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

Version 4.0, December 2019



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

Table of Contents

1.	Introduction.....	3
1.1	Bog Turtle Description and Life History.....	3
2.	Programmatic Scope and Effects Analysis Summary.....	5
2.1.	No Effect.....	7
2.2.	May Affect.....	12
3.	Standard Operating Procedure (SOP) for Project(s) Submission	20
3.1.	Conduct a PNDI Review.	20
3.2.	Complete Project Submittal Form (PSF) or Bog Turtle Programmatic IPaC Effect Determination Key.....	20
3.2.1.	PSF Process.....	20
3.2.2.	IPaC Effect Determination Key Process	22
	Appendix 1: Large Watercourses.....	
	Appendix 2: Project Submittal Form	
	Appendix 3: Bog Turtle Exclusion Barrier Specifications.....	

1. Introduction

This document provides implementation guidance for the U.S. Fish & Wildlife Service (USFWS) programmatic biological opinion (BO) based on the PennDOT/FHWA programmatic biological assessment (BA), *Effects of Transportation Actions on the Bog Turtle within the Commonwealth of Pennsylvania*.

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**);
- **Avoidance and Minimization Measures:** A summary of avoidance and minimization measures (AMMs) to reduce the potential effects of projects, consistent with the scope of the bog turtle programmatic consultation (**Tables 4 and 5**); and
- **IPaC Assisted Determination Key:** A web-based tool to assist in the identification of potential project effects on the bog turtle and applicable AMMs to reduce potential impacts to the bog turtle (**in development**).

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 effect 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 anthropogenic¹ 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
- Have been observed to be transients in forested habitat associated 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
- Have also been observed traveling overland 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

¹ Caused by humans activity.

Reasons for Species 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 activities² 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 process. 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. Staffing shortages at the USFWS may result in some limited variations in the 30-day review time for formal consultations.

² Includes planned or programmed transportation improvement projects and maintenance activities.

Figure 1. Programmatic consultation range and extant range of the bog turtle in Pennsylvania³.

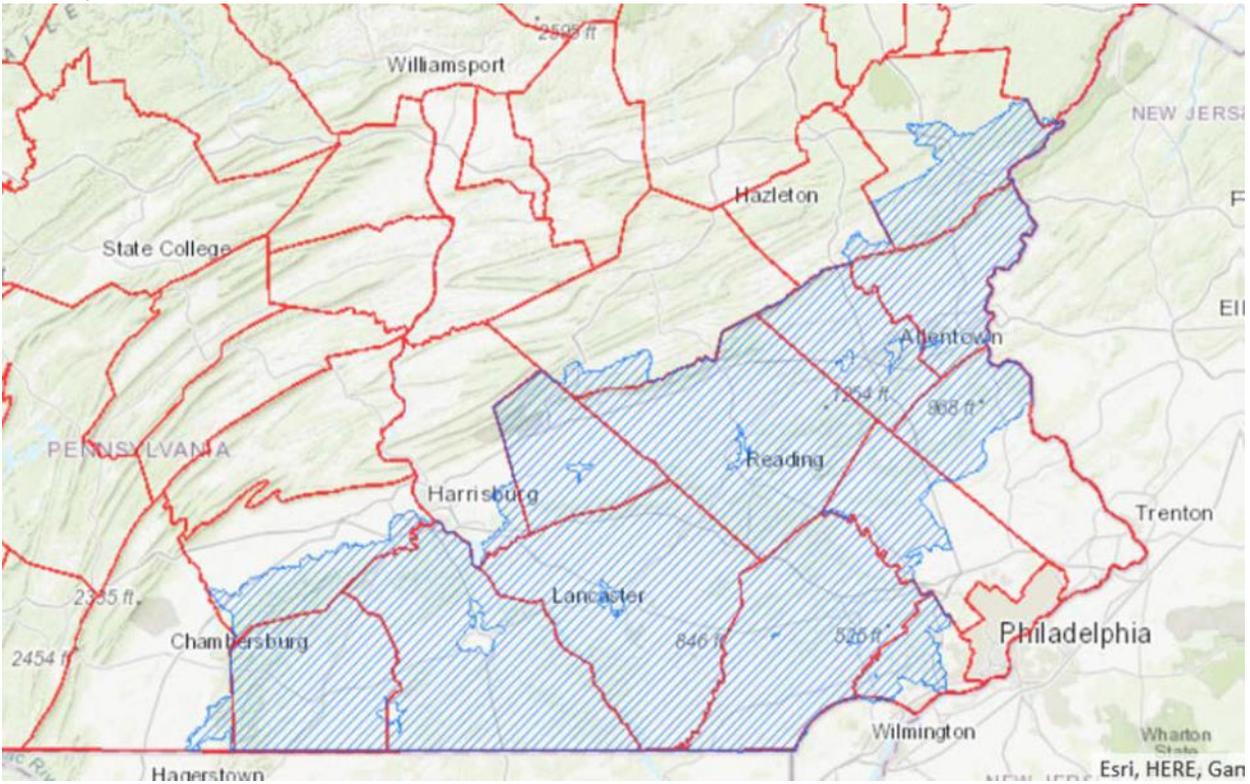


Table 1. Extant Range of the Bog Turtle Within Pennsylvania³

COUNTY	EXTANT RANGE	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		

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

³ Changes to the extant range may occur. Utilizing an account login and selecting federal species/bog turtles 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.

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.

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**⁴; or
- b. The activity is a maintenance activity identified in **Table 2**; 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 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 substrate⁵; or
- f. The transportation action has been determined by the FHWA or PennDOT to completely avoid all potential effects on the species; or
- g. A Phase II/Phase III Presence- Inferred Absence Survey (species survey) conducted by a qualified bog turtle surveyor has determined that the species is not likely to be present within the project area and the USFWS has concurred with these findings⁶.

⁴ 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.

⁵ Appendix 1 contains a listing of watercourses within the extant range that may have reaches greater than 30' wide with persistent cobble/boulder substrates.

⁶ Conducting these surveys is not recommended or necessary to utilize the programmatic, however, if a survey has been conducted by others in the immediate vicinity, this available data may be useable as best available commercial and scientific data. Consider performing these surveys when the project activity is not eligible under the programmatic, or when AMMs cannot be implemented.

Table 2. Maintenance Assemblies with USFWS Agreement have NO EFFECT on Bog Turtles^{7,8}

CODE	BRIEF DESCRIPTION
711-7114-01	Dust Palliative - Bit./Calcium Chloride/Other Product
711-7115-01	Patch/Base Repair
711-7113-01	Dust Palliative - Bit./Calcium Chloride/Other Product
711-7115-01	Patch/Base Repair
711-7121-01	Patching - Manual
711-7121-02	Patching – Manual (Emergency)
711-7121-03	Patching – Manual – Pipe Trenches
711-7121-04	Patching – Layered – Including Patch Machine
711-7122-01	Patching – Mechanical – Tow Paver
711-7122-02	Patching – Mechanical – Mixer Paver
711-7122-03	Patching – Mechanical – Paver Finisher
711-7122-04	Patching – Edge – Mechanical
711-7123-01	Surface Treatment – Mixer Paver
711-7123-09	Surface Treatment – Mixer Paver – Pre-Hauling
711-7124-01	Surface Treatment – Liquid Bituminous Mechanical
711-7124-02	Surface Treatment – Sand Bleeding Roads
711-7124-03	Surface Treatment – Slurry Seal and Ralumac and Nova Chip
711-7124-04	Surface Treatment – Liquid Bituminous – Seal Coat – Double Application
711-7124-09	Surface Treatment – Liquid Bituminous – Pre-Hauling
711-7126-01	Base/Subbase Repair – Flex. Base – Light Duty
711-7126-02	Base/Subbase Repair – Flex. Base – Heavy Duty
711-7126-03	Base/Subbase Repair – Rigid Base
711-7126-04	Base/Subbase Repair – Widener
711-7127-01	Skin Patch – Liquid Bituminous – Manual
711-7127-02	Skin Patch – Liquid Bituminous – Mechanical
711-7127-03	Skin Patch – Liq. Bit. Manual – Dist. and Spray Wand
711-7128-01	Crack Sealing – Bituminous Surface Lane
711-7131-01	Leveling – Tow Pav./Pav. Finish – Mechanical
711-7131-02	Leveling – Mixer Paver – Mechanical
711-7131-03	Leveling Course > 2" – Binder Finish Paver Mechanized
711-7131-09	Leveling – Mixer Paver – Pre-Hauling
711-7132-01	Milling – Bituminous Surfaces
711-7132-02	Spot Milling Only
711-7133-01	Recycling – Bituminous Surfaces
711-7134-01	Slurry Seal and Ralumac
711-7135-01	Surface Treatment – Plant Mix – Paver 1½
711-7135-02	Surface Treatment – Plant Mix ID3
711-7141-01	Concrete Patching – Full Depth
711-7141-02	Concrete Patching – Spalls
711-7147-01	Joint Sealing Concrete Roads Lane
711-7147-02	Joint Sealing Concrete Rds. – Pavement/Shoulders Separation Lane
711-7148-01	Stockpile Aggregate
711-7213-01	Stabilization – Add Material Mechanical
711-7214-01	Dust Palliative Bituminous or Calcium Chloride
711-7217-01	Stabilization – Add Material Manual
711-7221-01	Patching – Manual
711-7222-01	Patching – Mechanical – Plant Mix
711-7222-02	Surface Treatment – Pant Mix
711-7224-01	Surface treatment – Mechanical – Liquid Bituminous
711-7224-09	Surface Treatment – Liquid Bituminous – Pre-Hauling

⁷ Refer to PennDOT Publication 113, Maintenance Foreman Manual for detailed descriptions

⁸ Same description of activity regardless of the first three numbers indicated – program code may also be 612, 618, 621, 663, 712, 713, or 714

CODE	BRIEF DESCRIPTION
711-7225-01	Driveway Adjustment
711-7226-01	Base/Subbase Repair – Light Duty
711-7226-02	Base/Subbase Repair – Heavy Duty
711-7227-01	Skin Patching – Manual – Liquid Bituminous
711-7227-02	Skin Patching – Mechanical – Liquid Bituminous
711-7227-03	Skin Patching – Mech. – Liq. Bit. – Distr. and Spray Wand
711-7227-09	Skin Patching – Pre-Hauling
711-7232-01	Milling
711-7233-01	Recycling
711-7213-01	Stabilization – Add Material Mechanical
711-7213-09	Stabilization – Pre-Hauling
711-7214-01	Dust Palliative Bituminous or Calcium Chloride
711-7217-01	Stabilization – Add Material – Manual
711-7221-01	Patching – Manual
711-7222-01	Patching – Mechanical – Plant Mix
711-7222-02	Surface Treatment – Pant Mix
711-7224-01	Surface treatment – Mechanical – Liquid Bituminous
711-7224-09	Surface Treatment – Liquid Bituminous – Pre-Hauling
711-7225-01	Driveway Adjustment
711-7226-01	Base/Subbase Repair – Light Duty
711-7226-02	Base/Subbase Repair – Heavy Duty
711-7227-01	Skin Patching – Manual – Liquid Bituminous
711-7227-02	Skin Patching – Mechanical – Liquid Bituminous
711-7227-03	Skin Patching – Mech. – Liq. Bit. – Distr. and Spray Wand
711-7227-09	Skin Patching – Pre-Hauling
711-7232-01	Milling
711-7233-01	Recycling
711-7324-05	Drainage – Pipe Trenches Trench Restoration Manual
711-7324-09	Replace Pipes and Culverts – Pre-Hauling
711-7331-01	Side Dozing – Mechanical
711-7334-01	Graffiti Removal
711-7351-01	Rain or Wind Patrol
711-7431-01	Cleaning/Flush Deck
711-7431-02	Cleaning/Flush – Bearing and Super Structure
711-7431-03	Cleaning/Flush Open Grid
711-7432-01	Painting – Spot
711-7433-01	Seal – Joints (Liquid Only)
711-7433-02	Repair Joints
711-7434-01	Repair/Replace Guiderail/Median Barrier/Parapet
711-7435-01	Lubricate Bearings
711-7435-02	Repair/Replace Bearings
711-7435-03	Repair/Replace – Pedestal/Seat
711-7442-01	Repair/Replace – Approach Slab
711-7443-01	Repair/Replace Deck
711-7443-02	Repair/Replace Sidewalk/Curb
711-7444-01	Repair/Replace Deck Drainage
711-7459-01	Other Bridge Activities
711-7421-01	Washing
711-7422-01	Traffic Services – Traffic Incident Management
711-7422-02	Repair Tunnel Roadway Wearing Surface
711-7422-03	Repair/Replace Tunnel Barrier
711-7422-04	Tunnel Lane Signal
711-7422-05	Tunnel Signs
711-7422-06	Over Height Truck Warning System
711-7423-01	Lighting Systems – General Maintenance and Inspection
711-7423-02	Repair Tunnel Lighting Systems
711-7424-01	Electrical Systems – General Maintenance/Inspection (SWO)
711-7424-02	Electrical Systems – Switch Gear

CODE	BRIEF DESCRIPTION
711-7424-03	Electrical Systems – Motor Control Center
711-7424-04	Electrical Systems – Repair or Replace Transformer
711-7424-05	Electrical Systems – Repair or Replace Transfer Switch
711-7424-06	Electrical Systems – Panel Board
711-7424-07	Electrical Systems – Universal Power Supply
711-7426-01	Structural – General Maintenance/Inspection
711-7426-02	Structural – Tunnel Liner
711-7426-03	Structural – Tunnel Roof/Ceiling Girders
711-7426-04	Structural – Tunnel Cross Passageway
711-7426-05	Structural – Tunnel Interior Walls
711-7426-06	Structural – Tunnel Portals
711-7426-07	Structural – Invert Concrete Slab on Grade
711-7426-08	Structural – Tunnel Invert Girders
711-7426-09	Structural – Tunnel Joints
711-7426-10	Structural – Tunnel Structure Members
711-7427-01	Mechanical Systems – General Maintenance/Inspection
711-7427-02	Mechanical Systems – Ventilation Systems and Fans
711-7427-03	Mechanical Systems – Drainage and Pumping Systems
711-7427-04	Mechanical Systems – Emergency Generator Systems
711-7428-01	Fire/Life Safety Systems – General Maintenance/Inspection
711-7428-02	Fire/Life Safety Systems – Carbon Monoxide Monitoring System
711-7428-03	Fire/Life Safety Systems – Tunnel Fire Protection System
711-7428-04	Fire/Life Safety Systems – Emergency Communication System
711-7428-05	Fire/Life Safety Systems – Operations and Security Systems
711-7428-06	Fire/Life Safety Systems – Fire Protective Coatings
711-7428-07	Fire/Life Safety Systems – Concrete Protective Coating Systems
711-7429-01	Other – Tunnel Activities
711-7491-01	Hauling Non-Disabled Equip. – Lowboy Operation Only
711-9003-01	Under-Utilized Rented Equipment
711-9812-01	In-Service Training
712-7521-01	Plowing, Applying Material/Chemicals - Mechanized
712-7522-01	Snow and Ice Control - Other
712-7523-01	Anti-Icing Operations
712-7524-01	Salt Brine Manufacture/Distribution
713-7611-01	Traffic Line Painting – Mechanized Yellow
713-7612-01	Traffic Line Painting – Mechanized
713-7613-01	Pavement Marking – Hand Operated Machine
713-7614-01	Raised Pavement Markers
713-7615-01	Pavement marking paint line eradication
713-7616-01	Pavement marking thermoplastics installation
713-7617-01	Repair Paint Machines – Crew Only
713-7618-01	Pavement Marking Small Paint – Waterborne Site
713-7618-02	Pavement Marking Small Paint – Durable
713-7619-01	Other Pavement Marking activities
713-7621-01	Construction Detour and Other Temporary Signs
713-7622-01	Delineations, Hazard
713-7623-01	Sign Reviews
713-7624-01	Regulatory, Warning and Guide Signs Under 16 Sq. Feet
713-7624-02	Regulatory, Warning and Guide Signs Over 16 Sq. Feet
713-7625-01	SR and Segment Markers
713-7629-01	Other – Sign Activities
713-7631-01	Repair/Removal – Low-tension Cable Barrier (Old Style – Non-Tensioned)
713-7631-02	Guide-Rail Repair/Replace – W-Beam; Mechanized
713-7631-03	Guiderail Repair/Replace Manual
713-7631-04	Guider Rail Upgrade Remove Cable/Replace with W-Beam; Mechanized
713-7631-05	Guiderail Resetting W-Beam Guide Rail; Mechanized
713-7632-01	Guiderail Removal
713-7632-02	Guiderail Removal – Dept. Force/Contract install

CODE	BRIEF DESCRIPTION
713-7633-01	High-Tension Cable Median Barrier
713-7639-01	Median Barrier/Guiderail Impact Attenuation Devices; Other
713-7671-01	Traffic Services – Lighting/Highway, Bridge and Sign Lighting Systems
713-7681-01	Sweeping; Manual/Mechanized
713-7682-01	Deer Removal
713-7683-01	Traffic Services-Homeland Security
713-7689-01	Other – Incidental Service Activities
714-7715-01	Brushing, Selective Thinning, Tree Removal, and Tree Trimming
714-7715-02	Brushing, Tree Trimming, and Tree Removal; Mechanized
714-7715-03	Herbicide Basal Bark and Cut Stump
714-7716-01	Revitalization – Seeding and Soil Supplement; Mechanized
714-7717-01	Wildflowers (formerly Wildflower Planting)
714-7731-01	Maintenance of Interstate Roadside Rests with All-Weather Buildings
714-7732-01	Maintenance of Roadside Rest, Table Sites, Overlooks, Scenic Feature, and Park-and-Ride Lots
714-7735-01	Roadside Litter Pickup and Debris Removal/Routine
714-7735-02	Roadside Tire Remnant Removal – Debris Removal
714-9813-01	Special Roadside Litter Pick Up and Debris Removal/Great PA Cleanup
714-9848-01	Special Roadside Litter Pick Up and Debris Removal/Litter Brigade
714-9849-01	Special Roadside Litter Pick Up and Debris Removal/Adopt-A-Highway
719-9829-01	Maintenance Administration
719-9851-01	Hazardous Waste/Inventory Control
621-2542-01	FHWA Disaster Recovery (Federal Aid Routes)/Protective Measures
621-2543-01	FHWA Disaster Recovery (Federal Aid Routes)/Emergency Road Repairs
663-2542-01	FEMA Disaster Recovery (Non-Federal Routes)/Protective Measures
663-2543-01	FEMA Disaster Recovery (Non-Federal Routes)/Emergency Road Repairs

2.2. May Affect

To be eligible under this programmatic, transportation activities other than those having No Effect under Section 2.1⁹ 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 transportation maintenance activities listed in **Table 3** may affect the bog turtle and require consultation under the Endangered Species Act. These activities are eligible for the streamlined consultation process provided through this programmatic consultation. Maintenance activities¹⁰ with potential for conflict with bog turtles are identified within the detailed assembly descriptions within [PennDOT Publication 113](#). Applicable AMMs (**Table 5**) must be implemented for these activities to be eligible for bog turtle review and clearance. A summary of the required AMMs is also available as [Publication 546C](#). Publication 546C should be reviewed during scheduled maintenance training, weekly planning meetings, and/or at the beginning of performing the transportation activity.

In most cases, the application of the prescribed and relevant AMMs included in the bog turtle programmatic to a transportation activity that may affect the bog turtle will result in a “not likely to adversely affect (NLAA)” determination.

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

- Where the relevant prescribed AMMs cannot be implemented, for example an inability to implement a seasonal restriction appropriately; or
- That result in permanent effects to potential hibernacula microhabitat; or
- That result in permanent effects to potential foraging habitat; or
- When permanent modifications to the hydrology of supporting habitat will occur.

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 4 summarizes the AMMs to be applied to programmatic categories (PCs) of transportation activities that may affect the bog turtle. **Table 5** 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.

⁹ Reminder: If wetlands are not present with 300 feet of the transportation activity, then the transportation activity has no effect on the bog turtle.

¹⁰ Maintenance activities are also referred to as “assemblies”.

Table 3. Maintenance Assemblies that MAY AFFECT Bog Turtles^{11,12,13}

CODE	BRIEF DESCRIPTION
711-7112-01	Shaping
711-7113-01	Restabilization
711-7136-01	Pavement Widening BCBC Mechanized
711-7137-01	Pavement Widening Recycled Material – Mechanical
711-7151-01	Minor Risk Management/Safety
711-7212-01	Grading - Mechanical
711-7215-01	Cutting – Belt Loader
711-7215-02	Cutting – Front End Loader
711-7216-01	Upgrading – Paving Mechanized
711-7311-01	Cleaning – Inlet/Endwall/Basin – Manual/Mechanical
711-7311-02	Cleaning – Inlet Clogged
711-7312-01	Cleaning – Ditch/Drain Chan. Mech.
711-7312-02	Cleaning – Ditch/Drain Chan. Manual
711-7312-03	Cleaning – Swales – Mech.
711-7314-01	Cleaning Pipes and Culverts
711-7315-01	Install Rock Lining
711-7321-01	Replace Inlet and Endwall – Manual
711-7324-01	Replace Pipes and Culverts under 36 inches – Mech.
711-7324-02	Replace Pipes and Culverts over 36 inches– Mech.
711-7324-03	Replace/Install Parallel Pipe
711-7324-04	Drainage – Replacement/Installation Pipes Extension Only
711-7325-01	Repair/Replace Structure under 8-foot Length
711-7326-01	Repair Pipe and Culvert
711-7328-01	Install Subsurface Drain (U-Drain)
711-7332-01	Repair/Install Gabions/Ret. Walls
711-7333-01	Repair Sink Holes/Slides
711-7425-01	Repair/Replace – Bridge over Eight-Foot Length
711-7432-02	Painting - Full
711-7446-01	Repair/Replace – Superstructure Member
711-7447-01	Repair/Replace – Truss Member
711-7448-01	Repair/Replace Backwalls
711-7448-02	Replace/Repair Substructure
711-7448-03	Maintenance – Underpinning
711-7450-01	Maintenance – Repointing
711-7451-01	Repair/Replace Slopewalls
711-7452-01	Repair/Replace – Culverts
711-7453-01	Erosion Protection – Stream Bed/Rock/Deflector
711-7453-03	Erosion Protection – Culverts
711-7454-01	Const./Install – Temporary Supports
711-7455-01	Repair/Replace Slabs/Box Culvert
714-7711-01	Mowing
714-7711-02	Mowing – Tractor Type; Mechanized
714-7711-03	Plant Growth Reg. (PGRs) Herbicide Application
714-7712-01	Herbicide Application – Non-Selective
714-7713-01	Herb Application – Broadcast Foliage
714-7714-01	Herbicide Application: Broadcast Chemical Trimming (Fosamine)
621-2541-01	FHWA Disaster Recovery (Federal Aid Routes): Debris Clearance
621-2544-01	FHWA Disaster Recovery (Federal Aid Routes): Emergency Bridge Repairs
621-2545-01	FHWA Disaster Recovery (Federal Aid Routes): Emergency Shoulder Repairs
621-2546-01	FHWA Disaster Recovery (Federal Aid Routes): Emergency Pipe Installation
621-2549-01	FHWA Disaster Recovery (Federal Aid Routes): Other Costs
663-2541-01	FEMA Disaster Recovery: (Non-Federal Routes) Debris Clearance
663-2544-01	FEMA Disaster Recovery: (Non-Federal Routes) Emergency Bridge Repairs

¹¹ Refer to [PennDOT Publication 113, Maintenance Foreman Manual](#) for detailed descriptions

¹² Same description of activity regardless of the first three numbers indicated – program code may also be 612, 618, 621, 663, 712, 713, or 714

¹³ If conducted in or near (within 300’ of) wetlands occupied or assumed to be occupied by bog turtles

CODE	BRIEF DESCRIPTION
663-2545-01	FEMA Disaster Recovery: (Non-Federal Routes) Emergency Shoulder Repairs
663-2546-01	FEMA Disaster Recovery: (Non-Federal Routes) Emergency Pipe Installation
663-2549-01	FEMA Disaster Recovery: (Non-Federal Routes) Other Costs

Table 4. Transportation Action Effects and Applicable Avoidance and Minimization Measures (AMMs)

PROGRAMMATIC CATEGORY (PC)	DESCRIPTION	Not Likely to Adversely Affect (NLAA) with AMMs										Likely to Adversely Affect (LAA)		
		AMMS 1-9	AMM 10	AMM 11	AMM 12	AMM 13	AMM 14	AMM 15	AMM 16	AMM 17	AMM 18	AMM 19 IN LIEU OF AMMS ¹⁴	AMM 19 FOR OFFSET	
1A	Actions where temporary effects to potential hibernacula ¹⁵ are anticipated to occur without any hydrologic modification.	X	X		X	X	X	X	X	X		X		
1B	Actions where permanent effects to potential hibernacula microhabitat ¹⁴ are anticipated to occur without any hydrologic modification.	X	X		X	X	X	X	X	X	X	X	X	
2A	Actions where temporary effect to potential foraging habitat ¹⁶ are anticipated to occur without any hydrologic modification.	X		X								X		
2B	Actions where permanent effects to potential foraging habitat ¹⁵ are anticipated to occur without any hydrologic modification.	X		X								X	X	
3A	Actions which will occur during the seasonal period of April 1 – October 31 with exclusionary measures and without any permanent hydrologic impacts.	X			X	X	X	X	X	X		X		
3B	Actions which will occur during the seasonal period of November 1 – March 31 associated exclusively with stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat without any permanent hydrologic impacts.	X		X										
4	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	

¹⁴ Requires USFWS concurrence

¹⁵ Hibernacula microhabitat is typical fen/wetland habitat characterized by root mats of woody vegetation, submerged rock crevices, tussocks and sphagnum bog mats.

¹⁶ Foraging habitat is wetland habitat not characterized by persistent groundwater discharge and deep mucky soil conditions.

Table 5. Take Avoidance and Minimization Measure (AMM) Descriptions

AVOIDANCE AND MINIMIZATION MEASURE	AMM REQUIRED FOR	DESCRIPTION
AMM 1	Any Transportation Activity (including maintenance activities identified in Table 3) in all Programmatic Categories (PCs) identified in Table 4.	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) 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.
AMM 2	Any Transportation Activity (including maintenance activities identified in Table 3) in all PCs identified in Table 4.	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 species individuals 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 3	Any Transportation Activity (including maintenance activities identified in Table 3) in all PCs identified in Table 4.	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 species individuals. Any voids in the rock scour protection will be choked with smaller rock and mineral material in order 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.
AMM 4	Any Transportation Activity (including maintenance activities identified in Table 3) in all PCs identified in Table 4.	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. 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.
AMM 5	Any Transportation Activity (including maintenance activities identified in Table 3) in all PCs identified in Table 4.	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.
AMM 6	Any Transportation Activity (including maintenance activities identified in Table 3) in all PCs identified in Table 4.	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 USFWS and Pennsylvania Fish and Boat Commission (PFBC) on their respective relocation activities.
AMM 7	Any Transportation Activity (including maintenance activities identified in Table 3) in all PCs identified in Table 4.	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.
AMM 8	Any Transportation Activity (including maintenance activities identified in Table 3) in all PCs identified in Table 4.	In order to avoid the introduction and spread of invasive species into supporting habitats, minimize the duration of exposed soils, utilize erosion control blankets on disturbed areas immediately after project completion to minimize sedimentation, 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.

AVOIDANCE AND MINIMIZATION MEASURE	AMM REQUIRED FOR	DESCRIPTION
AMM 9	Any Transportation Activity (including maintenance activities identified in Table 3) in all PCs identified in Table 4.	<p>Specific coordination and construction operating procedures approved by the USFWS/PFBC shall be implemented in the event that a bog turtle is encountered during preconstruction exclusion surveys, on-site monitoring, or within the vicinity of the limit of disturbance (LOD) during the course of the action (i.e., construction). These specific procedures include the following:</p> <ul style="list-style-type: none"> • 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 mark the exact location where the turtle was found and 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 - 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. <p>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 USFWS and PFBC is completed and all breaches in the exclusion barrier are repaired.</p> <p>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 USFWS 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 USFWS and PFBC. The qualified surveyor will consult with the USFWS 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.</p> <p>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.</p> <p>If any turtle found appears injured or dead, the qualified bog turtle surveyor will coordinate with the USFWS 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.</p> <p>In order to offset the adverse effects of the take, compensatory mitigation credits will be calculated in accordance with USFWS credit metrics and acquired from a USFWS approved conservation bank.</p>
AMM 10	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1A, 1B or 4 applies	In order to avoid the killing or harm 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.
AMM 11	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 2A, 2B or 3B applies	In order to avoid the killing or harm 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.

AVOIDANCE AND MINIMIZATION MEASURE	AMM REQUIRED FOR	DESCRIPTION
AMM 12	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1A, 1B, 3A or 4 applies	In order to avoid the killing or harm 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 USFWS/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. Any captured individuals will be relocated outside of the project disturbance area into suitable habitat. The USFWS/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 USFWS and PFBC.
AMM 13	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1A, 1B, 3A or 4 applies	In order to avoid the killing or harm 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). Sand bag 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. The exclusionary barrier shall be installed and removed under the supervision of a USFWS/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, 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 USFWS/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 USFWS/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.
AMM 14	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1A, 1B, 3A or 4 applies	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.
AMM 15	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1A, 1B, 3A or 4 applies	In order to avoid the killing or harm of species individuals during the species active period, a USFWS/ PFBC recognized-qualified bog turtle surveyor shall conduct inspections of spoil materials from excavation areas to ensure that species individuals are recovered and relocated.
AMM 16	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1A, 1B, 3A or 4 applies	In order to avoid the killing or harm of individual bog turtles during the species active period, a USFWS/ PFBC recognized-qualified bog turtle surveyor will provide continuous monitoring during the active construction.
AMM 17	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1A, 1B, 3A or 4 applies	A USFWS/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.
AMM 18	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1B or 4 applies	To reduce the amount of take associated with the permanent loss of habitat, a salvage survey effort will be undertaken in conjunction with the USFWS/PFBC to relocate any individuals within the impact area prior to disturbance. Any recovered individuals will be relocated in suitable habitat a maximum of 300 feet from the impact area within the same drainage basin.

AVOIDANCE AND MINIMIZATION MEASURE	AMM REQUIRED FOR	DESCRIPTION
AMM 19	Any Transportation Activity (including maintenance activities identified in Table 3) when PC # 1B or 2AB applies or if approved by USFWS in lieu of other required AMMs	In order to offset the adverse effects for the permanent loss of supporting habitat and/or incidental take, compensatory mitigation credits will be calculated in accordance with USFWS credit metrics and purchased from a USFWS-approved conservation bank with receipt of credit purchase being provided to the USFWS prior to the start of any work. If a conservation bank has not yet been developed, PennDOT/FHWA may adopt an alternate equivalent mechanism, with USFWS concurrence.

3. Standard Operating Procedure (SOP) for Project(s) Submission

- 3.1. **Conduct a Pennsylvania Natural Diversity Inventory (PNDI) Review.** PNDI will identify the potential for a conflict under the jurisdiction of the USFWS if bog turtles may be present. Note that the PNDI has been refined so that projects or activities in urbanized areas in counties within the range of the species should not result in conflicts.

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. 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.

- 3.2. **Complete Project Submittal Form (PSF) or Bog Turtle Programmatic IPaC Effect Determination Key.** When the potential for a conflict with the bog turtle is evident by a PNDI environmental review receipt proceed with determining whether the proposed project adheres to the scope and criteria for the programmatic biological opinion utilizing the PSF¹⁷ or when available the IPaC effect determination key (Dkey) as provided below. Note that the PSF is an interim submittal form process that will be replaced with the IPaC Dkey. Once the Dkey is available the PSF will be phased out.

3.2.1. **PSF Process.** (Complete PSF form found in **Appendix C**)

3.2.1.1. **No Effect.** Determine whether any of the no effect criteria detailed in section 2.1 apply. This will require knowledge of the project or activity details, identification of wetlands within 300' of the proposed activity and a phase I habitat assessment if wetlands are present¹⁸. If one of these criteria applies, your project or activity has no effect on the bog turtle. Document the file by completing the PSF and incorporate this result in NEPA and permitting documents as necessary¹⁹.

3.2.1.2. **May Affect, Not Likely to Adversely Affect (NLAA) by Avoidance.** If a no effect determination does not apply, determine if the project will completely avoid all potential effects on the bog turtle. Provide supporting documentation and submit with a PSF to the USFWS for concurrence.

3.2.1.3. **May Affect, Not Likely to Adversely Affect (NLAA) by Negative Phase II/Phase III Bog Turtle Survey.** The basic premise of the bog turtle programmatic is the ability to assume presence and implement avoidance and minimization measures. This approach provides a streamlined review and reduced costs, therefore conducting a phase II/phase III bog turtle survey is not typical, and should only be pursued in consultation with BOPD-EPDS and FHWA in instances where the programmatic consultation may not be applicable. However, if a phase II/phase III survey has been

¹⁷ The PSF is to be used only during the interim period prior to the IPaC Dkey being available.

¹⁸ There is no requirement to complete a Phase II/III survey (see 2.1.7) and one should not be pursued without prior consultation with BOPD-EPDS and FHWA.

¹⁹ The IPaC effect determination key (under development) will generate "no effect" correspondence.

conducted and the results indicate that the species is not present provide the results of the survey to USFWS with a completed PSF for concurrence in a NLAA.

- 3.2.1.4. **May Affect with Implementation of Avoidance and Minimization Measures.** If the no effect or NLAA effect determinations by avoidance or negative Phase II/III Survey do not apply, complete the sections of the PSF where the programmatic consultation is applicable only when appropriate AMMs are applied. Note that AMMs 1-9 must be applied to all projects requiring AMMs. Additional AMMs must be applied when applicable to the project or maintenance activity and habitat type specific to the project. Detailed project information and a habitat assessment are critical information for accurate completion of these sections of the form. In some infrequent cases, with the concurrence of the USFWS, compensatory mitigation may be permitted in lieu of seasonal restrictions if the seasonal avoidance measures cannot be applied.

Identify with an “X” all AMMs that will be applied to the project. These are project commitments and must be communicated to contractors, maintenance forces and included as special provisions in contracts. The commitments must be certified by the signature of the district environmental manager, ADE-design or district administrator. If it is later determined that one or more of these commitments cannot be met, the programmatic concurrence is void and consultation with the USFWS will need to be re-initiated.

If AMM 19, compensatory mitigation, is applied to the project it will be necessary to identify a commercial banker with USFWS approved available credits. If none are available, alternative mitigation 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 or the application of conservation easements 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 likely to adversely affect (LAA). The USFWS review under the programmatic consultation varies depending on whether the effect is a NLAA or a LAA as follows:

- a. **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 to verify that the submitted project includes implementation of the required AMMs resulting in a NLAA.
- b. **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 will include:

- i. 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.
- ii. 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.

3.2.2. IPaC Effect Determination Key Process (when available)

To begin the process, go to the Information for Planning and Conservation (IPaC) website at <http://ecos.fws.gov/ipac/>. Login to your IPaC account (first time users need to create an account and activate as directed) and follow these steps:

- a. Under “My Projects,” select “Create a Project”;
- b. Enter project location, define the area, confirm and select “Continue”;
- c. A resources page will be displayed that provides trust resource information in the project action area;
- d. Select "Define Project";
- e. Give project name, description and “Save”;
- f. The project home page will be displayed; select "Start Review", and then "Continue";
- g. Skip the official species list step, do not request an official species list (This information is provided by the PNDI and is not required for using the assisted determination key);

- h. A description will be displayed for the bog turtle programmatic Dkey that is applicable to the USFWS programmatic biological opinion;
- i. Select “Check if my project qualifies”;
- j. Answer the questions in the qualification interview (determining applicability of the programmatic);
- k. A preliminary qualification determination is displayed, select “Save and Continue”;
- l. Complete the project questionnaire (a series of questions requiring detailed project information, a phase I habitat survey, and ability to determine which AMMs/commitments will be applied to the project to complete) and select “Continue”;
- m. The determination key result is displayed (No Effect, NLAA or LAA);
 - 1. If a NLAA, the USFWS Pennsylvania Field Office will receive notice of your project and will contact you within 14 days if necessary;
 - 2. If a LAA, the USFWS Pennsylvania Field Office will receive notice of your project and will respond within 30 days;
- n. To generate IPaC automated correspondence for No Effect or NLAA:
 - 1. If you are a federal action agency (FHWA) or designated non-federal representative (PennDOT):
 - i. Submit the project for “Concurrence Verification” to the USFWS,
 - ii. Complete contact information and submit, a “No Effect or Concurrence Letter” will be generated;
 - iii. Select “View Concurrence Verification Letter” (you may wish to print or save a copy for your files),
 - 2. If you are not an FHWA or PennDOT representative (e.g., consultant or local transportation agency):
 - i. Request to generate a “Consistency Letter”,
 - ii. Verify project name and description and select “Generate Consistency Letter”,
 - iii. Select “View Consistency Letter” and save,
 - iv. Provide consistency letter to PennDOT, the designated non-federal representative for submittal to the USFWS via IPaC;

For LAA determinations concurrence letters are not generated. A consistency letter may be generated for the file, however, USFWS must respond with correspondence to complete the consultation process.

Appendix 1

Large Watercourse Habitats with the Extant Range that May Include Reaches Greater than 30' 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 Submittal Form

**Federal Highway Administration and
Pennsylvania Department of Transportation
Programmatic Consultation for
Effects of Transportation Actions on the Bog Turtle Project**

Project Submittal Form (PSF)

The Federal Highway Administration (FHWA) and Pennsylvania Department of Transportation (PennDOT) must complete this submittal form (and documentation) to describe project-level information for use of the programmatic consultation covering transportation actions that May Affect the federally threatened bog turtle (*Clemmys muhlenbergii*). The completed project submittal form (PSF) should be submitted to the USFWS Pennsylvania Field Office prior to project commencement if the project may affect the bog turtle. The PSF will be maintained in the project file without submission to the USFWS for projects that are determined to have No Effect.

By submitting this PSF, the FHWA/PennDOT ensures that the proposed project adheres to the criteria and conditions of the programmatic consultation, as outlined in the biological assessment (BA) and biological opinion (BO). Upon submittal of this PSF, the Pennsylvania Field Office may review the project-specific information provided and request additional information. For projects that result in a No Effect determination, no submission to the USFWS is necessary. An electronic copy of all completed PSFs should be submitted to the PennDOT Environmental Policy and Development Section (EPDS) for tracking and annual reporting purposes.

For projects that May Affect but are Not Likely to Adversely Affect (NLAA), the bog turtle, if the USFWS does not respond with any questions or concerns within 14 calendar days of PSF submission, then it may proceed under the programmatic consultation and assume concurrence of the NLAA determination made by the Service in the BO. For projects that May Affect, and are Likely to Adversely Affect (LAA), the bog turtle, the USFWS will respond within 30 calendar days of receiving a complete project-level submission, which includes, but may not be limited to this completed PSF. A response from the Pennsylvania Field Office must be received prior to the commencement of a LAA activity.

Project Description

1. Date of Submission	
2. Project Representative	Name:
	Title:
	Organization:
	Phone Number:
	Email:
3. Project Name	
4. PennDOT Engineering District	
5. County	
6. Municipality	
7a. PNDI Environmental Review Number	7b. USFWS TAILS #
8. Project Description: (Attach Necessary Documentation, Engineering Plans, Habitat Assessment Reports, Survey Reports, List Maintenance Assemblies for Maintenance Activities, etc.)	

Programmatic Consultation Consistency Determination Rationale

I. NO EFFECT DETERMINATION (No submission to USFWS, submit an electronic copy to EPDS and retain PSF with documentation in project file)

(X)	Basis of Determination
	Project Not Located Within 300 Feet of Wetland OR Wetland within 300' has negative Phase I assessment signed by qualified bog turtle surveyor (QBTS) <i>(Submittal Form Complete)</i>
	Project Associated With Maintenance Activity Determined To Have No Effect on the Species. Publication 113 does not reference the bog turtle within the proposed assembly(ies). <i>(Submittal Form Complete)</i>
	Project Limited to the Main Channel 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>(Submittal Form Complete)</i>

II. MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION

(X)	Basis of Determination
	Wetland Phase I habitat assessment not done by QBTS AND 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>

III. MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION

(X)	Basis of Determination
	Negative Phase II/Phase III Bog Turtle Survey <i>(Submit Form to USFWS - Survey Results Must Be Provided to the USFWS for Concurrence)</i>

IV. MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION WITH THE IMPLEMENTATION OF AMMs

(X)	Basis of Determination
	Transportation maintenance actions determined by FHWA/PennDOT to May Affect, and concurred in by the USFWS in the programmatic biological opinion if conducted in or near wetlands occupied or assumed to be occupied by bog turtles with application of AMMs 1-9. Alternatively, AMM 19 may be utilized with the concurrence of the USFWS instead of AMMs 1-9. Publication 113 identifies maintenance assembly(ies) that May Affect the bog turtle. <i>(Submit Form to USFWS)</i>

V. MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION WITH THE IMPLEMENTATION OF AMMs – PROGRAMMATIC CATEGORY 1A ACTION

(X)	Basis of Determination
	For projects where temporary effects to potential hibernacula microhabitat are anticipated to occur then, in addition to AMMs 1-10, AMMs 12-17 must be applied where appropriate and applicable, for use of this programmatic consultation. Alternatively, AMM 19 may be utilized with the concurrence of the USFWS instead of the application of AMMs 1-0 and 12-17. <i>(Submit Form to USFWS)</i>

VI. MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION WITH THE IMPLEMENTATION OF AMMs – PROGRAMMATIC CATEGORY 1B ACTION

(X)	Basis of Determination
	For projects where permanent effects to potential hibernacula microhabitat are anticipated to occur then, in addition to AMMs 1-10, AMMs 12-19 must be applied where appropriate and applicable, for use of this programmatic consultation. Alternatively, AMM 19 may be utilized with the concurrence of the USFWS instead of the application of AMMs 1-10 and 12-17. <i>(Submit Form to USFWS)</i>
#	Acres
Area of Permanent Habitat Impact	

VII. MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION WITH THE IMPLEMENTATION OF AMMs – PROGRAMMATIC CATEGORY 2A ACTION

(X)	Basis of Determination
	For projects where temporary effects to potential foraging microhabitat are not anticipated to occur, then AMMs 1-9 and AMM 11 must be applied where appropriate and applicable, for use of this programmatic consultation. Alternatively, AMM 19 may be utilized with the concurrence of the USFWS instead of the application of AMM 11. <i>(Submit Form to USFWS – Include Justification for USFWS if AMM 19 is Proposed)</i>

VIII. MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION WITH THE IMPLEMENTATION OF AMMs – PROGRAMMATIC CATEGORY 2B ACTION

(X)		Basis of Determination
		For projects where permanent effects to potential foraging microhabitat are not anticipated to occur, then AMMs 1-9, AMM 11, and AMM 19 must be applied where appropriate and applicable, for use of this programmatic consultation. Alternatively, AMM 19 may be utilized with the concurrence of the USFWS instead of the application of AMM 11. <i>(Submit Form to USFWS – Include Justification for USFWS if AMM 19 is Proposed)</i>
#	Acres	Area of Permanent Habitat Impact

IX. MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION WITH THE IMPLEMENTATION OF AMMs – PROGRAMMATIC CATEGORY 3A ACTION

(X)		Basis of Determination
		For projects which will occur during the seasonal period of April 1 – October 31, then AMMs 1-9, and AMMs 12-17 associated with Exclusionary Measures must be applied where appropriate and applicable, for use of this programmatic consultation. Alternatively, AMM 19 may be utilized with the concurrence of the USFWS instead of the application of AMMs 12-17. <i>(Submit Form to USFWS – Include Justification for USFWS if AMM 19 is Proposed)</i>

X. MAY AFFECT – NOT LIKELY TO ADVERSELY AFFECT DETERMINATION WITH THE IMPLEMENTATION OF AMMs – PROGRAMMATIC CATEGORY 3B ACTION

(X)		Basis of Determination
		For projects which will occur during the seasonal period of November 1 – March 31 associated exclusively with stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat, then AMMs 1-9, and AMMs 11 must be applied where appropriate and applicable, for use of this programmatic consultation. <i>(Submit Form to USFWS)</i>

XI. MAY AFFECT – LIKELY TO ADVERSELY AFFECT DETERMINATION WITH THE IMPLEMENTATION OF AMMs – PROGRAMMATIC CATEGORY 4 ACTION

(X)		Basis of Determination
		For projects where the hydrology of supporting habitat will be permanently affected by the action implementation of AMMs 1-9, AMM 10, and AMMs 12-19 are required for the use of this programmatic consultation. <i>(Submit Form to USFWS)</i>

**PROGRAMMATIC AMMs COMMITTED FOR IMPLEMENTATION WITH THE
 TRANSPORTATION PROJECT**

(X)	AVOIDANCE AND MINIMIZATION MEASURES
	<p>AMM 1 - Ensure that all operators, employees, and contractors working in areas of known, or assumed occupied bog turtle habitat are aware of all PennDOT environmental commitments, including all applicable AMMs, PA DEP permit conditions, and USACE permit conditions. Sensitivity training and briefing materials should 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.</p>
	<p>AMM 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 species individuals as well as accidental sedimentation and filling of adjacent wetland habitats that may potentially support the species. All best management practices will be properly installed and maintained in accordance with the County Conservation District and PA DEP. The project site will be monitored daily to ensure the erosion and sedimentation control practices are implemented and properly maintained, and to identify any project related impacts due to sediment accumulation.</p>
	<p>AMM 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 species individuals. Any voids in the rock scour protection will be choked with smaller rock and mineral material in order 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.</p>
	<p>AMM 4 - All storage and dispensing of vehicular fuels and fluids will occur at least 300 feet from the action's limit of disturbance and any aquatic habitats present. 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. The project site will be monitored daily to ensure spill avoidance/remediation practices are implemented.</p>
	<p>AMM 5 - Project storage and staging areas will be located only in upland areas away from wetland/watercourse habitat areas. This shall include all areas required for stockpiles, equipment storage, and parking.</p>
	<p>AMM 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 USFWS/PFBC on their respective relocation activities.</p>
	<p>AMM 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.</p>
	<p>AMM 8 - In order to avoid the introduction and spread of invasive species into supporting habitats, minimize the duration of exposed soils, utilize erosion control blankets on disturbed areas immediately after project completion to minimize sedimentation, and promptly re-vegetate areas of temporary disturbance with native wetland mix 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.</p>

(X)	AVOIDANCE AND MINIMIZATION MEASURES
	<p>AMM 9 – Specific coordination and construction operating procedures approved by the USFWS/PFBC shall be implemented in the event that a bog turtle is encountered during preconstruction exclusion surveys, on-site monitoring, or within the vicinity of the limit of disturbance (LOD) during the course of the action (i.e. construction). These specific procedures include the following:</p> <p>A. 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 - 1 inch of water should be placed in the bucket with the turtle to keep the animal cool and hydrated. The bucket should be placed in a quiet, well-shaded area. The turtle should be handled as little as possible, and temporary containment must not exceed 6 hours.</p> <p>B. 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 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 remain ceased until coordination with the USFWS and PFBC is completed. Construction will remain ceased until all breaches in the exclusion barrier are repaired.</p> <p>C. 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 USFWS and PFBC. The elapsed time for contacting both agencies should 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 USFWS and PFBC. The qualified surveyor will consult with the USFWS 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.</p> <p>D. 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.</p> <p>E. If any turtle found appears injured or dead, the qualified bog turtle surveyor will coordinate with the USFWS 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.</p>
	<p>AMM 10 - In order to avoid the killing, harm, or harassment of brumating species individuals 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.</p>
	<p>AMM 11 - In order to avoid the killing, harm, or harassment of species individuals during the species active period, the action will be completed during the inactive season for the species between November 1 and March 31.</p>
	<p>AMM 12 - In order to avoid the killing, harm, or harassment of species individuals during the species active period, an exclusionary survey to remove any bog turtle individuals within 300-feet of an action will be conducted by a USFWS/PFBC recognized-qualified bog turtle surveyor immediately prior to the commencement of the action. Exclusionary 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. Any captured individuals would be relocated outside of the project disturbance area. The USFWS/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 USFWS and PFBC.</p>

(X)	AVOIDANCE AND MINIMIZATION MEASURES
	<p>AMM 13 - In order to avoid the killing, harm, or harassment of species individuals 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. Sand bag 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. The exclusionary barrier shall be installed and removed under the supervision of a USFWS/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, 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 USFWS/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 USFWS/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.</p>
	<p>AMM 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.</p>
	<p>AMM 15 - In order to avoid the killing, harm, or harassment of species individuals during the species active period, a USFWS/PFBC recognized-qualified bog turtle surveyor shall conduct inspections of spoil materials from excavation areas to ensure that species individuals are recovered and relocated.</p>
	<p>AMM 16 - In order to avoid the killing, harm, or harassment of species individuals during the species active period, a USFWS/PFBC recognized-qualified bog turtle surveyor will provide continuous monitoring during the fulfillment of the activity.</p>
	<p>AMM 17 - A USFWS/PFBC recognized-qualified bog turtle surveyor will be retained throughout the duration of the transportation action to monitor the effectiveness of the implemented avoidance and minimization measures. The surveyor will also provide recommendations to PennDOT and the FHWA concerning the implementation of the necessary measures.</p>
	<p>AMM 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 USFWS/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.</p>
	<p>AMM 19 - In order to offset the adverse effects for the permanent loss of supporting habitat and/or incidental take, compensatory mitigation credits will be calculated in accordance with USFWS credit metrics and acquired purchased from a USFWS approved conservation bank with receipt of credit purchase being provided to USFWS prior to the start of any work.</p>

Programmatic Category Actions and Application of AMMs Summary

PROGRAMMATIC CATEGORY	DESCRIPTION	AMMs 1-9	AMM 10	AMM 11	AMM 12	AMM 13	AMM 14	AMM 15	AMM 16	AMM 17	AMM 18	AMM 19 in lieu of AMMs ¹	AMM 19 for Offset
1A	Actions where temporary effects to potential hibernacula are anticipated to occur without any hydrologic modification.	X	X		X	X	X	X	X	X		X	
1B	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	X
2A	Actions where temporary effects to potential foraging habitat are anticipated to occur without any hydrologic modification.	X		X								X	
2B	Actions where permanent effects to potential foraging habitat are anticipated to occur without any hydrologic modification.	X		X								X	X
3A	Actions which will occur during the seasonal period of April 1 – October 31 with exclusionary measures and without any permanent hydrologic impacts.	X			X	X	X	X	X	X		X	
3B	Actions which will occur during the seasonal period of November 1 – March 31 associated exclusively with stream corridors or upland habitats in the vicinity of occupied/assumed supporting wetland habitat without any permanent hydrologic impacts.	X		X									
4	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

¹ Requires USFWS concurrence

XII. AMM 19 DESCRIPTION OF COMPENSATORY MITIGATION CREDIT ACQUISITION

Conservation Bank Information Name: Location: Bank Proprietor: Credits To Be Purchased:

XIII. 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: _____

XIV. 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 not consistent with the programmatic consultation; additional information/coordination is requested.
	Project as proposed is not consistent with the programmatic consultation and requires individual consultation.

Appendix 3

Bog Turtle Exclusion Barrier Specifications

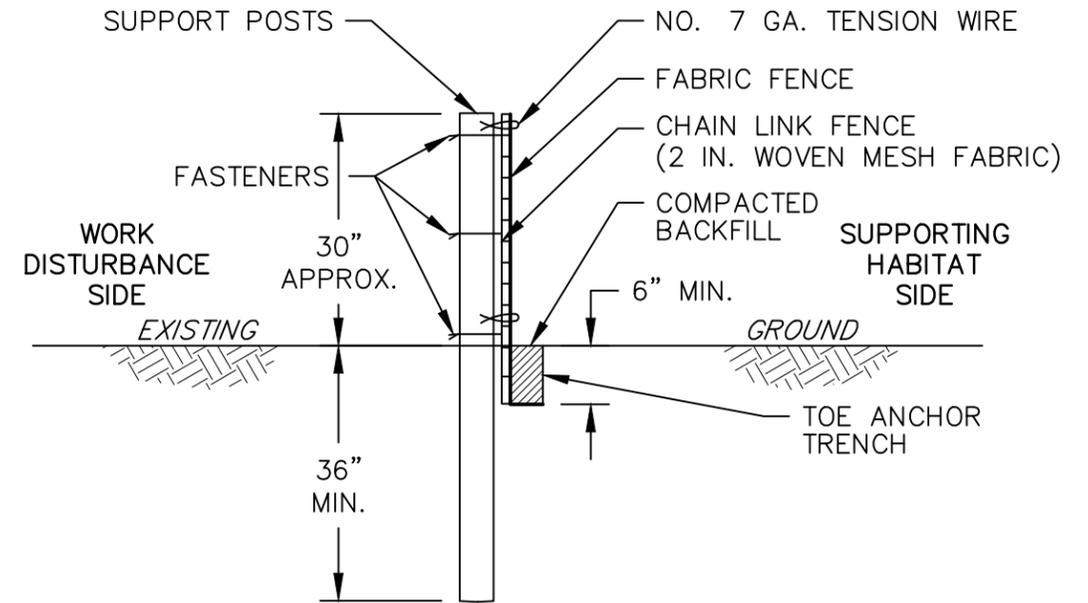
BOG TURTLE EXCLUSION BARRIER SPECIFICATIONS

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.

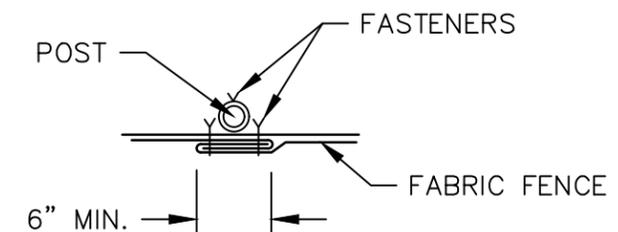
2. THE EXCLUSIONARY BARRIER IS TO BE INSTALLED A MINIMUM OF 6-INCHES INTO THE UNDERLYING HABITAT WHERE APPROPRIATE. THE INSTALLATION/REMOVAL OF THE EXCLUSIONARY BARRIER MUST BE COMPLETED BY HAND THROUGH WETLAND HABITATS. THE INSTALLATION/REMOVAL OF THE EXCLUSIONARY BARRIER THROUGH UPLAND HABITATS MAY 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