY AFFECT
711-7324-03	Replace/Install Parallel Pipe	The replacement/installation of parallel pipes such as saw cutting shoulder, excavation of trench, installation of pipe, backfilling and compacting.	MAY AFFECT
711-7324-04	Drainage – Replacement/Installation Pipes Extension Only	This assembly is all actions related to the extension of existing pipe installation.	MAY AFFECT
711-7324-05	Drainage – Pipe Trenches Trench Restoration Manual	This assembly is the placing of a bituminous surface/base course after a pipe replacement.	NO EFFECT
711-7325-01	Repair/Replace Structure under 8-foot Length	The repair or replacement of a masonry, concrete, or wood structure (arch culvert, box culvert, slab or wood deck structure, masonry structure, etc.) under 8 feet in length which cannot be charged to activity 711-7324 pipe or metal culvert replacements.	MAY AFFECT
711-7326-01	Repair Pipe and Culvert	The repair of pipes and culverts such as installing a pipe liner, patching a pipe, replacing a small end section, etc.	MAY AFFECT
711-7328-01	Install Subsurface Drain (U- Drain)	The installation of subsurface drains (u-drain).	MAY AFFECT
711-7331-01	Side Dozing – Mechanical	The removal of accumulated material from beneath guiderail such as: side dozing of vegetation and soil buildup and manually shoveling embankment if stroke of side dozer is insufficient. Manually filling of small washouts along the job may be necessary and charged to this assembly.	NO EFFECT
711-7332-01	Repair/Install Gabions/Ret. Walls	The Installation or repair of gabions and retaining walls including the removal of material, shoring and building supports, etc.	MAY AFFECT
711-7333-01	Repair Sink Holes/Slides	All actions related to roadway restoration including the removal and disposal of debris from slides, repair of cuts and fills, dressing slopes and washouts, bench cleaning, repair of sink holes, etc.	MAY AFFECT
711-7334-01	Graffiti Removal	The covering (painting) or removal of graffiti from any department facilities.	NO EFFECT
711-7351-01	Rain or Wind Patrol	Patrolling of roadways and minor debris removal during the storm event including the evaluation of drainage and erosion control facilities for potential hazards to the motoring public. Includes cleaning minor surface debris from drains and roadway, removing fallen trees and branches from the traveled way and any other actions required as a result of the storm. Does not include any drain cleaning which requires the removal and disposal of material other than minor surface debris.	NO EFFECT
711-7421-01	Washing Cleaning Various	Mechanical washing of the highway tunnel interior.	NO EFFECT
711-7422-01	Traffic Services – Traffic Incident Management	Tunnel traffic incident management activities assuming staging and other support activities are not conducted in or near wetlands.	NO EFFECT
711-7422-02	Repair Tunnel Roadway Wearing Surface	All actions related to Bituminous Asphalt or Concrete patching include preparing (milling/cutting) and cleaning the hole, tacking, manually placing hot or cold bituminous patching, including concrete material and compaction on bituminous paved tunnel roads.	NO EFFECT
711-7422-03	Repair/Replace Tunnel Barrier	All actions related to the repair and replacement of tunnel barriers.	NO EFFECT
711-7422-04	Tunnel Lane Signal	All actions related to the repair, replacement, servicing, and maintenance of all tunnel lane signals and tunnel lane signal systems including, but not limited to, replacement of lamps, testing, troubleshooting and repairs, cleaning, etc.	NO EFFECT
711-7422-05	Tunnel Signs	All actions related to the repair or replacement of tunnel signs.	NO EFFECT

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711-7422-06	Over Height Truck Warning System	All actions related to the repair or replacement of tunnel Over Height Truck Warning Systems and appurtenances.	NO EFFECT
711-7423-01	Lighting Systems – Various	All actions related to performing non-complex, minor repairs or inspections of tunnel lighting systems and lighting infrastructure.	NO EFFECT
711-7423-02	Repair Tunnel Lighting Systems	All actions related to performing moderately complex, and complex repairs to or replacement of tunnel lighting systems.	NO EFFECT
711-7424-01	Electrical Systems – General Maintenance/Inspection (SWO)	All actions related to performing non-complex, minor repairs or inspections of tunnel electrical infrastructure and systems.	NO EFFECT
711-7424-02	Electrical Systems – Switch Gear	All actions related to performing moderately complex and complex repairs to or replacement of tunnel electrical switch gears.	NO EFFECT
711-7424-03	Electrical Systems – Motor Control Center	All actions related to performing moderately complex and complex repairs to or replacement of tunnel motor control centers.	NO EFFECT
711-7424-04	Electrical Systems – Repair or Replace Transformer	All actions related to performing moderately complex and complex repairs to or replacement of tunnel transformers.	NO EFFECT
711-7424-05	Electrical Systems – Repair or Replace Transfer Switch	All actions related to performing moderately complex and complex repairs to or replacement of tunnel electrical transfer switches.	NO EFFECT
711-7424-06	Electrical Systems – Panel Board	All actions related to performing moderately complex and complex repairs to or replacement of tunnel electrical panelboards.	NO EFFECT
711-7424-07	Electrical Systems – Universal Power Supply	All actions related to performing moderately complex and complex repairs to or replacement of tunnel universal power supply systems (UPS).	NO EFFECT
711-7426-01	Structural – General Maintenance/Inspection	All actions related to performing non-complex, minor repairs or inspections of tunnel structural members and systems.	NO EFFECT
711-7426-02	Structural – Tunnel Liner	All actions related to repairing or replacing tunnel liner systems.	NO EFFECT
711-7426-03	Structural – Tunnel Roof/Ceiling Girders	All actions related to performing moderately complex and complex repairs to or replacement of tunnel roof material, systems or ceiling girders.	NO EFFECT
711-7426-04	Structural – Tunnel Cross Passageway	All actions related to performing moderately complex and complex repairs to or replacement of tunnel cross passageways.	NO EFFECT
711-7426-05	Structural – Tunnel Interior Walls	All actions related to performing moderately complex and complex repairs to or replacement of interior tunnel walls.	NO EFFECT
711-7426-06	Structural – Tunnel Portals	All actions related to performing moderately complex and complex repairs to or replacement of tunnel portals.	NO EFFECT
711-7426-07	Structural – Invert Concrete Slab on Grade	All actions related to performing moderately complex and complex repairs to or replacement of concrete tunnel invert slabs.	NO EFFECT
711-7426-08	Structural – Tunnel Invert Girders	All actions related to performing moderately complex and complex repairs to or replacement of tunnel invert girders.	NO EFFECT
711-7426-09	Structural – Tunnel Joints	All actions related to performing moderately complex and complex repairs to or replacement of tunnel liner joint systems.	NO EFFECT

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711-7426-10	Structural – Tunnel Structure Members	All actions related to performing minor, miscellaneous tunnel structural or general maintenance repairs.	NO EFFECT
711-7427-01	Mechanical Systems – General Maintenance/Inspection	All actions related to performing non-complex, minor repairs or inspections of tunnel mechanical infrastructure systems.	NO EFFECT
711-7427-02	Mechanical Systems – Ventilation Systems and Fans	All actions related to performing moderately complex and complex repairs to or replacement of tunnel ventilation systems and fans.	NO EFFECT
711-7427-03	Mechanical Systems – Drainage and Pumping Systems	All actions related to performing moderately complex and complex repairs to or replacement of tunnel potable and ground water drainage systems including mechanical pumps.	NO EFFECT
711-7427-04	Mechanical Systems – Emergency Generator Systems	All actions related to performing moderately complex and complex repairs to or replacement of tunnel emergency generator systems.	NO EFFECT
711-7428-01	Fire/Life Safety Systems – General Maintenance/Inspection	All actions related to performing non-complex, minor repairs or inspections of tunnel fire, life safety, and security infrastructure and systems.	NO EFFECT
711-7428-02	Fire/Life Safety Systems – Carbon Monoxide Monitoring System	All actions related to performing moderately complex and complex repairs to or replacement of tunnel carbon monoxide monitoring systems including mechanical exhaust duct work and electrical wiring.	NO EFFECT
711-7428-03	Fire/Life Safety Systems – Tunnel Fire Protection System	All actions related to performing moderately complex and complex repairs to or replacement of tunnel fire protection systems.	NO EFFECT
711-7428-04	Fire/Life Safety Systems – Emergency Communication System	All actions related to performing moderately complex and complex repairs to or replacement of tunnel emergency communication systems.	NO EFFECT
711-7428-05	Fire/Life Safety Systems – Operations and Security Systems	All actions related to performing moderately complex and complex repairs to or replacement of tunnel operations and security systems.	NO EFFECT
711-7428-06	Fire/Life Safety Systems – Fire Protective Coatings	All actions related to performing moderately complex and complex repairs to or replacement of tunnel protective fire coating systems and appurtenances.	NO EFFECT
711-7428-07	Fire/Life Safety Systems – Concrete Protective Coating Systems	All actions related to performing moderately complex and complex repairs and removal of existing protective coatings or replacement of tunnel protective concrete coating systems.	NO EFFECT
711-7429-01	Other – Tunnel Activities	Miscellaneous and incidental tunnel maintenance activities such as minor non-complex incidental repairs to tunnel systems assuming staging and other support activities are not conducted in or near wetlands.	NO EFFECT
711-7425-01 thru 711-7460-01	Bridge Maintenance Cost Functions	Detailed description of bridge maintenance assemblies is in “Procedures and standards for Bridge Maintenance” (Pub 55)	MAY AFFECT
711-7425-01	Repair/Replace – Bridge over Eight-Foot Length	The work area includes the entire structure including footings, abutments, wingwalls, superstructure, and deck. Also, any incidental roadway approach work.	MAY AFFECT
711-7431-01	Cleaning/Flush Deck	Work area includes entire deck between the backs of the abutment backwalls. Remove all salt, anti-skid, dirt, debris and other deleterious material by manually first and then by flushing. Seasonal restrictions are recommended over trout streams from April 10 to June 10.	NO EFFECT
711-7431-02	Cleaning/Flush – Bearing and Super Structure	Work area includes entire deck between the backs of the abutment backwalls. Remove all salt, anti-skid, dirt, debris and other deleterious material by manually first and then by flushing. Seasonal restrictions are recommended over trout streams from April 10 to June 10.	NO EFFECT

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711-7431-03	Cleaning/Flush Open Grid	Work area includes entire deck between the backs of the abutment backwalls. Remove all salt, anti-skid, dirt, debris and other deleterious material by manually first and then by flushing. Seasonal restrictions are recommended over trout streams from April 10 to June 10.	NO EFFECT
711-7432-01	Painting – Spot	Superstructure painting, usually less than 35% of structure. Scaffolding or work platforms may be used, and any hand or power tools for cleaning.	NO EFFECT
711-7432-02	Painting – Full	Generally, run through the full permitting process	MAY AFFECT
711-7432-03 thru 711- 7432- 06	Painting Superstructure – Spot Inorganic Zinc/ Aluminum Mastic	Spot painting of the superstructure and substructure.	NO EFFECT
711-7433-01	Seal – Joints (Liquid Only)	Joints can be located anywhere within the entire length of the bridge between the backs of the backwalls. Poured joint material.	NO EFFECT
711-7433-02	Repair Joints	Repair or replace existing joints.	NO EFFECT
711-7433-03	Repair/Replace Joints – Strip Seals	Repair or replace existing joint strip seals	NO EFFECT
711-7434-01	Repair/Replace Guiderail/ Median Barrier/Parapet	Conducted on the existing bridge structure. May include limited demolition.	NO EFFECT
711-7435-01	Lubricate Bearings	Repair or replacement of various bridge superstructure components. Conducted from the existing bridge.	NO EFFECT
711-7435-02	Repair/Replace Bearings	Repair or replacement of various bridge superstructure components. Conducted from the existing bridge.	NO EFFECT
711-7435-03	Repair/Replace – Pedestal/ Seat	Repair or replacement of various bridge superstructure components. Conducted from the existing bridge.	NO EFFECT
711-7442-01 thru 711- 7442- 02	Repair/Replace – Approach Slab	Repair or replacement of various bridge superstructure components. Conducted from the existing bridge.	NO EFFECT
711-7443-01 thru 711- 7443- 06	Repair/Replace Deck	Repair or replacement of various bridge superstructure components. Conducted from the existing bridge.	NO EFFECT
711-7444-01	Repair/Replace Deck Drainage	Repair or replacement of various bridge superstructure components. Conducted from the existing bridge.	NO EFFECT
711-7446-01 and 711- 7446- 02	Repair/Replace – Superstructure Member and Uncoated Weathering Steel	This activity may involve temporary piers, jacks or other supports beneath the bridge.	MAY AFFECT
711-7447-01	Repair/Replace – Truss Member	This activity may involve temporary support beneath the bridge.	MAY AFFECT
711-7448-01	Repair/Replace Backwalls	These activities may involve extensive ground disturbance.	MAY AFFECT
711-7448-02	Replace/Repair Substructure	These activities may involve extensive ground disturbance.	MAY AFFECT

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711-7448-03	Maintenance – Underpinning	These activities may involve extensive ground disturbance.	MAY AFFECT
711-7448-04	Other Substructure	These activities may involve extensive ground disturbance.	MAY AFFECT
711-7449-01 and 711-7449-02	Concrete Deck Overlay – Epoxy/PPC Overlay	Activities on concrete bridge deck.	NO EFFECT
711-7450-01	Maintenance – Repointing	Masonry repair is often done by hand but may involve removal of riprap or other protective material, cofferdams, or excavation to access bridge substructure.	MAY AFFECT
711-7451-01	Repair/Replace Slopewalls	May require excavation and instream/in wetland activity.	MAY AFFECT
711-7452-01 and 711-7452-02	Repair/Replace – Culverts	May require excavation and instream/in wetland activity.	MAY AFFECT
711-7453-01 and 711-7453-02	Erosion Protection – Stream Bed/Rock/Deflector Scour Hole Backfill	May require excavation and instream/in wetland activity.	MAY AFFECT
711-7453-03	Erosion Protection – Channel Cleaning	May require excavation and instream/in wetland activity.	MAY AFFECT
711-7454-01	Const./Install – Temporary Supports	May require excavation and instream/in wetland activity.	MAY AFFECT
711-7455-01	Repair/Replace Slabs/Box Culvert	May require excavation and instream/in wetland activity.	MAY AFFECT
711-7457-01 and 711-7457-02	Brushing, Tree Removal, Manual and Mechanized	Vegetation maintenance in proximity to bridge structure	MAY AFFECT
711-7459-01	Other Bridge Activities	Restricted to maintenance activities that are non-structural.	NO EFFECT
711-7490-01	Bridge – Structure On-site Review of Combustible Materials under the Bridge	All actions related to the county maintenance personnel performing on-site reviews of combustible materials under bridge structures. This includes all actions related to performing reviews, completing and achieving material findings.	NO EFFECT
711-7490-02	Bridge – Structure Removal of Combustible Materials Under Structure	All actions related to the removal and disposal of combustible materials located beneath bridges or adjacent to bridges or other structures (e.g., retaining walls). Contract disposal of materials is included in this activity.	NO EFFECT
711-7800-01	SCM Visual Screening	Visual screening is a non-invasive inspection of a stormwater control measure (SCM) using visual indicators to quickly identify common problems.	NO EFFECT
711-7800-02	SCM Condition Assessment	A condition assessment is an in-depth inspection of a stormwater control measure (SCM) using minimally invasive techniques to establish a baseline condition and uncover any issues that may affect performance.	NO EFFECT
711-7801-01	SCM Earthwork	Earth disturbance to repair or rebuild a stormwater control measure (SCM) and its appurtenances.	NO EFFECT

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711-7801-02	SCM Material Removal	Removal and disposal of trash, debris, and sediment that collects in and around the stormwater control measure (SCM).	NO EFFECT
711-7801-03	SCM Storm Sewer Cleaning	This activity is for the cleaning of storm sewer system elements (e.g., catch basins/inlets and pipes) that are connected to a stormwater control measure (SCM) using mechanized means.	NO EFFECT
711-7801-04	SCM Fencing and Signs	Any action related to maintaining fencing and signs for stormwater control measures (SCMs).	NO EFFECT
711-7801-05	SCM Structure upkeep and Repairs	Repair and general upkeep of structural and mechanical components of a stormwater control measure (SCM).	NO EFFECT
711-7801-06	SCM Earth Stabilization	Corrective maintenance activities for the installation or application of ground cover on earthen areas of stormwater control measures (SCMs) to minimize future erosion potential.	NO EFFECT
711-7801-07	SCM Vegetation Management	Preventative and corrective control of vegetative growth in and around the stormwater control measure (SCM).	NO EFFECT
711-7801-08	SCM Manufactured Treatment Devices	Any maintenance activities associated with (proprietary) manufactured treatment devices.	NO EFFECT
711-7801-10	SCM Replacement	Major restoration work to restore stormwater control measure (SCM) function, including the replacement of all or part of the SCM.	NO EFFECT
711-7801-11	SCM Other	SCM maintenance activities that do not fit within the other SCM maintenance assemblies.	NO EFFECT
711-9003-01	Under-Utilized Rented Equipment	Accounting coding for tracking hours not used on rental equipment.	NO EFFECT
711-9812-01	In-Service Training	Accounting coding for tracking on-the-job training for non-core equipment training/ certification.	NO EFFECT
712-7521-01	Plowing, Applying Material/ Chemicals - Mechanized	The removal of snow and ice from roadways, ramps, intersections and gore areas include plowing, snow blowing, cutting ice, and applying material/chemicals.	MAY AFFECT *Consultation Completed
712-7522-01	Snow and Ice Control - Other	Snow season work that is not included in activity 712-7521-01 such as installing snow fence; mixing winter materials; transferring/receiving material; cleanup of storage facilities; towing, dry runs, stand by, removing, installing or verifying the spreader; shoveling snow at the stock site; tire chains; other snow preparatory work; etc.	MAY AFFECT *Consultation Completed
712-7523-01	Anti-Icing Operations	This assembly includes all actions related to applying anti-icing chemicals to pavement surface prior to the storm to prevent bond forming. This assembly should not be used to charge for pre-wetting of solid material.	MAY AFFECT *Consultation Completed
712-7523-02	De-Icing Operation	Pertains to actions related to applying liquid De-Icing chemicals.	NO EFFECT
712-7524-01	Salt Brine Manufacture/ Distribution	This assembly includes all actions related to the manufacturing and distribution of salt brine.	NO EFFECT
712-7522-01	Snow and Ice Control - Other	Snow season work that is not included in activity 712-7521-01 such as installing snow fence; mixing winter materials; transferring/receiving material; cleanup of storage facilities; towing, dry runs, stand by, removing, installing or verifying the spreader; shoveling snow at the stock site; tire chains; other snow preparatory work; etc.	MAY AFFECT *Consultation Completed
712-7523-01	Anti-Icing Operations	This assembly includes all actions related to applying anti-icing chemicals to pavement surface prior to the storm to prevent bond forming. This assembly should not be used to charge for pre-wetting of solid material.	MAY AFFECT *Consultation Completed

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712-7523-02	De-Icing Operation	Pertains to actions related to applying liquid De-Icing chemicals.	NO EFFECT
712-7524-01	Salt Brine Manufacture/ Distribution	This assembly includes all actions related to the manufacturing and distribution of salt brine.	NO EFFECT
713-7611-01	Traffic Line Painting – Mechanized Yellow	This assembly includes all actions related to the painting or repainting of yellow traffic lines using line striping machines.	NO EFFECT
713-7612-01	Traffic Line Painting – Mechanized	The painting or repainting of traffic lines using line striping machines.	NO EFFECT
713-7613-01	Pavement Marking – Hand Operated Machine	Marking the pavement using hand-operated machines and/or hand-held rollers, such as painting gore areas, certain types of ramps, and other areas not readily accessible to the department's large paint trucks.	NO EFFECT
713-7614-01	Raised Pavement Markers	The repair/replacement of reflectorized pavement markers such as removing and replacing damaged reflectors. (Could be raised, flush, or recessed.)	NO EFFECT
713-7615-01	Pavement marking paint line eradication	The removal of traffic markings.	NO EFFECT
713-7616-01	Pavement marking thermoplastics installation	All actions to installation of thermos-plastic markings.	NO EFFECT
713-7617-01	Repair Paint Machines – Crew Only	The repair of paint machines by the paint crew only.	NO EFFECT
713-7618-01	Pavement Marking Small Paint – Waterborne Site	This assembly includes all actions related to the Small Paint Program – WATERBORNE	NO EFFECT
713-7618-02	Pavement Marking Small Paint – Durable	This assembly includes all actions related to the Small Paint Program – DURABLE.	NO EFFECT
713-7619-01	Other Pavement Marking activities	Any miscellaneous pavement marking activity which cannot be properly charged to the previous marking codes. Examples include transferring materials between counties, traffic line layouts, winterization of the large paint machines, etc.	NO EFFECT
713-7621-01	Construction Detour and Other Temporary Signs	General Maintenance Department Force projects. This includes all actions related to the erection, maintenance and removal of construction, detour and other temporary Signs.	NO EFFECT
713-7622-01	Delineations, Hazard	The erection, maintenance, and removal of delineators and hazard markers.	NO EFFECT
713-7623-01	Sign Reviews	All actions related to the review of signs in the field for purposes of determining maintenance needs.	NO EFFECT
713-7624-01	Signs, Repair/Replace Permanent Signs Under 16 Sq. Feet	Includes all actions related to the erection, maintenance and removal of permanent signs under and over 16 square feet.	NO EFFECT
713-7624-02	Signs, Repair/Replace Permanent Signs Over 16 Sq. Feet	Includes all actions related to the erection, maintenance and removal of permanent signs under and over 16 square feet.	NO EFFECT
713-7625-01	SR and Segment Markers	All actions related to the erection, maintenance and removal of SR and Segment Markers.	NO EFFECT

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713-7629-01	Other – Sign Activities	All actions related to any miscellaneous sign activity which cannot be properly charged to one of the previous sign codes, such as mechanical post straightening with the straightener, sign cleaning and brushing to improve sight distance of signs.	NO EFFECT
713-7629-02	Outdoor Advertising Devices – Nuisance Objects	All actions related to the removal of nuisance objects (small temporary signs) that are encroachments into the right-of-way.	NO EFFECT
713-7631-01	Repair/Removal – Low- tension Cable Barrier (Old Style – Non-Tensioned)	All actions related to the repair or removal of damaged or worn guide-rail cable, posts, cable fittings, etc.	NO EFFECT
713-7631-02	Guide-Rail Repair/Replace – W-Beam; Mechanized	This assembly is all actions related to the repair and/or replacement of damaged or worn W-Beam panels, posts, fittings, etc. This includes extension or installation of any W-Beam guide rail for less than 500 continuous feet.	NO EFFECT
713-7631-03	Guiderrail Repair/Replace Manual	This assembly is all manual actions related to the repair/replacement of all types of guiderrail. Refer to Assemblies 713-7631-01 and 02.	NO EFFECT
713-7631-04	Guider Rail Upgrade Remove Cable/Replace with W-Beam; Mechanized	This assembly is all actions related to removing cable guiderrail and replacing it with W-Beam Guiderrail.	NO EFFECT
713-7631-05	Guiderrail Resetting W-Beam Guide Rail; Mechanized	This assembly is all actions related to removing and resetting existing guiderrail and posts. Resetting guiderrail consists of relocation existing posts and reattaching existing panels. Do not reuse timber posts. This includes resetting W-Beam guiderrail for less than 500 continuous feet.	NO EFFECT
713-7632-01	Guiderrail Removal	This assembly is all actions related to the permanent removal of unnecessary guiderrail when guiderrail is not being replaced.	NO EFFECT
713-7632-02	Guiderrail Removal – Dept. Force/Contract install	This assembly is all actions related to the removal of guiderrail by Department Forces where the guiderrail is to be installed by contract.	NO EFFECT
713-7633-01	High-Tension Cable Median Barrier	This assembly is all actions related to repair of damaged High-Tension Cable Median Barrier including but not limited to cable adjustment, loading and transporting of new High-Tension Cable Median Barrier for storage, mechanized straightening of rails with post straightener, all repair/replacement of end treatments associated with bridges, repair/replacement of impact attenuation devices, etc.	NO EFFECT
713-7639-01	Median Barrier/Guiderrail Impact Attenuation Devices; Other	This assembly is all actions related to miscellaneous median barrier, guiderrail and impact attenuation devices including but not limited to painting, cable adjustment, loading and transporting of new guiderrail for storage, mechanized straightening of rails with post straightener, all repair/replacement of end treatments associated with bridges, repair/replacement of impact attenuation devices, etc.	NO EFFECT
713-7671-01	Traffic Services – Lighting Highway, Bridge and Sign Lighting Systems	All actions relate to the servicing and maintenance of permanent highway, bridge sign, and navigation systems by department employees and outside contractors.	NO EFFECT
713-7681-01	Sweeping; Manual/ Mechanized	This assembly is all actions related to sweeping and proper disposal of materials.	NO EFFECT
713-7682-01	Deer Removal	This assembly is all actions related to the removal of deer carcasses. All other animal removal will be charged to assembly 713-7689-01 “Traffic – Incidental Services – Other”.	NO EFFECT
713-7683-01	Traffic Services- Homeland Security	This assembly is all actions relative to any miscellaneous incidental services related to preparing, responding and demolishing to Federal or State authorities in response to Homeland Security events. This includes the setup, maintenance and demobilization of traffic control devices, manning traffic control points, security inspections of PennDOT facilities, and other activities performed at the request of officials. Homeland Security Events include Presidential visits, Gubernatorial events, International Dignitary events, or special security events.	NO EFFECT

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

713-7689-01	Other – Incidental Service Activities	This assembly is all actions relative to any miscellaneous incidental service activities such as dead animal removals, right-of-way fence maintenance, and other incidental highway services.	NO EFFECT
713-9003-01	Under Utilized Rented Equipment	Assembly is to be utilized when all hours of guaranteed equipment rental are not used.	NO EFFECT
713-9721-01	Travel Time	For all travel time between the assembly and production site.	NO EFFECT
713-9721-02	Weather Delays	All time for weather delays when performing actions related to assemblies 713-7611-01 and 713-7612-01.	
714-7711-01	Mowing	Manual roadside mowing activities such as mowing with power driven type mower(s), string trimmers or other hand tools. This activity is normally performed at intersections where small traffic islands exist, or at other similar areas where larger power mowers cannot operate efficiently. This activity should not be necessary under guiderail, around delineations and signs as the non-selective herbicide program under cost function 7712-01 is designed to accomplish this vegetation control.	MAY AFFECT
714-7711-02	Mowing – Tractor Type: “L”, “F”, and “G” Mechanized	Mechanized roadside mowing activities including mow-line establishment, mowing, supervision or inspection, removing litter and mowing obstructions. This activity is performed in the medians, interchanges and along the roadway to control the height of grown of grass and for the purpose of preventing the growth and spread of prohibited weeds and other undesirable plant growth.	MAY AFFECT
714-7711-03	Plant Growth Reg. (PGRs) Herbicide Application	The application of plant growth regulators for the purpose of inhibiting seed head formation, reducing mechanical cutting frequencies, and for the control of broadleaf weeds. This activity is recommended primarily for turf areas requiring frequent cutting and traffic islands or other plots that require manual mowing. The applications must be made by a certified pesticide applicator, a trained application technician or any other person provided by a certified pesticide applicator who is present at the work site and within communication distance.	MAY AFFECT
714-7711-04	Conservation Mowing Type C Mechanized	Mechanized roadside mowing activities including mow-line establishment, mowing, supervision or inspection, removing litter and mowing obstructions. This activity is performed in interchanges along the roadway beyond the clear zone to control the growth of woody vegetation and for the purpose of preventing the growth and spread of prohibited weeds and other undesirable plant growth, and for the purpose of maintaining early succession (meadow) pollinator habitats.	MAY AFFECT
714-7712-01	Herbicide Application – Non- Selective	The application of non-selective herbicides. This includes the application under guiderails and around delineators, signposts, and similar areas where bare soil is desirable, and erosion will be no problem. There are two types of non-selective herbicides: residual (through the roots) and foliar (through the leaves). The application must be made by a certified pesticide applicator, a trained application technician, or any other person provided with a certified pesticide applicator who is at the work site and within communication distance.	MAY AFFECT
714-7713-01	Herb Application – Broadcast Foliage	All actions related to the application of selective herbicides for the control of undesirable weeds and woody plant growth in lawn and roadside areas. Herbicides for this activity are selective in their effects on various plants when used in accordance with label directions. Various herbicides are used in the performance of this assembly. Weed and brush control applications produce the best results when applied to the foliage of plants. The application must be made by a certified pesticide applicator, a trained application technician, or any other person provided with a certified pesticide applicator is at the work site and within communication distance.	MAY AFFECT
714-7714-01	Herbicide Application Broadcast Chemical Trimming (Fosamine)	This assembly is the application of selective herbicides for the control of undesirable woody growth or any part thereof. This includes utilizing Fosamine (Krenite) for foliage applications made with power sprayers. The application must be made by a certified pesticide applicator, a trained application technician, or any other person provided with a certified pesticide applicator who is at the work site and within communication distance.	MAY AFFECT
714-7715-01	Brushing, Selective Thinning, Tree Removal, and Tree Trimming - Manual	This assembly is the removal and/or trimming of brush, trees, and woody vegetation including all actions related to tree trimming, brushing, selective thinning, and tree removal using the appropriate power and hand tools and the removal of stumps where required. Unless grubbing or stump removal are planned, apply a basal bark herbicide mixture to the cut surface of all live stumps, including	NO EFFECT

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

		the root collar and exposed roots.	
714-7715-02	Brushing, Tree Trimming, and Tree Removal; Mechanized	This assembly is the mechanical removal and/or trimming of brush, trees, and woody vegetation including all methods and procedures described under 714-7715-01 with the use of hydraulic tools, boom arm mowers, or trimmer lift equipment.	NO EFFECT
714-7715-03	Herbicide Basal Bark and Cut Stump	This is the application of Basal Bark and cut stump treatments. This includes all herbicide applications related to the elimination of unwanted woody plants, stump re-sprouts, and root sprouting through basal bark and cut stump treatment methods. Although the basal bark method may be applied at any time of the year, for highway purposes it is also most applicable to the dormant season. The application must be made by a certified pesticide applicator, a trained application technician, or any other person provided with a certified pesticide applicator who is at the work site and within communication distance.	NO EFFECT
714-7716-01	Revitalization – Seeding and Soil Supplement; Mechanized	This assembly is the revitalization of roadside locations, including the furnishing and placing of seeds, soil supplements and mulch to roadside locations stabilizing roadway embankments and compliance with current erosion and sedimentation control mandates.	NO EFFECT
714-7717-01	Wildflowers (formerly Wildflower Planting)	This assembly is the furnishing and placing of seeds of various plants which have growth and flowering characteristics desirable for highway roadsides, the maintenance of wildflower sites, and the propagation and enhancement of naturally occurring “wildflowers.” This will provide acceptable roadside cover while maintaining a reduced mowing schedule and will provide the necessary erosion and sediment control properties.	NO EFFECT
714-7717-02	Pollinator Meadows	Site preparation and establishment include any related tree/shrub removal and herbicide application, furnishing and placing of annual and perennial pollinator seed.	NO EFFECT
714-7731-01	Maintenance of Interstate Roadside Rests with All-Weather Buildings	The maintenance of roadside rests with all-weather buildings such as mowing; fertilizing; watering; raking; mulching; and herbicide weed control on the grounds as well as repairing, replacing, repainting, cleaning, and periodic equipment servicing of building and equipment. The maintenance of signs, litter containers, and snow and ice control are also included as well as picking up litter, litter disposal, and cleaning restrooms.	NO EFFECT
714-7732-01	Maintenance of Roadside Rest, Table Sites, Overlooks, Scenic Feature, and Park-and-Ride Lots	This assembly includes all actions related to the maintenance of all other roadside rests, roadside table sites, and overlooks not covered under activity 714-7731-01. This includes roadside table sites, overlooks, and park-and-ride lots. Growing; fertilizing; watering; raking; mulching; herbicide weed control on the grounds in addition to repairing, replacing, and cleaning of the temporary facilities placing as well as maintenance of roadside tables, signs, litter containers, junkyard screenings (both vegetative and structural), and snow and ice control are included in this assembly. Also included is litter pickup and disposal and sanitary service purchase contracts.	NO EFFECT
714-7735-01	Roadside Litter Pickup and Debris Removal Routine	This assembly includes all actions related to Department Force litter pickup and debris removal (within established highway right-of-way limits). This includes litter and debris pickup and removal generated by the motoring public and normal weather and wind conditions. Contract disposal costs are also included in this activity. Pickup of debris, etc., resulting from ice storms or high wind conditions should be charged to Assembly 711-7351. This does not include three special litter pickup and debris removal programs: Great PA Cleanup (714-9813-01, Litter Brigade (714-9848-01) and Adopt-A-Highway (714-9849-01).	NO EFFECT
714-7735-02	Roadside Tire Remnant Removal – Debris Removal	This assembly includes all actions related to tire remnant removal on interstate and interstate look-alike highways.	NO EFFECT
714-9813-01	Special Roadside Litter Pick Up and Debris Removal Great PA Cleanup	This assembly is the annual Great PA Clean-up (GPC) campaign. This includes all actions related to the annual Great PA Clean-up campaign scheduled from March 1 to May 31. This is primarily an educational/public participation activity focusing on refuse bag retrieval and disposal.	NO EFFECT
714-9848-01	Special Roadside Litter Pick Up and Debris Removal Litter Brigade	This assembly is the Adult and Juvenile Litter Brigades. This includes all actions related to refuse bag retrieval and disposal.	NO EFFECT

Table 2. Maintenance Assemblies with USFWS Programmatic Determinations on Bog Turtles

714-9849-01	Special Roadside Litter Pick Up and Debris Removal Adopt-A-Highway	This assembly is the Adopt-A-Highway (AAH) program. This includes all actions related to the program focusing on refuse bag retrieval and disposal. This includes the collection of the refuse bags from volunteers as well as the Inmate Community Work Program.	NO EFFECT
719-9829-01	Maintenance Administration	Accounting coding assembly for employee salaries, wages, leave, subsistence, and other expenses of those employees in the County, Maintenance Districts, and Central Offices whose primary duties are related to administration and who, for payroll purposes, are regularly assigned to Program 719.	NO EFFECT
719-9851-01	Hazardous Waste Inventory Control	This assembly includes all actions related to the removal of hazardous waste material generated by all programs, except Program 813 (fuel and petroleum related), by contract to professional waste disposal contractors. This is for disposal of batteries, light bulbs, spray cans, and similar items.	NO EFFECT

Note: Refer to PennDOT Publication 23, Maintenance Manual for additional detailed descriptions.

2.2 May Affect

To be eligible under this programmatic, transportation activities other than those having No Effect under Section 2.1⁵ must include AMMs. When a transportation activity may affect the bog turtle, PennDOT/FHWA must determine whether the effect will be adverse.

When conducted within 300 feet of wetlands, the specific transportation maintenance activities identified in Table 2 may affect the bog turtle and require endangered species consultation. These activities are eligible for the streamlined consultation process provided through this programmatic consultation. Maintenance activities⁶ with potential for conflict with bog turtles are identified within the detailed assembly descriptions within the programmatic BO. Applicable AMMs (**Table 5**) must be implemented for these activities to programmatically avoid potential adverse effects to the species. A summary of the applicable AMMs should be reviewed during scheduled maintenance training sessions, weekly planning meetings, and at the beginning of the maintenance activity.

In most cases, the application of the appropriate prescribed and relevant AMMs will result in a “not likely to adversely affect (NLAA)” determination.

Transportation actions for which the species has been determined to be absent from the action area (including the 300-foot buffer around the limit of disturbance/limit of indirect effect) through the performance of Phase II/Phase III species surveys approved by the USFWS would also substantiate a NLAA determination.

⁵ Reminder: If wetlands are not present with 300 feet of the transportation activity, then the transportation activity has no effect on the bog turtle.

⁶ Maintenance activities are also referred to as “assemblies”.

Transportation activities that are “likely to adversely affect (LAA)” are typically those associated with:

- Where the relevant prescribed AMMs cannot be implemented, for example an inability to implement a seasonal restriction appropriately; or
- Result in permanent effects to potential hibernacula microhabitat; or
- Result in permanent effects to potential foraging habitat in proximity to hibernacula microhabitat; or
- When permanent modifications to the hydrology of supporting habitat will occur; or
- Introducing vehicular traffic in proximity to an occupied or assumed occupied habitat where previously there was no traffic; or
- Increasing pedestrian traffic in proximity to an occupied or assumed occupied habitat leading to an increased risk of poaching and species interaction with domesticated animals.

Transportation activities with these effects may result in a “take” of bog turtles and must be mitigated with the application of additional compensatory AMMs. In most cases these transportation activities are still eligible for processing through the bog turtle programmatic consultation. However, USFWS could find these transportation actions to be ineligible for the programmatic and require individual formal consultation (if that determination is made).

Table 3 summarizes the AMMs to be applied to transportation activities that may affect the bog turtle. **Table 4** provides the AMM descriptions.

The standard operating procedures for submission and review of transportation activities is essentially the same for NLAA and LAA as detailed in **Section 3**.

Table 3. Transportation Action Effects and Applicable Avoidance and Minimization Measures (AMMs)

Programmatic Category (PC#)		Description	AMMs 1-9	AMM 10	AMM 11	AMM 12	AMM 13	AMM 14	AMM 15	AMM 16	AMM 17	AMM 18	AMM 19 Required for Mitigation
PC1	Temporary Hibernacula Habitat Effects	Actions where temporary effects to potential hibernacula are anticipated to occur without any hydrologic modification.	X	X	--	X	X	X	X	X	X	--	X
PC2	Permanent Hibernacula Habitat Effects	Actions where permanent effects to potential hibernacula microhabitat are anticipated to occur without any hydrologic modification.	X	X	--	X	X	X	X	X	X	X	X
PC3	Temporary Foraging Habitat Effects Inactive Season Work	Actions where temporary effect to potential foraging habitat are anticipated to occur during the inactive bog turtle season without any hydrologic modification.	X	--	X	--	--	--	--	--	--	--	--
PC4	Temporary Foraging Habitat Effects Active Season Work	Actions where temporary effect to potential foraging habitat are anticipated to occur during the active bog turtle season without any hydrologic modification.	X	--	--	X	X	X	X	X	X	X	--
PC5	Permanent Foraging Habitat Effects Inactive Season Work	Actions where permanent effects to potential foraging habitat are anticipated to occur during the inactive bog turtle season without any hydrologic modification.	X	--	X	--	--	--	--	--	--	--	X
PC6	Permanent Foraging Habitat Effects Active Season Work	Actions where permanent effects to potential foraging habitat are anticipated to occur during the active bog turtle season without any hydrologic modification.	X	--	--	X	X	X	X	X	X	X	X
PC7	Upland/Stream Corridor Habitat Effects Active Season Work	Actions which will occur within stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat during the active bog turtle season with exclusionary measures. No permanent hydrologic impacts to aquatic habitats are anticipated to occur.	X	--	--	X	X	X	X	X	X	--	--
PC8	Upland/Stream Corridor Habitat Effects Inactive Season Work	Actions which will occur within stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat during the inactive bog turtle season. No permanent hydrologic impacts to aquatic habitats are anticipated to occur.	X	--	X	--	--	--	--	--	--	--	--
PC9	Permanent Hydrologic Effects	Actions where the hydrology of supporting habitat will be permanently altered by the action, resulting in take due to modified hydrology.	X	X	--	X	X	X	X	X	X	X	X

Take Avoidance and Minimization Measure (AMM) Descriptions

For actions to be covered by the programmatic consultation, specific AMMs related to the species will be implemented where applicable (see **Tables 3 & 4**). The AMMs included in the analysis, if executed under appropriate circumstances, are expected to reduce potential impacts of the stressors. In some cases, impacts will be reduced to levels that are insignificant (the magnitude or size of the impact will never reach the scale where take occurs) or discountable (the probability is extremely unlikely for take to occur) and, therefore, not likely to adversely affect the species. In other cases, some level of take of the species will be unavoidable even with the application of AMMs but will be offset through a compensatory AMM.

The AMMs will be applied to the actions encompassed by the programmatic consultation unless the action has been determined to be No Effect, or a Phase II Presence/Probable Absence Survey or Phase III Trapping Survey conducted by a qualified species surveyor has determined that the species is not likely to be present within the project area and the USFWS has concurred with these findings.

The implementation of AMMs 1 to 9 is required for all other actions with the use of the programmatic consultation, while AMMs 10-19 are only required for specific programmatic categories. The application of AMMs acknowledges the presence of potential species-supporting habitat and the confirmed or assumed presence of the species within the action area of the transportation activity. **Table 4** provides a summary of the Programmatic Category Actions and the necessary AMMs for application with those actions.

Table 4. Transportation Avoidance and Minimization Measure Descriptions (AMMs)

AMM	DESCRIPTION
<i>*AMMs 1 – 9 Required for All May Affect Transportation Actions Including May Affect Maintenance Activities</i>	
1	Ensure that all wetland, bog turtle habitat, and species surveyors, operators, employees, and contractors working in areas of known or assumed occupied bog turtle habitat are aware of and implement all PennDOT environmental commitments, including all applicable AMMs, PA DEP permit conditions, USACE permit conditions, and Bog Turtle Health Bulletin (2015) / Northeastern PARC (NEPARC) Publication 2022-02 equipment disinfection and infected specimen protocols. The Service/PFBC recognized- qualified bog turtle surveyor will provide guidance on the implementation of field equipment disinfection protocols consistent with USFWS and PFBC requirements. Sensitivity training and briefing materials will be provided to all applicable personnel prior to the initiation of the action. Sensitive resource signage will be placed at the site of the action to notify personnel of the potential presence of the species.

Table 4. Transportation Avoidance and Minimization Measure Descriptions (AMMs)

AMM	DESCRIPTION
2	All work associated with the action shall be conducted in accordance with the Erosion and Sediment Pollution Control Plan approved by the County Conservation District or PA DEP. Erosion and sediment control best management practices will be implemented before, during, and after all land disturbance to prevent the potential for asphyxiation and smothering of bog turtles as well as accidental sedimentation and filling of adjacent wetland habitats that may potentially support the species. All erosion and sediment control features will be properly installed and maintained in accordance with the County Conservation District and PA DEP. The project site will be monitored daily, as is also required for all Chapter 102 and NPDES permitting, to ensure the erosion and sedimentation control practices are implemented and properly maintained, and to identify any project related impacts due to sediment accumulation. The daily inspection may be completed by the on-site environmental monitor/inspector or project foreman.
3	All rock scour protection areas associated with an action will be completed in such a manner that precludes large voids for potential impingement and entrapment of bog turtles. Any voids in the rock scour protection will be choked with smaller rock and mineral material to avoid the creation of potential traps for the species. All rock scour protection areas must be installed and depressed below the appropriate stream water elevation as conditioned by PA DEP authorization. Consider using natural channel stabilization techniques as an alternative to rip-rap scour protection/energy dissipation and bank armoring activities.
4	All storage and dispensing of vehicular fuels and fluids will occur at least 300 feet from any aquatic habitats present. The project site will be monitored daily to ensure spill avoidance/remediation practices are implemented. The daily inspection may be completed by the on-site environmental monitor/inspector or project foreman. If required by the project , a hazardous material construction spill avoidance/remediation plan (Spill Prevention Control and Countermeasure Plan – SPCC Plan) will be developed and implemented during the fulfillment of the transportation action.
5	Project storage and staging areas will be located only in upland areas located as far as possible from wetland/watercourse habitat areas. This shall include all areas required for stockpiles, equipment storage, and parking.
6	All public utilities potentially associated with the action due to the necessary relocation of their services will be notified of the potential presence of the species and their need to consult with the Service and PFBC on their respective relocation activities. Documentation of the public utility coordination will be completed for the project / maintenance activity file.

Table 4. Transportation Avoidance and Minimization Measure Descriptions (AMMs)

AMM	DESCRIPTION
7	High visibility orange construction fencing shall be used to delineate avoidance areas during the action. The fencing will act as a visual warning to prevent construction equipment and personnel from entering and disturbing sensitive areas outside of the project limit of disturbance.
8	To avoid the introduction and spread of invasive species into supporting habitats and minimize the duration of exposed soils, use erosion control blankets made of bio-degradable material on disturbed areas immediately after project completion, and promptly re-vegetate areas of temporary disturbance with native wetland or upland seed mixes dependent on the location of the disturbance. Thoroughly wash construction equipment and vehicles offsite, especially the undercarriage and wheels, before use within 300 feet of supporting habitat. Thoroughly wash temporary crossing measures such as composite matting or timber matting before use within 300 feet of supporting habitat.
9	Specific coordination and construction operating procedures approved by the Service/PFBC shall be implemented if a bog turtle is encountered during preconstruction exclusion surveys, on-site monitoring, or within the vicinity of the limit of disturbance (LOD) during the action (i.e., construction). These specific procedures include the following: ▪ If a turtle is encountered, then all construction activities within 300 feet of the capture will cease immediately. The District Environmental Manager and qualified surveyor will be contacted immediately to inform them of the encounter. ▪ If the turtle appears dead or immobile, then the turtle will be left where it was initially observed. If the turtle appears to be mobile, then efforts will be made to temporarily contain the turtle until the qualified bog turtle surveyor can take possession of it. Temporary containment will consist of placing the turtle in a thoroughly clean bucket that has a depth of more than 18 inches. Pieces of native vegetation and 0.5 to 1 inch of water will be placed in the bucket with the turtle to keep the animal cool and hydrated. The bucket will be placed in a quiet, well- shaded area. The turtle will be handled as little as possible, and temporary containment must not exceed 6 hours. The qualified bog turtle surveyor will take possession of the turtle and identify the species as well as document the capture location and condition of the turtle. The qualified surveyor will conduct a thorough search of the area within and in the vicinity of the limit of disturbance of the action to determine if any other turtles may be in the construction area. The qualified surveyor will also inspect the exclusion barrier fencing and direct any repairs as needed. If there are breaches in the exclusion barrier and/or the turtle is identified as a

Table 4. Transportation Avoidance and Minimization Measure Descriptions (AMMs)

AMM	DESCRIPTION
	bog turtle, then construction will not resume until coordination with the Service and PFBC is completed and all breaches in the exclusion barrier are repaired. If the qualified bog turtle surveyor identifies the turtle species as a bog turtle, then the surveyor will immediately notify endangered species biologists at both the Service and PFBC. The elapsed time for contacting both agencies will be as soon as possible but must not exceed 24 hours. Following the arrival of the qualified bog turtle surveyor at the project site, the turtle must be handled by the biologist according to the recommendations of the Service and PFBC. The qualified surveyor will consult with the Service and PFBC concerning the safe handling and necessary relocation of the turtle outside of the project disturbance area. Construction will resume only after the completion of this consultation. If the qualified bog turtle surveyor identifies the turtle as a species other than the bog turtle, and the turtle appears healthy, then the qualified surveyor will release the turtle unharmed no further than 300 feet from the site of discovery to a safe location outside of the limit of disturbance. Construction may continue once the turtle is relocated If any turtle found appears injured or dead, the qualified bog turtle surveyor will coordinate with the Service and PFBC concerning the safe handling of an injured turtle and the taking of possession of the specimen whether injured or dead by one of these agencies. Construction will resume only at the completion of this coordination. To offset the adverse effects of the take, compensatory mitigation credits are required. Compensatory mitigation will be calculated in accordance with Service credit metrics and coordinated with the USFWS State College Field Office.
<i>AMMs 10 – 19 Required As Specified in Table 3 for Specific Programmatic Category Activities</i>	
10	To avoid the killing, harm, or harassment of brumating bog turtles within hibernacula microhabitat during the species inactive period, the action will be completed during the active season for the species between April 1 and October 31.
11	To avoid the killing, harm, or harassment of bog turtles during the species active period, the action will be completed during the inactive season for the species between November 1 and March 31.
12	To avoid the killing, harm, or harassment of individual bog turtles during the species active period, a preconstruction exclusion survey to remove any bog turtle individuals within the LOD will be conducted by a Service/PFBC recognized-qualified bog turtle surveyor immediately prior to the commencement of the action. Exclusion surveys may also be necessary for the assembly/disassembly of temporary streamflow diversion measures; the placement of rock scour protection materials; and the internal confines of an existing bridge or culvert crossing structure. Survey efforts within stream habitats may include the use of viewing buckets and snorkeling equipment to adequately search underwater habitats associated with existing culvert and bridge crossings, including cut banks and eroded areas

Table 4. Transportation Avoidance and Minimization Measure Descriptions (AMMs)

AMM	DESCRIPTION
	under abutments. Survey efforts within existing culvert pipes may include the usage of cutting tools to dissect the culvert pipe for viewing, or the complete removal of the intact pipe for viewing of the pipe's internal area. Any captured individuals will be relocated outside of the project disturbance area into suitable habitat. The Service/PFBC recognized-qualified bog turtle surveyor will oversee and supervise any necessary vegetation cutting or clearing (4 to 6 inches height) for the effective survey of the excluded area. All exclusionary surveys will be conducted according to the most current Phase 2/Phase 3 survey protocol(s) provided by the Service and PFBC.
13	To avoid the killing, harm, or harassment of individual bog turtles during the species active period, an exclusionary barrier (silt fence, super silt fence, adequate silt sock, sand bag wall, sheeting, Jersey barrier) will be erected immediately following the species exclusionary survey and prior to the commencement of the activity to isolate the disturbance area associated with the action. Sandbag walls, sheeting, Jersey barrier, etc. may be necessary within watercourse channel environments to isolate in- stream disturbance areas. No other construction/maintenance activities may commence until the exclusionary barrier has been installed. The exclusionary barrier is to be installed a minimum of 6-inches into the underlying habitat where appropriate. The installation/removal of the exclusionary barrier must be completed by hand through wetland habitats. The installation/removal of the exclusionary barrier through upland habitats may be completed with the assistance of equipment with prior approval from the Service/PFBC recognized- qualified bog turtle surveyor. The exclusionary barrier shall be installed and removed under the supervision of a Service/PFBC recognized- qualified bog turtle surveyor. While in use, the exclusionary barrier shall be inspected daily to ensure its competency and function. The daily inspection may be completed by the on-site environmental monitor/inspector or project foreman. Straw bales, sandbags, or temporary fencing may be used as temporary barriers at ingress/egress locations to provide access to equipment/personnel through the exclusionary barrier. Should the exclusionary barrier become compromised during its use, then all construction/maintenance activities will cease until an exclusionary survey of the action area has been completed by a Service/PFBC recognized-qualified bog turtle surveyor and the compromise has been remediated. The exclusionary barrier is to be removed immediately following the completion of the action. The Service/PFBC recognized-qualified bog turtle surveyor will ensure that potential pitfalls are not created by trenching associated with the installation and/or removal of the exclusionary barrier.
14	All temporary streamflow diversion measures must be implemented in a manner that will not result in the possible collection and entrainment of species individuals into pumping equipment.

Table 4. Transportation Avoidance and Minimization Measure Descriptions (AMMs)

AMM	DESCRIPTION
15	To avoid the killing, harm, or harassment of species individuals during the species active period, a Service/PFBC recognized-qualified bog turtle surveyor shall conduct inspections of wetland spoil materials from excavation areas within core supporting habitat to ensure that species individuals are recovered and relocated. The need for wetland spoil inspection shall be determined by the Service/PFBC recognized-qualified bog turtle surveyor and PennDOT/FHWA.
16	To avoid the killing, harm, or harassment of individual bog turtles during the species active period, a Service/PFBC recognized-qualified bog turtle surveyor may provide continuous monitoring during the active construction. The need for continuous monitoring shall be determined by the Service/PFBC recognized-qualified bog turtle surveyor and PennDOT/FHWA.
17	A Service/PFBC recognized-qualified bog turtle surveyor will be retained throughout the duration of the transportation action to monitor the effectiveness of the implemented AMMs. The surveyor will also provide recommendations to PennDOT and the FHWA concerning the implementation of the necessary measures.
18	To reduce the amount of take associated with the permanent loss of habitat, a salvage survey effort will be undertaken in conjunction with the Service/PFBC to relocate any individuals within the impact area prior to disturbance. Any recovered individuals will be relocated a maximum of 300 feet from the impact area within the same drainage basin.
19	<u>To offset the adverse effects for the permanent loss of supporting habitat and/or incidental take</u> , compensatory species mitigation will be provided. The determination of the amount of compensation to be provided, and the means of achievement will be addressed with the Service on an individual project basis. Potential strategies for compensatory species mitigation could include, but are not limited to, the purchase of credits from a Service approved conservation bank, construction of a PennDOT advanced compensation conservation bank, vegetation management activities at an occupied species site, restoration of supporting hydrology conditions to an altered occupied species site, species passage improvements at an occupied species site associated with documented vehicular conflicts, the provision of nest protection/predator control measures at an occupied species site, and the provision of in lieu fee monetary funds dedicated to habitat management activities at an occupied species site, purchasing and preserving an occupied species site, re-evaluating roadside mowing practices in proximity to an occupied species site, or acquiring and operating an FHWA/PennDOT-sponsored conservation “bundling” site or conservation easement.

3. Standard Operating Procedure (SOP) for Project Submission

Conduct concurrent project/activity reviews of the USFWS Information for Planning and Consultation (IPaC) and Pennsylvania Natural Diversity Inventory (PNDI) database systems. The IPaC and PNDI database reviews will identify whether the potential for project conflicts with the bog turtle may be present. Note that the IPaC and PNDI databases have been refined so that projects or activities in urbanized areas in counties within the range of the species should not result in a conflict. The IPaC database review will also establish a Federal project number and official species list for the proposed project/activity.

It is possible that a project or activity may potentially conflict with more than one federally listed species. It is important to coordinate with the USFWS for all federally listed species identified on the PNDI receipt and USFWS official species list. This programmatic consultation addresses only the bog turtle and additional consultation processes will need to be completed for other species if identified. The PNDI conservation measures may provide additional insights in respect to the conflicts.

When the potential for a conflict with the bog turtle is evident by an IPaC/PNDI environmental review document proceed with determining whether the proposed project/activity adheres to the scope and criteria for the programmatic biological opinion.

The initial step in the process entails completing the Programmatic Project Submittal Form (PSF) found in **Appendix 2**.

The PSF should include a description of the proposed transportation project or maintenance activity under review. The programmatic project evaluation key analysis of the PSF will assist in characterizing the critical project details and programmatic category elements.

Completion of the PSF will require at a minimum, knowledge of the project or maintenance activity details, identification of wetlands within 300 feet of the proposed activity, Phase I habitat assessment results and an accounting of proposed project impacts to wetland and watercourses. The completion of Phase II/Phase III bog turtle survey efforts may also need to be completed prior to the ultimate completion of the PSF if project circumstances dictate.

Following the completion of the evaluation key, a rationalization and determination of the proposed transportation activity's anticipated effects within the framework of the programmatic may be accomplished. The appropriate programmatic determination for the proposed transportation activity should be indicated on the PSF.

No Effect Determinations: If one of these criteria applies, then your project or activity has been programmatically determined to have no effect on the bog turtle. Document the file by completing the PSF and incorporating this result in NEPA and permitting documents as necessary.	1. Project is not located within 300 Feet of a wetland OR the wetlands located within 300 feet have a negative Phase I habitat assessment determination by a Qualified Bog Turtle Surveyor (QBTS), or trained PennDOT/FHWA personnel.
	2. Transportation maintenance activities determined to have No Effect on the species (Table 2).
	3. Project is limited to the Main Channel of watercourse greater than 30 Feet in width with persistent cobble/boulder substrate conditions. (*Determination Does Not Apply to Adjacent Wetlands or Tributaries)
	4. Transportation actions which have been determined by the FHWA/PennDOT to completely avoid all potential effects on the species. Justification of this conclusion needs to be documented for consultation with the USFWS.

May Affect – Not Likely to Adversely Affect Determinations: If one of these criteria applies, then your project or activity has been programmatically determined to may affect but not likely to adversely affect the bog turtle. The PSF and supporting documentation (reports, design plans, etc.) must be submitted to the USFWS for review and concurrence. The USFWS has 14 calendar days to notify PennDOT if they determine a particular project does not meet the criteria for a NLAA. If reviewed before the 14-day period ends, the USFWS reviewer will send an email verification to expedite the project. If PennDOT is not so notified, they may proceed under the programmatic consultation.	1. Negative Phase II/Phase III Bog Turtle Survey Completed for the Project.
	2. Programmatic Category 3 - For projects where temporary effects to potential foraging microhabitat are anticipated to occur during the species inactive seasonal period of November 1 – March 31. Requires application of AMMs 1-9 and AMM 11 for inactive season construction.
	3. For projects which will occur within stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat during the species inactive seasonal period of November 1 – March 31. Requires application of AMMs 1-9 and AMM 11 for inactive season construction.
	4. Transportation maintenance activities determined to May Affect the species (Table 2) that would occur within potential foraging microhabitat or stream corridors/upland habitats during the species inactive seasonal period of November 1 – March 31.

May Affect – Likely to Adversely Affect (LAA) Determinations: If one of these criteria applies, then your project or activity has been programmatically determined to may affect and likely to adversely affect the bog turtle. The PSF and supporting documentation (reports, design plans, etc.) must be submitted to the USFWS for review and concurrence. The USFWS has 30 calendar days to notify PennDOT if they determine a particular project cannot be authorized via the programmatic consultation process. If PennDOT is not so notified, they may proceed under the programmatic consultation.	1. Programmatic Category 1 - For projects where temporary effects to potential hibernacula microhabitat are anticipated to occur. Project must occur during the species active seasonal period of April 1 – October 31. Requires application of AMMs 1-10 and AMMs 12-17. AMM 19 may be required for compensatory mitigation.
	2. Programmatic Category 2 - For projects where permanent effects to potential hibernacula microhabitat are anticipated to occur. Project must occur during the species active seasonal period of April 1 – October 31. Requires application of AMMs 1-10 and AMMs 12-18. AMM 19 is required to compensate for permanent habitat impacts
	3. Programmatic Category 6 - For projects where permanent effects to potential foraging microhabitat are anticipated to occur during the species active seasonal period of April 1 – October 31. Requires application of AMMs 1-9 and AMMs 12- 18 for active season construction. AMM 19 is required to compensate for permanent habitat impacts.

	4. Programmatic Category 9 - For projects where the hydrology of supporting habitat will be permanently affected by the action. Requires application of AMMs 1-10 and AMMs 12-18. AMM 19 is required to compensate for permanent habitat impacts.
	5. Transportation maintenance activities determined to May Affect the species (Table 2) that are consistent with Programmatic Categories 1, 2, 6, or 9.

May Affect – Not Likely to Adversely Affect / Likely to Adversely Affect Determinations Dependent on Project Context: If one of these criteria applies, then your project or activity has been programmatically determined to may affect the bog turtle. The likelihood of resulting adverse effects to the species will depend on the context of the project (magnitude of project impacts, project time duration, etc.) The PSF and supporting documentation (reports, design plans, etc.) must be submitted to the USFWS for review and concurrence. The USFWS has 14 calendar days to notify PennDOT whether the particular project would adversely affect the species and could be authorized via the programmatic consultation process.	1. Programmatic Category 4 - For projects where temporary effects to potential foraging microhabitat are anticipated to occur during the species active seasonal period of April 1 – October 31. Requires application of AMMs 1-9 and AMMs 12 - 18 for active season construction
	2. Programmatic Category 5 - For projects where permanent effects to potential foraging microhabitat are anticipated to occur during the species inactive seasonal period of November 1 – March 31. Requires application of AMMs 1-9 and AMM 11 for inactive season construction. AMM 19 is required to compensate for permanent habitat impacts.
	3. Programmatic Category 7 - For projects which will occur within stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat during the species active seasonal period of April 1 – October 31 with exclusionary measures. Requires application of AMMs 1-9 and AMMs 12- 17 for active season construction.
	4. Transportation maintenance activities determined to May Affect the species (Table 2) that are consistent with Programmatic Categories 4, 5, or 7.

If AMM 19, compensatory mitigation, is required for the project it will be necessary to identify a commercial banker with USFWS approved available credits. If none are available, alternative mitigation approaches should be discussed with the USFWS. Bog turtles should be present or likely to be present at compensatory mitigation sites. For this reason, the preservation of existing bog turtle sites by acquisition, the application of conservation easements or the performance of habitat management/enhancement measures are the most likely alternative mitigation opportunities to be accepted. Prior to preliminary identification of any sites coordinate with the USFWS to identify areas with known bog turtle populations requiring conservation.

The outcomes of application of the AMMs may be either NLAA or LAA. The USFWS review under the programmatic consultation varies depending on whether the effect is a NLAA or a LAA as follows:

- (1) **NLAA.** USFWS has 14 calendar days to notify PennDOT if they determine a particular project does not meet the criteria for a NLAA. If reviewed before the 14-day period ends, the USFWS reviewer will send an email verification to expedite the project. If PennDOT is not so notified, they may proceed under the programmatic consultation. This process is for the verification that the submitted project follows the application of the AMMs resulting in a NLAA rather than a review.
- (2) **LAA.** If through completion of the PSF, the project submittal indicates that the effect of the project is LAA, the USFWS will respond within 30 calendar days to consultation requests completed by PennDOT, submitted prior to project commencement, and accompanied by a complete PNDI and PSF. The USFWS review and response will include verification that the programmatic is applicable and that applicable AMMs are included in the project proposal; describe the anticipated incidental take; and identify any project- specific monitoring and reporting requirements.

Monitoring requirements for LAA outcomes could potentially include:

- (a) Two (1-year and 4-years post-construction) mark/ recapture surveys (using a qualified bog turtle surveyor) on all bog turtle wetlands with impacts (both temporary and permanent) to hibernating habitat following a USFWS approved protocol. The surveys will assess the extent of bog turtle reestablishment in the areas of impact and the overall status of the bog turtle population in the wetlands. The survey report will be submitted to the Service within 30 days of the survey being completed.

- (b) Vegetation monitoring of impacted bog turtle wetlands (known sites and sites with assumed bog turtle presence) annually for a minimum of 3 years post-construction. FHWA/PennDOT will provide annual reports to the USFWS, including written and photo documentation of the site. The report will document the progression of revegetation, noting the types and densities of native and exotic plant species present. The presence of invasive species and/or non- native species within the site will be documented during each vegetation monitoring event. If invasive plants and/or non- native species are found within the former construction area, the applicant will prepare a proposal to implement an invasive species control plan in coordination with the USFWS.

Appendices

Appendix 1

***Large Watercourse Habitats with the Extant Range
that May Include Reaches Greater than 30 feet in
Width with Persistent Cobble/Boulder Substrates***

Appendix 1

Large Watercourse Habitats with the Extant Range that May Include Reaches Greater than 30 feet in Width with Persistent Cobble/Boulder Substrates

Pennsylvania County	Watercourse
Cumberland	Conodoguinet Creek
Adams and York	Conewago Creek
York	Codorus Creek
York	Muddy Creek
York	Yellow Breeches Creek
Dauphin, Schuylkill, and Lebanon	Swatara Creek
Lebanon	Quittapahila Creek
Lebanon and Lancaster	Conewago Creek
Lancaster	Conestoga River
Lancaster	Octoraro Creek
Chester	Brandywine Creek
Berks	Tulpehocken Creek
Montgomery	Perkiomen Creek
Bucks	Neshaminy Creek
Northampton	Bushkill Creek
Monroe	Big Bushkill Creek
Monroe, Northampton, Bucks, and Delaware	Delaware River
Lehigh and Northampton	Lehigh River
Dauphin, York, and Lancaster	Susquehanna River
Berks, Chester, Montgomery	Schuylkill River

Appendix 2

Project Submission Form

Federal Highway Administration & Pennsylvania Department of Transportation
Programmatic Consultation for Bog Turtle Transportation Actions
Project Submittal Form

PROJECT INFORMATION

1. Date of Submission:

2. Project Representative:

Name:

Title:

Organization:

Phone Number:

Email: Jesabitsky@pa.gov

Email:

3. Project Name:

4. PennDOT Engineering District:

5. County:

6. Municipality:

7. PNDI Environmental Review Number:

8. USFWS IPaC Project Number:

9. Project Federal Nexus

☐

FHWA Funding

☐

USACE Permitting

☐

No Nexus

PROPOSED PROJECT / MAINTENANCE ACTIVITY DESCRIPTION

Attach Project / Maintenance Activity Description, Necessary Documentation, Engineering Plans, Habitat Assessment Reports, Survey Reports, etc.

PROGRAMMATIC PROJECT EVALUATION KEY		PROGRAMMATIC PROJECT DETAILS	
1. Does the proposed project / maintenance activity impact wetland or watercourse habitat?	☐	Wetland	
	☐	Watercourse	
	☐	Both	
	☐	Neither	
2. Does the impacted wetland habitat provide supporting habitat for the species?	☐	Yes	
	☐	No	
	☐	N/A	
3. If supporting wetland habitat is to be impacted, are the proposed project impact(s) temporary or permanent in nature?	☐	Temporary	
	☐	Permanent	
	☐	Both	
	☐	N/A	
4. Is the supporting wetland habitat to be impacted hibernacula or foraging microhabitat for the species?	☐	Hibernacula	
	☐	Foraging	
	☐	N/A	
5. Will the project / activity permanently alter wetland hydrology conditions?	☐	Yes	
	☐	No	
6. What is the length of watercourse impacts associated with the project / maintenance activity?*	Temporary Impacts		LF
	Permanent Impacts		LF
7. What is the area of wetland impacts associated with the project / maintenance activity?*	Temporary Impacts		AC
	Permanent Impacts		AC
8. What is the proposed schedule for conducting the project construction / maintenance activities?	(e.g., April 1, 2025, to July 31, 2025)		
9. What is the anticipated duration of the project construction / maintenance activities?	(e.g., 6 weeks)		
10. What is the PFBC Trout Classification for the watercourse?	☐	No Trout	
	☐	Trout Stocked	
	☐	Wild Trout	
	☐	Class A Wild Trout	

PROGRAMMATIC CONSULTATION CONSISTENCY DETERMINATION RATIONALE

NO EFFECT DETERMINATION - ABSENCE OF POTENTIAL SUPPORTING HABITAT CONDITIONS

(X)	Basis of Determination
	A) Project is not located within 300 feet of a wetland <u>OR</u> the wetlands located within 300 feet have a negative Phase I Habitat Assessment determination by a Qualified Bog Turtle Surveyor (QBTS), or trained personnel from PennDOT/FHWA. ▪ <i>Submittal Form Complete.</i> ▪ <i>No Submission to USFWS, Submit an Electronic Copy to EPDS and Retain PSF with Documentation in Project File.</i>
	B) Transportation maintenance activities determined to have <i>No Effect</i> on the species. Publication 23, Section 3.17 does not indicate the assembly will effect bog turtles. ▪ <i>Reference Appendix A of the PBO</i> ▪ <i>Submittal Form Complete.</i>
	C) Project limited to the <u>main channel</u> of a watercourse greater than 30 feet in width with persistent cobble/boulder substrate. ▪ <i>Determination Does Not Apply to Adjacent Wetlands or Tributaries.</i> ▪ <i>Reference Appendix C of the PBO.</i> ▪ <i>Submittal Form Complete.</i>

NO EFFECT DETERMINATION - AVOIDANCE OF ALL POTENTIAL PROJECT EFFECTS

(X)	Basis of Determination
	D) Transportation actions which have been determined by the FHWA/PennDOT to completely avoid all potential effects on the species. Justification of this conclusion needs to be documented for consultation with the USFWS. ▪ <i>Submit Form to USFWS – Documentation must be provided to the USFWS for concurrence.</i>

MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION / NEGATIVE SPECIES SURVEY

(X)	Basis of Determination
	E) Negative Phase II/Phase III Bog Turtle Survey completed for the project. ▪ <i>Submit Form and Survey Report to USFWS for concurrence.</i>

PROGRAMMATIC CATEGORY 1

MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION

(X)	Basis of Determination
	For projects where <i>temporary effects</i> to potential hibernacula microhabitat are anticipated to occur. Project must occur during the species active seasonal period of April 1 – October 31. ▪ Requires application of <u>AMMs 1-10</u> and <u>AMMs 12-17</u>. ▪ <u>AMM 19</u> may be required for compensatory mitigation. ▪ <i>Submit Form to USFWS.</i>

PROGRAMMATIC CATEGORY 2

MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION

(X)	Basis of Determination
	For projects where <i>permanent effects</i> to potential hibernacula microhabitat are anticipated to occur. Project must occur during the species active seasonal period of April 1 – October 31. ▪ Requires application of <u>AMMs 1-10</u> and <u>AMMs 12-18</u>. ▪ <u>AMM 19</u> is required to compensate for permanent habitat impacts. ▪ <i>Submit Form to USFWS.</i>

PROGRAMMATIC CATEGORY 3

MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION

(X)	Basis of Determination
	For projects where <i>temporary effects</i> to potential foraging microhabitat are anticipated to occur during the species inactive seasonal period of November 1 – March 31. ▪ Requires application of <u>AMMs 1-9</u> and <u>AMM 11</u> for inactive season construction. ▪ <i>Submit Form to USFWS.</i>

PROGRAMMATIC CATEGORY 4

☐ **MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION OR**

☐ **MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION***

(X)	Basis of Determination
	For projects where <i>temporary effects</i> to potential foraging microhabitat are anticipated to occur during the species active seasonal period of April 1 – October 31. - Requires application of AMMs 1-9 and AMMs 12-18 for active season construction. <i>Submit Form to USFWS.</i>
*The Programmatic Actions that USFWS regard as <i>Not Likely to Adversely Affect</i> or <i>Likely to Adversely Affect</i> will likely be dependent upon the project's context and review of the action. Most scenarios regarding temporary effects to potential foraging habitat should be <i>Not Likely to Adversely Affect</i> with successful application of AMMs. Potential scenarios that would potentially move these actions to <i>Likely to Adversely Affect</i> may include: - One or more AMMs cannot be implemented due to site specific circumstances. - The size of the temporary wetland impact area is greater than the USFWS feels that the AMMs can be effectively implemented or applied. - The duration of the project exceeds the period for which the USFWS feels that the AMMs can be effectively implemented.	

PROGRAMMATIC CATEGORY 5

☐ **MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION* OR**

☐ **MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION**

(X)	Basis of Determination
	For projects where <i>permanent effects</i> to potential foraging microhabitat are anticipated to occur during the species inactive seasonal period of November 1 – March 31. - Requires application of AMMs 1-9 and AMM 11 for inactive season construction. - AMM 19 is required to compensate for permanent habitat impacts. - Submit Form to USFWS.
*The Programmatic Actions that USFWS regard as <i>Not Likely to Adversely Affect</i> or <i>Likely to Adversely Affect</i> will likely be dependent upon the project's context and review of the action. Most scenarios regarding permanent effects to potential foraging habitat should be <i>Likely to Adversely Affect</i> with successful application of AMMs. Potential scenarios that would potentially move these actions to <i>Not Likely to Adversely Affect</i> may include: The size of the permanent wetland impact is extremely small.	

PROGRAMMATIC CATEGORY 6

MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION

(X)	Basis of Determination
	For projects where <i>permanent effects</i> to potential foraging microhabitat are anticipated to occur during the species active seasonal period of April 1 – October 31. ▪ Requires application of <u>AMMs 1-9 and AMMs 12- 18</u> for active season construction. ▪ <u>AMM 19</u> is required to compensate for permanent habitat impacts. ▪ <i>Submit Form to USFWS.</i>

PROGRAMMATIC CATEGORY 7

☐ **MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION OR**

☐ **MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION**

(X)	Basis of Determination
	For projects which will occur within stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat during the species active seasonal period of April 1 – October 31 with exclusionary measures. ▪ Requires application of <u>AMMs 1-9 and AMMs 12- 17</u> for active season construction. ▪ <i>Submit Form to USFWS.</i>
*The Programmatic Actions that USFWS regard as <i>Not Likely to Adversely Affect</i> or <i>Likely to Adversely Affect</i> will likely be dependent upon the project's context and review of the action. Most scenarios regarding stream corridors or upland habitat should be <i>Not Likely to Adversely Affect</i> with successful application of AMMs. Potential scenarios that would potentially move these actions to <i>Likely to Adversely Affect</i> may include: ▪ One or more AMMs cannot be implemented due to site specific circumstances. ▪ The size of the project impact area is greater than the USFWS feels that the AMMs can be effectively implemented or applied. ▪ The duration of the project exceeds the period for which the USFWS feels that the AMMs can be effectively implemented.	

PROGRAMMATIC CATEGORY 8

MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION

(X)	Basis of Determination
	For projects which will occur within stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat during the species inactive seasonal period of November 1 – March 31. ▪ Requires application of <u>AMMs 1-9</u> and <u>AMM 11</u> for inactive season construction. ▪ <i>Submit Form to USFWS.</i>

PROGRAMMATIC CATEGORY 9

MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION

(X)	Basis of Determination
	For projects where the hydrology of supporting habitat will be permanently affected by the action. ▪ Requires application of <u>AMMs 1-10</u> and <u>AMMs 12-18</u>. ▪ <u>AMM 19</u> is required to compensate for permanent habitat impacts. ▪ <i>Submit Form to USFWS.</i>

AVOIDANCE AND MINIMIZATION MEASURES

For actions to be covered by this programmatic consultation, specific AMMs related to the species will be implemented where applicable. The AMMs included in the analysis, if executed under appropriate circumstances, are expected to reduce potential impacts of the stressors. In some cases, impacts will be reduced to levels that are insignificant (the magnitude or size of the impact will never reach the scale where take occurs) or discountable (the probability is extremely unlikely for take to occur) and, therefore, not likely to adversely affect the species. In other cases, some level of take of the species will be unavoidable even with the application of AMMs but will be offset through a compensatory AMM.

The implementation of AMMs 1 to 9 is required for all other actions with the use of this programmatic consultation, while AMMs 10-19 are only required for specific programmatic categories. The application of AMMs acknowledges the presence of potential species-supporting habitat and the confirmed or assumed presence of the species within the action area of the transportation activity.

AMM	DESCRIPTION
<i>Required for all actions.</i>	
1	Ensure that all wetland, bog turtle habitat, and species surveyors, operators, employees, and contractors working in areas of known or assumed occupied bog turtle habitat are aware of and implement all PennDOT environmental commitments, including all applicable AMMs, PA DEP permit conditions, USACE permit conditions, and Northeast Partners in Amphibian and Reptile Conservation (NEPARC) Publication 2022-02 equipment disinfection and infected specimen protocols. Sensitivity training and briefing materials will be provided to all applicable personnel prior to the initiation of the action. Sensitive resource signage will be placed at the site of the action to notify personnel of the potential presence of the species.
2	All work associated with the action shall be conducted in accordance with the Erosion and Sediment Pollution Control Plan approved by the County Conservation District or PA DEP. Erosion and sediment control best management practices will be implemented before, during, and after all land disturbance to prevent the potential for asphyxiation and smothering of bog turtles as well as accidental sedimentation and filling of adjacent wetland habitats that may potentially support the species. All erosion and sediment control features will be properly installed and maintained in accordance with the County Conservation District and PA DEP. The project site will be monitored daily, as is also required for all Chapter 102 and NPDES permitting, to ensure the erosion and sedimentation control practices are implemented and properly maintained, and to identify any project related impacts due to sediment accumulation. The daily inspection may be completed by the on-site environmental monitor/inspector or project foreman.

AMM	DESCRIPTION
3	All rock scour protection areas associated with an action will be completed in such a manner that precludes large voids for potential impingement and entrapment of bog turtles. Any voids in the rock scour protection will be choked with smaller rock and mineral material to avoid the creation of potential traps for the species. All rock scour protection areas must be installed and depressed below the appropriate stream water elevation as conditioned by PA DEP authorization. Consider using natural channel stabilization techniques as an alternative to rip-rap scour protection/energy dissipation and bank armoring activities.
4	All storage and dispensing of vehicular fuels and fluids will occur at least 300 feet from any aquatic habitats present. The project site will be monitored daily to ensure spill avoidance/ remediation practices are implemented. The daily inspection may be completed by the on-site environmental monitor/inspector or project foreman. If required by the project, a hazardous material construction spill avoidance/remediation plan (Spill Prevention Control and Countermeasure Plan – SPCC Plan) will be developed and implemented during the fulfillment of the transportation action. ☐ ☐ Check when completed
5	Project storage and staging areas will be located only in upland areas located as far as possible from wetland/watercourse habitat areas. This shall include all areas required for stockpiles, equipment storage, and parking.
6	All public utilities potentially associated with the action due to the necessary relocation of their services will be notified of the potential presence of the species and their need to consult with the Service and Pennsylvania Fish and Boat Commission (PFBC) on their respective relocation activities. Documentation of the public utility coordination will be completed for the project / maintenance activity file.
7	High visibility orange construction fencing shall be used to delineate avoidance areas during the action. The fencing will act as a visual warning to prevent construction equipment and personnel from entering and disturbing sensitive areas outside of the project limit of disturbance.
8	To avoid the introduction and spread of invasive species into supporting habitats and minimize the duration of exposed soils, use erosion control blankets made of bio-degradable material on disturbed areas immediately after project completion, and promptly re-vegetate areas of temporary disturbance with native wetland or upland seed mixes dependent on the location of the disturbance ☐ ☐ Check when completed Thoroughly wash construction equipment and vehicles offsite, especially the undercarriage and wheels, before use within 300 feet of supporting habitat. Thoroughly wash temporary crossing measures such as composite matting or timber matting before use within 300 feet of supporting habitat. ☐ ☐ Check when completed

AMM	DESCRIPTION
9	Specific coordination and construction operating procedures approved by the Service/PFBC shall be implemented if a bog turtle is encountered during preconstruction exclusion surveys, on-site monitoring, or within the vicinity of the limit of disturbance (LOD) during the action (i.e., construction). These specific procedures include the following: ▪ If a turtle is encountered, then all construction activities within 300 feet of the capture will cease immediately. The District Environmental Manager and qualified surveyor will be contacted immediately to inform them of the encounter. ▪ If the turtle appears dead or immobile, then the turtle will be left where it was initially observed. If the turtle appears to be mobile, then efforts will be made to temporarily contain the turtle until the qualified bog turtle surveyor can take possession of it. Temporary containment will consist of placing the turtle in a thoroughly clean bucket that has a depth of more than 18 inches. Pieces of native vegetation and 0.5 to 1 inch of water will be placed in the bucket with the turtle to keep the animal cool and hydrated. The bucket will be placed in a quiet, well- shaded area. The turtle will be handled as little as possible, and temporary containment must not exceed 6 hours. The qualified bog turtle surveyor will take possession of the turtle and identify the species as well as document the capture location and condition of the turtle. The qualified surveyor will conduct a thorough search of the area within and in the vicinity of the limit of disturbance of the action to determine if any other turtles may be in the construction area. The qualified surveyor will also inspect the exclusion barrier fencing and direct any repairs as needed. If there are breaches in the exclusion barrier and/or the turtle is identified as a bog turtle, then construction will not resume until coordination with the Service and PFBC is completed and all breaches in the exclusion barrier are repaired. If the qualified bog turtle surveyor identifies the turtle species as a bog turtle, then the surveyor will immediately notify endangered species biologists at both the Service and PFBC. The elapsed time for contacting both agencies will be as soon as possible but must not exceed 24 hours. Following the arrival of the qualified bog turtle surveyor at the project site, the turtle must be handled by the biologist according to the recommendations of the Service and PFBC. The qualified surveyor will consult with the Service and PFBC concerning the safe handling and necessary relocation of the turtle outside of the project disturbance area. Construction will resume only after the completion of this consultation. If the qualified bog turtle surveyor identifies the turtle as a species other than the bog turtle, and the turtle appears healthy, then the qualified surveyor will release the turtle unharmed no further than 300 feet from the site of discovery to a safe location outside of the limit of disturbance. Construction may continue once the turtle is relocated. If any turtle found appears injured or dead, the qualified bog turtle surveyor will coordinate with the Service and PFBC concerning the safe handling of an injured turtle and the taking of

AMM	DESCRIPTION
	possession of the specimen whether injured or dead by one of these agencies. Construction will resume only at the completion of this coordination. Compensatory mitigation measures may be necessary to offset the adverse effects of take.
<i>Required for specific programmatic categories</i>	
10	To avoid the killing, harm, or harassment of brumating bog turtles within hibernacula microhabitat during the species inactive period, the action will be completed during the active season for the species between April 1 and October 31.
11	To avoid the killing, harm, or harassment of bog turtles during the species active period, the action will be completed during the inactive season for the species between November 1 and March 31.
12	To avoid the killing, harm, or harassment of individual bog turtles during the species active period, a preconstruction exclusion survey to remove any bog turtle individuals within the LOD will be conducted by a Service/PFBC recognized-qualified bog turtle surveyor immediately prior to the commencement of the action. Exclusion surveys may also be necessary for the assembly/disassembly of temporary streamflow diversion measures; the placement of rock scour protection materials; and the internal confines of an existing bridge or culvert crossing structure. Survey efforts within stream habitats may include the use of viewing buckets and snorkeling equipment to adequately search underwater habitats associated with existing culvert and bridge crossings, including cut banks and eroded areas under abutments. Survey efforts within existing culvert pipes may include the usage of cutting tools to dissect the culvert pipe for viewing, or the complete removal of the intact pipe for viewing of the pipe's internal area. Any captured individuals will be relocated outside of the project disturbance area into suitable habitat. The Service/PFBC recognized- qualified bog turtle surveyor will oversee and supervise any necessary vegetation cutting or clearing (4 to 6 inches height) for the effective survey of the excluded area. All exclusionary surveys will be conducted according to the most current Phase 2/Phase 3 survey protocol(s) provided by the Service and PFBC.

AMM	DESCRIPTION
13	To avoid the killing, harm, or harassment of individual bog turtles during the species active period, an exclusionary barrier (silt fence, super silt fence, adequate silt sock, sand bag wall, sheeting, Jersey barrier) will be erected immediately following the species exclusionary survey and prior to the commencement of the activity to isolate the disturbance area associated with the action (See Appendix D). Sandbag walls, sheeting, Jersey barrier, etc. may be necessary within watercourse channel environments to isolate instream disturbance areas. No other construction/ maintenance activities may commence until the exclusionary barrier has been installed. The exclusionary barrier is to be installed a minimum of 6-inches into the underlying habitat where appropriate. The installation/removal of the exclusionary barrier must be completed by hand through wetland habitats. The installation/removal of the exclusionary barrier through upland habitats may be completed with the assistance of equipment. The exclusionary barrier shall be installed and removed under the supervision of a Service/PFBC recognized- qualified bog turtle surveyor. While in use, the exclusionary barrier shall be inspected daily to ensure its competency and function. The daily inspection may be completed by the on-site environmental monitor/inspector or project foreman. Straw bales, sandbags, or temporary fencing may be used as temporary barriers at ingress/egress locations to provide access to equipment/personnel through the exclusionary barrier. Should the exclusionary barrier become compromised during its use, then all construction/maintenance activities will cease until an exclusionary survey of the action area has been completed by a Service/PFBC recognized-qualified bog turtle surveyor and the compromise has been remediated. The exclusionary barrier is to be removed immediately following the completion of the action. The Service/PFBC recognized-qualified bog turtle surveyor will ensure that potential pitfalls are not created by trenching associated with the installation and/or removal of the exclusionary barrier.
14	All temporary streamflow diversion measures must be implemented in a manner that will not result in the possible collection and entrainment of species individuals into pumping equipment.
15	To avoid the killing, harm, or harassment of species individuals during the species active period, a Service/PFBC recognized-qualified bog turtle surveyor shall conduct inspections of wetland spoil materials from excavation areas within core supporting habitat to ensure that species individuals are recovered and relocated. The need for wetland spoil inspection shall be determined by the Service/PFBC recognized-qualified bog turtle surveyor and PennDOT/FHWA.
16	To avoid the killing, harm, or harassment of individual bog turtles during the species active period, a Service/PFBC recognized-qualified bog turtle surveyor may provide continuous monitoring during the active construction. The need for continuous monitoring shall be determined by the Service/PFBC recognized-qualified bog turtle surveyor and PennDOT/FHWA.

AMM	DESCRIPTION
17	A Service/PFBC recognized-qualified bog turtle surveyor will be retained throughout the duration of the transportation action to monitor the effectiveness of the implemented AMMs. The surveyor will also provide recommendations to PennDOT and the FHWA concerning the implementation of the necessary measures.
18	To reduce the amount of take associated with the permanent loss of habitat, a salvage survey effort will be undertaken in conjunction with the Service/PFBC to relocate any individuals within the impact area prior to disturbance. Any recovered individuals will be relocated a maximum of 300 feet from the impact area within the same drainage basin.
19	<u>To offset the adverse effects for the permanent loss of supporting habitat and/or incidental take,</u> compensatory species mitigation will be provided. The determination of the amount of compensation to be provided, and the means of achievement will be addressed with the Service on an individual project basis. Potential strategies for compensatory species mitigation could include, but are not limited to, the purchase of credits from a Service approved conservation bank, construction of a PennDOT advanced compensation conservation bank, vegetation management activities at an occupied species site, restoration of supporting hydrology conditions to an altered occupied species site, species passage improvements at an occupied species site associated with documented vehicular conflicts, the provision of nest protection/ predator control measures at an occupied species site, and the provision of in lieu fee monetary funds dedicated to habitat management activities at an occupied species site, purchasing and preserving an occupied species site, re-evaluating roadside mowing practices in proximity to an occupied species site, or acquiring and operating an FHWA/PennDOT-sponsored conservation “bundling” site or conservation easement.

PROGRAMMATIC CATEGORY ACTIONS AND THEIR APPLICABLE AVOIDANCE AND MINIMIZATION MEASURES

Programmatic Category (PC#)		Description	AMMs 1-9	AMM 10	AMM 11	AMM 12	AMM 13	AMM 14	AMM 15	AMM 16	AMM 17	AMM 18	AMM 19 Required for Mitigation
PC1	Temporary Hibernacula Habitat Effects	Actions where temporary effects to potential hibernacula are anticipated to occur without any hydrologic modification.	X	X	--	X	X	X	X	X	X	--	X
PC2	Permanent Hibernacula Habitat Effects	Actions where permanent effects to potential hibernacula microhabitat are anticipated to occur without any hydrologic modification.	X	X	--	X	X	X	X	X	X	X	X
PC3	Temporary Foraging Habitat Effects Inactive Season Work	Actions where temporary effect to potential foraging habitat are anticipated to occur during the inactive bog turtle season without any hydrologic modification.	X	--	X	--	--	--	--	--	--	--	--
PC4	Temporary Foraging Habitat Effects Active Season Work	Actions where temporary effect to potential foraging habitat are anticipated to occur during the active bog turtle season without any hydrologic modification.	X	--	--	X	X	X	X	X	X	X	--
PC5	Permanent Foraging Habitat Effects Inactive Season Work	Actions where permanent effects to potential foraging habitat are anticipated to occur during the inactive bog turtle season without any hydrologic modification.	X	--	X	--	--	--	--	--	--	--	X
PC6	Permanent Foraging Habitat Effects Active Season Work	Actions where permanent effects to potential foraging habitat are anticipated to occur during the active bog turtle season without any hydrologic modification.	X	--	--	X	X	X	X	X	X	X	X
PC7	Upland/Stream Corridor Habitat Effects Active Season Work	Actions which will occur within stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat during the active bog turtle season with exclusionary measures. No permanent hydrologic impacts to aquatic habitats are anticipated to occur.	X	--	--	X	X	X	X	X	X	--	--
PC8	Upland/Stream Corridor Habitat Effects Inactive Season Work	Actions which will occur within stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat during the inactive bog turtle season. No permanent hydrologic impacts to aquatic habitats are anticipated to occur.	X	--	X	--	--	--	--	--	--	--	--
PC9	Permanent Hydrologic Effects	Actions where the hydrology of supporting habitat will be permanently altered by the action, resulting in take due to modified hydrology.	X	X	--	X	X	X	X	X	X	X	X

AMM 19 DESCRIPTION OF COMPENSATORY MITIGATION MEASURES

CERTIFICATION

I certify that ALL information contained within this project submittal form is accurate, and that the indicated avoidance and minimization measures (AMMs), and compensatory commitments will be implemented. I agree to re-consult with the USFWS on this project if changes to the project type, location, timing, size or configuration become necessary. Re-consultation will also be necessary if the avoidance, minimization, and compensatory commitments cannot be implemented.

Signature of FHWA/PennDOT Representative

Date

USFWS PENNSYLVANIA FIELD OFFICE REVIEW COMMENTS

Date of Project Submittal Form Receipt	
USFWS Project Number	
Reviewing Biologist	
Signature of Supervisory Biologist	

(X)	USFWS DETERMINATION
	Project as proposed with commitments is consistent with the programmatic consultation.
	Project as proposed with commitments is <u>not</u> consistent with programmatic consultation; additional information / coordination is requested.
	Project proposed is <u>not</u> consistent with the programmatic consultation and requires individual consultation.

Appendix 3

Bog Turtle Exclusion Barrier Specifications

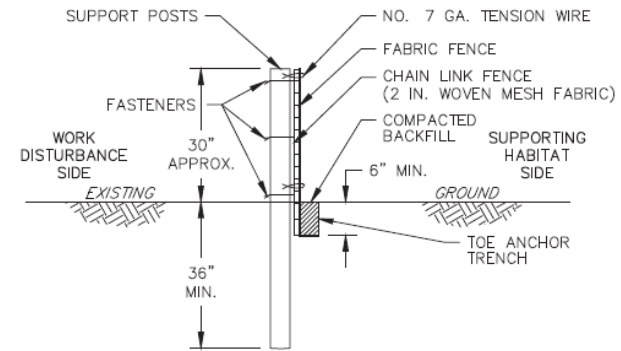
Appendix 3: Bog Turtle Exclusion Barrier Specifications

BOG TURTLE EXCLUSION BARRIER SPECIFICATIONS

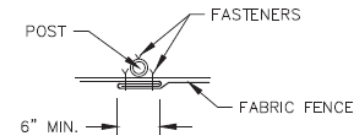
1. AN APPROXIMATELY 30-INCH HIGH EXCLUSION BARRIER FENCE SHALL BE ERECTED NEAR THE LIMITS OF DISTURBANCE OF THE PROPOSED TRANSPORTATION ACTIVITY. THE EXCLUSIONARY FENCE WILL FUNCTION AS A BARRIER TO PREVENT BOG TURTLES FROM MIGRATING OUT OF WETLANDS AND WATERWAYS INTO THE DISTURBANCE AREA. THE BARRIER WILL ALSO PREVENT TRANSPORTATION ACTIVITIES FROM EXTENDING BEYOND THE PRESCRIBED LIMITS OF DISTURBANCE. THE BARRIER WILL BE INSTALLED AS INDICATED AS SOON AS PRACTICABLE FOLLOWING ANY NECESSARY SPECIES EXCLUSIONARY SURVEY EFFORTS, AND PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBANCE ACTIVITIES. THE BARRIER WILL BE INSTALLED ONLY AFTER RECEIVING APPROVAL TO DO SO FROM THE QUALIFIED BOG TURTLE SURVEYOR. SILT SOCK, SAND BAG WALL, SHEETING, JERSEY BARRIER, ETC. MAY BE NECESSARY TO ESTABLISH THE EXCLUSION BARRIER IN LIEU OF THE FENCING AS DETERMINED BY THE QUALIFIED BOG TURTLE SURVEYOR TO ADDRESS SITE SPECIFIC CONDITIONS SUCH AS WATERCOURSE CHANNEL ENVIRONMENTS, TIE-IN AREAS TO EXISTING STRUCTURES, PAVEMENTS, ETC.
2. THE EXCLUSIONARY BARRIER IS TO BE INSTALLED A MINIMUM OF 6-INCHES INTO THE UNDERLYING HABITAT WHERE APPROPRIATE. THE INSTALLATION/REMOVAL OF THE EXCLUSIONARY BARRIER MUST BE COMPLETED BY HAND THROUGH WETLAND HABITATS. THE INSTALLATION/REMOVAL OF THE EXCLUSIONARY BARRIER THROUGH UPLAND HABITATS MAY BE COMPLETED WITH THE ASSISTANCE OF EQUIPMENT. THE EXCLUSIONARY BARRIER SHALL BE INSTALLED AND REMOVED UNDER THE SUPERVISION OF A QUALIFIED BOG TURTLE SURVEYOR. WHILE IN USE, THE EXCLUSIONARY BARRIER SHALL BE INSPECTED DAILY TO ENSURE ITS COMPETENCY AND FUNCTION. THE DAILY INSPECTION MAY BE COMPLETED BY THE ON-SITE ENVIRONMENTAL MONITOR/INSPECTOR OR PROJECT FOREMAN. STRAW BALES, SAND BAGS, OR TEMPORARY FENCING MAY BE USED AS TEMPORARY BARRIERS AT INGRESS/EGRESS LOCATIONS TO PROVIDE ACCESS TO EQUIPMENT/PERSONNEL THROUGH THE EXCLUSIONARY BARRIER. SHOULD THE EXCLUSIONARY BARRIER BECOME COMPROMISED DURING ITS USE, THEN ALL CONSTRUCTION/MAINTENANCE ACTIVITIES WILL CEASE UNTIL AN EXCLUSIONARY SURVEY OF THE ACTION AREA HAS BEEN COMPLETED BY A QUALIFIED BOG TURTLE SURVEYOR AND THE COMPROMISE HAS BEEN REMEDIATED. THE EXCLUSIONARY BARRIER IS TO BE REMOVED IMMEDIATELY FOLLOWING THE COMPLETION OF THE DISTURBANCE ACTIVITIES. THE QUALIFIED BOG TURTLE SURVEYOR WILL ENSURE THAT POTENTIAL PITFALLS ARE NOT CREATED BY TRENCHING ASSOCIATED WITH THE INSTALLATION AND/OR REMOVAL OF THE EXCLUSIONARY BARRIER.

DETAIL NOTES

1. POSTS ARE TO BE SPACED AT 10 FOOT MAXIMUM DISTANCES USING 2.5 INCH DIAMETER GALVANIZED OR ALUMINUM MATERIAL.
2. CHAIN LINK TO POST FASTENERS ARE TO BE SPACED AT 14-INCH MAXIMUM USING NO. 6 GALVANIZED ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL PRE-FORMED CLIPS.
3. CHAIN LINK TO TENSION WIRE FASTENERS SPACED AT 60-INCHES MAXIMUM USING NO. 10 GAGE GALVANIZED STEEL WIRE.
4. NO. 7 GAGE TENSION WIRE INSTALLED HORIZONTALLY AT TOP AND BOTTOM OF CHAIN-LINK FENCE.
5. CHAIN LINK FENCE AND FABRIC FENCE MUST BE INSTALLED ON THE SIDE OF THE POSTS FACING THE SUPPORTING WETLAND HABITAT. NO FENCING SHOULD ON THE SIDE OF THE POSTS FACING THE WORK DISTURBANCE SIDE. THIS IS OPPOSITE OF THE TYPICAL INSTALLATION FOR EROSION AND SEDIMENT POLLUTION CONTROL PURPOSES.
6. FENCING SHOULD BE INSTALLED TO A MINIMUM DEPTH OF 6 INCHES INTO THE UNDERLYING GROUND WHERE POSSIBLE.
7. INSTALLATION SHOULD ENSURE THAT GROUND ELEVATION IS RE-ESTABLISHED WITH COMPACTED BACKFILL ALONG BOTH SIDES OF THE FENCING TO PREVENT THE FORMATION OF A TRENCH OR PITFALL.
8. IN AREAS ALONG THE EXCLUSION BARRIER WHERE DRAINAGE IS NECESSARY TO PREVENT PONDING BEHIND THE FENCE AND POSSIBLE BREACH/COMPROMISE, A SECTION OF 0.5 INCH X 0.5 INCH OR 1 INCH X 1 INCH HARDWARE CLOTH MAY BE AFFIXED TO THE CHAIN LINK FENCE IN LIEU OF THE FABRIC FENCE.



SECTION VIEW



JOINING FENCE SECTIONS

BOG TURTLE EXCLUSION BARRIER

NOT TO SCALE