

## Ecology

# Bat Programmatic Agreement Users' Guide

Overview

Section 1 – Programmatic Agreement Summary

Section 2 – Project-specific Processes Under the BPA

GDOT Bat Conservation Fund

Joint Replacement and Copolymer Procedure

Frequently Asked Questions

## OVERVIEW

This guidebook was developed to provide a user-friendly companion resource for the [\*Collaborative Programmatic Agreement for Federally Listed and State Protected Bats in Georgia \(BPA\)\*](#) and transportation activities statewide. Section 1 is a general description of the process and factors considered in the development of the *BPA*. Section 2 describes the project-specific process for implementing the components of the *BPA* for GDOT staff and consultants.

## SECTION 1 – PROGRAMMATIC AGREEMENT SUMMARY

### Purpose

The intent of the *BPA* is to implement a statewide consultation for protected bat species (federal and state) for a variety of transportation projects that will streamline the regulatory process and result in better conservation outcomes for bat species. This users' guide was developed to instruct Georgia Department of Transportation Office of Environmental Services (GDOT) staff and consultants when working on projects throughout Georgia that may affect federally listed and state protected species.

The consultation framework presented within the *BPA* is applicable for federally listed and proposed species requiring consultation/conference with U.S. Fish & Wildlife Service, Georgia Ecological Services (USFWS). Additionally, it satisfies the Georgia Department of Natural Resources, Wildlife Resources Division (GADNR) technical assistance process for state protected species.

## Involved Agencies

The *BPA* was developed jointly between the Federal Highway Administration, Georgia Division (FHWA); U.S. Army Corps of Engineers, Savannah District (USACE); USFWS; GDOT; and GADNR.

For GDOT projects that require an action by FHWA or require the use of federal-aid funds, FHWA is the Lead Federal Agency (LFA) for the purposes of consultation with USFWS under §7 of the [Endangered Species Act \(ESA\) of 1973](#). For GDOT projects that do not require an action by FHWA and do not require the use of federal-aid funds, but do require a permit from USACE, USACE is the LFA for the purposes of consultation with USFWS under §7 of the ESA.

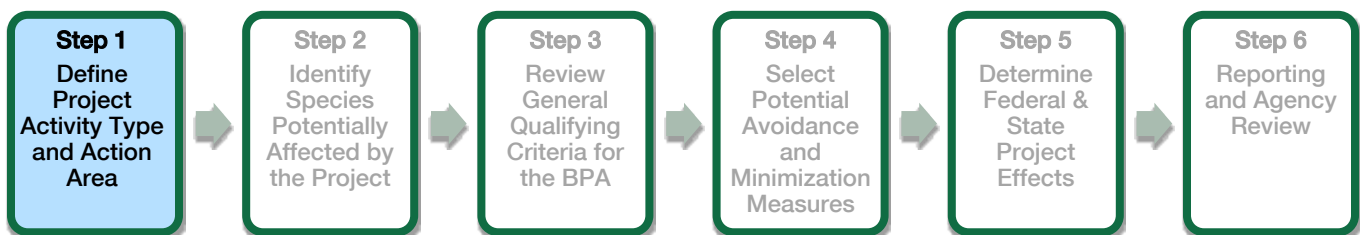
Additionally, all bat species are protected by [Georgia Endangered Wildlife Act \(GEWA\) of 1973 \(O.C.G.A. §27-3-130\)](#). As such, the *BPA* addresses the coordination process and necessary conservation measures for bat species and occurrences under the purview of GADNR that are not addressed under the federal §7 process.

## SECTION 2 - PROJECT-SPECIFIC PROCESSES UNDER THE *BPA*

This *BPA* establishes the components for consultation/coordination with LFA, USFWS, and GADNR. Given the varied nature of the transportation activities included, it is important to review the proposed actions in detail to ensure compliance with the qualifying terms of the *BPA*.

The steps below should be followed when developing GDOT commitments, making effects determinations, and developing timelines and submittals for each project.

### Step 1 - Define Project Activity Type and Action Area



### Roadway Project Activity Types

Activity types help determine which AMMs should be used during project activities. Listed below are types of roadway project activities for consideration under the *BPA* that may affect federally listed and state protected bat species in Georgia. Detailed definitions and the actions of each activity type can be found within the *BPA* document.

**Table 1.** GDOT activity types included in the *BPA*.

Activity Type	Activities Covered
<b>New Roadway and Structure Construction</b>	Staging areas, offsite use areas, site preparation, culvert installation, bridge construction, roadway construction, and post construction.
<b>Safety and Mobility</b>	Traffic camera, fiber-optic cable, traffic sign, and weather station installation/maintenance.
<b>Maintenance, Preservation, and Facilities Improvements</b>	Bridge repair, retrofit, and maintenance, scour repair projects, seismic retrofit projects, deck repair and replacement projects, maintenance projects, drainage system repair and maintenance, Pavement/facilities preservation.
<b>Slide Abatement</b>	Landslides, rockfall, debris flow, slope erosion and failure, and settlement.
<b>Bank Stabilization, Flood Damage, and Sinkhole Repair</b>	Bank stabilization, flood damage repair, and sinkhole repair.
<b>Blasting</b>	Production (large amount of burden) and controlled blasting (final slope face).
<b>Transportation Alternatives</b>	Installation of pedestrian and bicycle facilities, construction of overlooks and viewing areas, historic preservation, vegetation management, and construction of recreational trails.
<b>Other Common Activities</b>	Geotechnical drilling and hazardous waste sampling.
<b>Herbicide Application</b>	Invasive plant species control and erosion control seeding areas.

### Project Action Area

The *BPA* was developed for the entire state of Georgia and constitutes the action area for the collaborative consultation. It includes the known or assumed ranges of the IBAT, NLEB, GBAT, and TCB that would be affected directly or indirectly by a project's components as described below.

Project Action Areas are all areas to be affected directly or indirectly by the project-specific federal action (or for consideration by state agencies if there is no federal involvement) and not merely the immediate area involved in the action. The Project Action Area is specific to the PI number(s) assigned to specific maintenance, enhancement, and construction projects. In certain cases, multiple PI numbers may be grouped into project and letting *BPA* packages that may contain multiple cumulative activities to consider in effects

determinations for listed species. In general, the Project Action Areas are identified within GDOT procedures as the Environmental Survey Boundary (ESB).

### Step 2 - Identify Species Potentially Affected by the Project



The *BPA* covers all bat species in Georgia. There are four species either federally listed or proposed for listing under the ESA in Georgia. The GEWA grants state protections to four species (TCB to be added as a fifth upon federal listing). Additionally, all species in Georgia are protected as nongame species by state law ([O.C.G.A. §27-1-28](#)).

**Table 2.** Federal and State Listed Bats of Georgia. Full species descriptions and information for all bats of Georgia can be found in the *BPA*.

Species Name	Scientific Name	SWAP Priority Species	Federal Status	State Status	Environment within the Action Area
Gray bat	<i>Myotis grisescens</i>	Yes	E	E	May utilize bridges for transient, bachelor, or maternity roosts. Foraging stream corridors may occur within ROW. Nearby cave or cave-like features may be affected.
Indiana bat	<i>Myotis sodalis</i>	Yes	E	E	May rarely utilize bridges or culverts for transient, bachelor, maternity, or winter roosts. Summer-occupied trees may occur within ROW. Nearby winter cave or cave-like features may be affected.
Northern long-eared bat	<i>Myotis septentrionalis</i>	Yes	E	E	May rarely utilize bridges or culverts for transient, bachelor, or maternity roosts. Summer-occupied trees may occur within ROW. Nearby winter cave or cave-like features may be affected.
Tri-colored bat	<i>Perimyotis subflavus</i>	Yes	PE	NL	May utilize bridges and culverts year-round. Summer-occupied trees may occur within ROW. Nearby winter cave or cave-like features may be affected.

Species Name	Scientific Name	SWAP Priority Species	Federal Status	State Status	Environment within the Action Area
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	Yes	NL	R	May utilize bridges and structures for roosting habitat. Year-round occupied hollow trees may occur within ROW. Nearby winter cave or cave-like features may be affected.

*E = Endangered; PE = Proposed Endangered; NL = Not Listed; R = Rare*

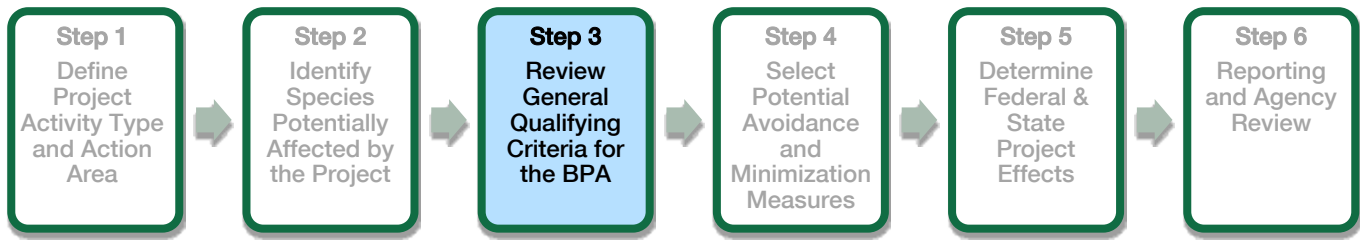
### Desktop Assessment of Potential Bat Species

Determining which species of bats may be of concern for projects will follow existing procedures discussed in GDOT's *Protected Species Survey, Avoidance, and Minimization* guidebook, including instructions for using the [USFWS Information for Planning and Consultation \(IPAC\)](#) web portal and the [Georgia's Natural, Archaeological, and Historic Resources GIS \(GNAHRGIS\) Ecology Review and Survey Module](#). Please note that GDOT and the LFAs have agreed to consult on TCB for all projects in Georgia, even if TCB is not present on the IPAC or GNAHRGIS species lists. This is to avoid potential project delays and reinitiation of consultation if the range continues to expand as new data become available.

### Field Assessment of Bat Presence/Absence

Conducting bat assessments is standard procedure for all GDOT projects involving bridge, culvert (3 feet or greater, except those structures made of corrugated metal), and structure maintenance, construction, or demolition. Survey requirements may depend on the types of transportation activities involved, the timing of the proposed activities, and the species of bats that could be present. Bat assessments will be conducted within two years of project letting, and/or a pre-construction assessment will be performed within 14 days of the start of construction (as described in the applicable Special Provision 107.23H for the project). Forest/structure habitat assessment and presence/absence surveys will follow GDOT's *State of Georgia Protected Species Habitat & Presence/Absence Survey Methodologies Manual*. If an abandoned structure, such as a building, is located within the ESB during the ecology field survey, the project ecologist shall contact GADNR to assist in a bat assessment of the abandoned structure. This bat assessment should be done prior to ROW authorization or structure demolition.

**Step 3 – Review General Qualifying Criteria for the *BPA***



Activities with associated conditions described below are eligible for consideration in the *BPA*. These are general criteria, and users should further consult following AMM and effect determination steps to evaluate project coordination and commitment needs.

**Table 3.** General qualifying criteria to determine if a project falls within or outside the scope of the *BPA*.

**Project activities within the scope of the *BPA* and do not require project-specific coordination with USFWS**

A project within 0.5 mile from IBAT, NLEB, GBAT and/or TCB known cave or cave-like hibernacula that:

- Does not involve any construction (e.g., bridge/culvert and structure bat assessments, surveys, planning and technical studies, property inspections, and property sales), or
- Does not cause any stressors to the bat species (e.g., roadway striping, unlighted road signage, railroad crossing signals, signal lighting, minor road repair such as asphalt fill of potholes, among others), or
- Only tree removal/trimming at existing building and associated parking areas or are located within highly developed urbanized areas generally devoid of native vegetation (including isolated trees surrounded by expansive anthropogenic development), and

A project more than 0.5 mile from IBAT, NLEB, GBAT and/or TCB known cave or cave-like hibernacula that:

- Does not raise the road profile above the tree canopy within 1,000 feet of documented habitat, or
- Does not impact a known hibernaculum or a karst feature (e.g., sinkhole, losing stream, or spring) that could result in effects to a known hibernaculum,
- Does not require greater than 1 acre of tree clearing regardless of time of year, or
- Does not require tree clearing during the pup season (May 1 to July 31), and the total project tree clearing area is less than 100 acres; and

A project with bridge/culvert or structure removal, replacement, or maintenance activities with:

- No signs of bats (e.g., bats, guano), or
- Less than 5 federally listed bat or less than 50 state protected bats and with no pups present, and suitable roosting habitat is maintained, or
- Federally listed bat occurrence of 5 or more bats without the presence of pups, but the work does not disturb bats and suitable roosting habitat is maintained, or

- Occurrence of 50 or more state protected bats, but the work does not disturb bats and suitable roosting habitat is maintained.

**Project activities within the scope of the BPA that require additional project-specific coordination with USFWS and/or GADNR during the development of the Ecology Resource Survey and Assessment of Effects Report (ERSAOER)**

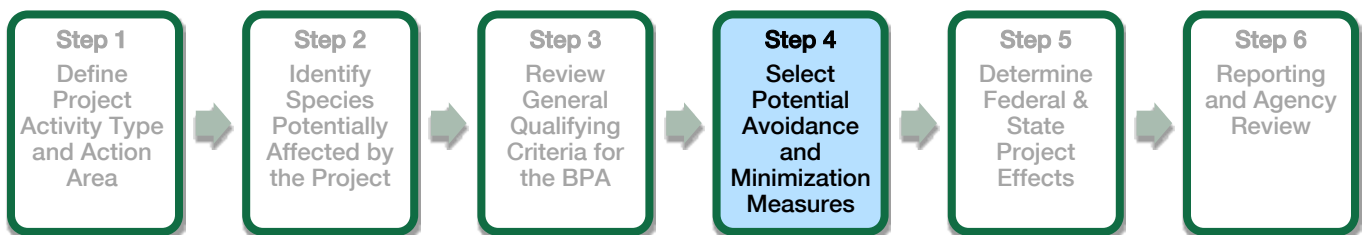
- Require tree clearing activities that exceeds 1 acre during pup season (May 1 to July 31), or
- Require tree clearing that exceeds 100 acres per project, or
- Bridge/culvert or structure removal, replacement, or maintenance activities with 5 or more federally listed bats, presence of federally listed pups, or 50 or more state protected bats, or
- May have undetermined stressors that could affect listed and/or proposed bats, or
- May require additional information about the bat presence and usage of an activity area, or
- Will require blasting activities for road cuts, bridge approach grades, or other significant land contour altering activities.

**Project activities that require technical assistance with USFWS and/or GADNR during the development of the ERSAOER to determine if they're within the scope**

- Any construction activity within 0.5 mile of IBAT, NLEB, GBAT, and/or TCB known cave or cave-like hibernacula (e.g. not a transportation structure) and/or
- Any project that includes activities that cause stressors (i.e., involve ground disturbance, vibrations, blasting, pile driving, alteration of subsurface drainage patterns, noise above background levels, temporary or new/additional permanent lighting, tree removal/trimming) within 0.5 mile of IBAT, NLEB, GBAT, and/or TCB known cave or cave-like hibernacula (e.g. not a transportation structure)

**Note: Caves are identified in the GNAHRGIS species list provided in early coordination with GADNR. Please request technical assistance with GADNR or USFWS to determine if caves identified in early coordination are known to be occupied by listed species.**

**Step 4 – Select Potential Avoidance and Minimization Measures**



After defining the activity types and actions to be performed as part of the project and which species could potentially be affected by the proposed project, the appropriate AMMs should be identified. Once the project has been determined to qualify for programmatic coverage under the BPA (Step 3), the following AMMs should be selected according to the

timing and conditions of the proposed project. The formal effects determination for the project can then be identified in Step 5.

**AMMs for Federally Listed Bat Species**

The following AMMs are applicable for federally listed species identified for the project. A notation is made for the stage at which the AMM commitment is made. “Preconstruction assessment” indicates a commitment to be made during the environmental assessment and design process, while “Special Provision” indicates a commitment to be included within special provisions contained within contractor plans and/or conditions observed at the beginning of construction.

**Table 4.** List of AMMs for Federally Listed Bat Species

Stressor and AMMs	Description	Preconstruction AMM	Special Provision AMM
<b>General</b>			
<b>General AMM 1</b>	Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all GDOT environmental commitments, including all applicable AMMs.	X	
<b>Tree Removal</b> <i>The word “trees” as used in the AMMs refers to trees that are suitable habitat for TCB.</i> <i>Note: For projects that are unable to comply with tree removal AMMs, please contact USFWS for project specific review to determine if project specific AMMs can be implemented to comply with the programmatic agreement.</i>			
<b>Tree AMM 1</b>	Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal in excess of what is required to implement the project safely. Note that Tree Removal AMM 1 is a minimization measure, and the full implementation of which may not always be practicable.	X	
<b>Tree AMM 2</b>	Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).	X	



<b>Tree AMM 3</b>	<p>Restrict tree removal to greater than one acre within suitable TCB habitat from May 1 to July 31.</p> <p>Note: The timing of tree removal is assumed based on projected let date. In rare instances, USFWS may request seasonal restrictions to include in a Special Provision.</p>	X	
<b>Stressor and AMMs</b>	<b>Description</b>	<b>Preconstruction AMM</b>	<b>Special Provision AMM</b>
<b>Lighting</b>			
<b>Lighting AMM 1</b>	Direct temporary lighting away from suitable habitat during the active season.		X
<b>Lighting AMM 2</b>	When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting).	X	
<b>Water Quality</b>			
<i>The following AMM is REQUIRED for projects that occur within the range of GBAT.</i>			
<b>Water Quality AMM 1</b>	Utilize BMPs, containment measures, and/or enhanced sediment and erosion control techniques to protect water quality.		X
<b>Bridges</b>			
<i>The following Bridge AMMs are REQUIRED unless bridge assessments have occurred within two years of project letting and no federally listed bats were found.</i>			
<b>Bridge AMM 1</b>	To avoid effects to roosting bats, perform any bridge removal, replacement, and/or maintenance work outside of the non-volant pup season (April 1 to July 31). If bridge removal, replacement, and/or maintenance work must be performed during the non-volant pup season (April 1 to July 31) OR if federally listed bats are present at any time of year, then follow Bridge AMMs 2 & 3.		X

<p><b>Bridge AMM 2</b></p>	<p>If bridge assessment surveys suggest presence of less than five federally listed bats and no pups are present, the following types of work can generally be conducted with the presence of bats:</p> <ul style="list-style-type: none"> <li>• Above deck work where construction equipment/materials do not extend to the underside of deck where bats may be located (e.g., materials that may drip down to underside of deck) or does not include percussives (vibration) or noise levels above general traffic (e.g., road line painting, wing-wall work).</li> <li>• Below deck work that is conducted away from roosting bats and does not involve percussives or noise level above general traffic (e.g., wing-wall work, some abutment, beam end, scour, or pier repair).</li> <li>• Joint replacement and copolymer overlay following the procedure provided in Appendix B of the <i>BPA Guidebook</i>.</li> </ul> <p>If species identification is uncertain, presence of federally listed bats should be assumed.</p>	<p>X</p>	<p>X</p>
<p><b>Bridge AMM 3</b></p>	<p>If assuming presence of bats, or if bridge assessment or P/A surveys suggest presence of federally listed bats, ensure suitable roosting habitat is maintained. Suitable roosting sites may be incorporated into the design of a new bridge.</p>	<p>X</p>	
<p><b>Bridge AMM 4</b></p>	<p>If excluding bats to complete the project is necessary, coordinate with USFWS to develop additional AMMs for the project special provisions to be included with the contractor bid package.</p> <p>Note: Prioritize coordination and installation of exclusionary measures during preconstruction phase</p>	<p>X</p>	<p>X</p>
<p>Stressor and AMMs</p>	<p>Description</p>	<p>Preconstruction AMM</p>	<p>Special Provision AMM</p>
<p><b>Culverts</b></p> <p><i>The following Culvert AMMs are REQUIRED unless culvert assessments have occurred within two years of project letting and no federally listed bats were found.</i></p>			

<p><b>Culvert AMM 1</b></p>	<p>To avoid effects to roosting bats, perform any culvert removal, replacement, and/or maintenance work from April 1 to October 15 unless federally listed bats are present.</p> <p>If culvert removal, replacement, and/or maintenance work must be performed outside of the April 1 to October 15 period or if federally listed bats are present, then follow Culvert AMMs 2 &amp; 3.</p>		<p>X</p>
<p><b>Culvert AMM 2</b></p>	<p>If culvert assessment or P/A surveys suggest presence of less than five federally listed bats, and work is conducted outside of the April 1 to October 15 period, the following types of work can generally be conducted with the presence of bats:</p> <ul style="list-style-type: none"> <li>• Work where construction equipment or materials do not enter the culvert.</li> <li>• Work inside the culvert that is conducted away from roosting bats and does not involve percussives or noise level above general traffic (e.g., wing-wall work, scour, or pier concrete repair).</li> </ul>	<p>X</p>	<p>X</p>
<p><b>Culvert AMM 3</b></p>	<p>If assuming presence of bats, or if culvert assessment suggests presence of federally listed bats, ensure suitable roosting habit is maintained. Suitable roosting sites may be incorporated into the design of a new culvert.</p>	<p>X</p>	
<p><b>Culvert AMM 4</b></p>	<p>If excluding bats to complete the project is necessary, coordinate with USFWS to develop additional AMMs for the project special provisions to be included with the contractor bid package.</p> <p>Note: Prioritize coordination and installation of exclusionary measures during preconstruction phase.</p>	<p>X</p>	<p>X</p>
<p><b>Stressor and AMMs</b></p>	<p><b>Description</b></p>	<p><b>Preconstruction AMM</b></p>	<p><b>Special Provision AMM</b></p>

**Structures**

*The following AMMs are REQUIRED unless structure assessments have occurred within two years of project letting and no federally listed bats were found.*

<b>Structure AMM 1</b>	If the goal of the project is to exclude bats, coordinate with USFWS and follow Acceptable Management Practices for Bat Control Activities in Structures guidance document (USFWS 2015).	X	
<b>Structure AMM 2</b>	If structure maintenance, repair, and/or alteration will be performed <u>outside</u> the active season of April 1 to October 15, determine if work will occur in an area with hibernating bats. If hibernating bats or signs of frequent bat activity are observed, GDOT will conduct maintenance activity or similar structure alteration in a manner that will not disturb bats using the structure.	X	
<b>Structure AMM 3</b>	If structure maintenance, repair, and/or alteration will be performed <u>during</u> the active season of April 1 to October 15, determine if work will occur in an area with roosting bats. If bat activity or signs of frequent bat activity (e.g., guano stains) are observed, GDOT will conduct maintenance activity or similar structure alteration in a manner that will not disturb bats using the structure.	X	
<b>Hibernacula</b>			
<b>Hibernacula AMM 1</b>	For projects located within 0.5 mile of any named cave as determined during early coordination with GADNR, on-site personnel will use BMPs, secondary containment measures, or other standard spill prevention and countermeasures to avoid impacts to the possible hibernacula. Where practicable, a 300-foot buffer will be employed in these instances to separate fueling areas and other major contaminant risk activities from caves, sinkholes, losing streams and springs.	X	

**AMMs for State Protected Bats**

The following AMMs are specific to projects where federally listed bats are either not a concern or will be considered in addition to AMMs required in Table 5. These AMMs should be implemented for all species that occur in Georgia. Generally, these AMMs are required to reach a determination of No Significant Adverse Effects (NSAE) to state protected species. A notation is made for the stage at which the AMM commitment is made. “Preconstruction assessment” indicates a commitment to be made during the environmental assessment and design process, while “Special Provision” indicates a commitment to be included within

special provisions contained within contractor plans and/or conditions observed at the beginning of construction.

**Table 5.** List of AMMs for State Protected Bat Species

Stressor and AMMs	Description	Preconstruction AMM	Special Provision AMM
<b>General</b>			
<b>General AMM 1</b>	Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all GDOT environmental commitments, including all applicable AMMs.	X	
<b>Tree Removal (Rafinesque's big-eared bat habitat)</b>			
<b>Tree AMM 1</b>	If suitable roost trees for Rafinesque's big-eared bat are identified during Phase 1 surveys, avoid conducting tree removal/trimming from April 1 to July 31 and December 1 to February 28.	X	X
<b>Tree AMM 2</b>	If occupied roost trees for Rafinesque's big-eared bat are identified during Phase 2 surveys, avoid removal of these trees.	X	
Stressor and AMMs	Description	Preconstruction AMM	Special Provision AMM
<b>Bridges</b>			
<i>The following Bridge AMMs are REQUIRED unless bridge assessments have occurred within two years of project letting and no bats were found.</i>			
<b>Bridge AMM 1</b>	To avoid effects to roosting bats, perform any bridge removal, replacement, and/or maintenance work outside of the non-volant pup season (April 1 to July 31). If bridge removal, replacement, and/or maintenance work must be performed during the non-volant pup season (April 1 to July 31) then follow Bridge AMMs 2 & 3.		X

<p><b>Bridge AMM 2</b></p>	<p>If bridge assessment surveys suggest the presence of less than 50 bats, and work is conducted during the active season of April 1 to July 31, the following types of work can generally be conducted with the presence of bats:</p> <ul style="list-style-type: none"> <li>• Above deck work where construction equipment/materials do not extend to the underside of deck where bats may be located or does not include percussives or noise levels above general traffic.</li> <li>• Below deck work that is conducted away from roosting bats and does not involve percussives or noise level above general traffic.</li> <li>• Joint replacement and copolymer overlay following the procedure provided in Appendix B of the <i>BPA Guidebook</i>.</li> </ul>	<p>X</p>	<p>X</p>
<p><b>Bridge AMM 3</b></p>	<p>If assuming presence of bats, or if bridge assessment or P/A surveys suggest presence of federally listed bats, ensure suitable roosting habitat is maintained. Suitable roosting sites may be incorporated into the design of a new bridge.</p>	<p>X</p>	
<p><b>Bridge AMM 4</b></p>	<p>If excluding bats to complete the project is necessary, coordinate with GADNR to develop additional AMMs for the project Special Provision.</p> <p>Note: Prioritize coordination and installation of exclusionary measures during preconstruction phase.</p>	<p>X</p>	<p>X</p>
<p><b>Stressor and AMMs</b></p>	<p><b>Description</b></p>	<p><b>Preconstruction AMM</b></p>	<p><b>Special Provision AMM</b></p>

**Culverts**

*The following Culvert AMMs are REQUIRED unless culvert assessments have occurred within two years of project letting and no bats were found.*

<b>Culvert AMM 1</b>	To avoid effects to roosting bats, perform any culvert removal, replacement, and/or maintenance work from April 1 to October 15, unless bats are present on the structure at the time of construction. If culvert removal, replacement, and/or maintenance work must be performed outside of the April 1 to October 15 period, then follow Culvert AMMs 2 & 3.		X
<b>Culvert AMM 2</b>	<p>If culvert assessment or P/A surveys suggest the presence of less than 10 bats, and work is conducted outside of the April 1 to October 15 period, the following types of work can generally be conducted with the presence of bats:</p> <ul style="list-style-type: none"> <li>• Work where construction equipment or materials do not enter the culvert.</li> <li>• Work inside the culvert that is conducted away from roosting bats and does not involve percussives or noise level above general traffic.</li> </ul>	X	X
<b>Culvert AMM 3</b>	If assuming presence of bats, or if culvert assessment suggests presence of bats, ensure suitable roosting habitat is maintained. Suitable roosting sites may be incorporated into the design of a new culvert.	X	
<b>Culvert AMM 4</b>	<p>If excluding bats to complete the project is necessary, coordinate with GADNR to develop additional AMMs for the project special provisions to be included with the contractor bid package.</p> <p>Note: Prioritize coordination and installation of exclusionary measures during preconstruction phase.</p>	X	X
<b>Stressor and AMMs</b>	<b>Description</b>	<b>Preconstruction AMM</b>	<b>Special Provision AMM</b>
<b>Structures</b>			
<i>The following AMMs are REQUIRED unless structure assessments have occurred within two years of project letting and no bats were found.</i>			
<b>Structure AMM 1</b>	If the goal of the project is to exclude bats, coordinate with USFWS and follow Acceptable Management Practices for Bat Control Activities in Structures guidance document (USFWS 2015).	X	

<p><b>Structure AMM 2</b></p>	<p>If structure maintenance, repair, and/or alteration will be performed <u>outside</u> the active season of April 1 to October 15, determine if work will occur in an area with hibernating bats. If hibernating bats or signs of frequent bat activity are observed, GDOT will conduct maintenance activity or similar structure alteration in a manner that will not disturb bats using the structure.</p>	<p>X</p>	
<p><b>Structure AMM 3</b></p>	<p>If structure maintenance, repair, and/or alteration will be performed <u>during</u> the active season of April 1 to October 15, determine if work will occur in an area with roosting bats. If bat activity or signs of frequent bat activity are observed, GDOT will conduct maintenance activity or similar structure alteration in a manner that will not disturb bats using the structure.</p>	<p>X</p>	

**Exclusion of Bats as Part of AMMs**

The *BPA* identifies bat exclusion as a reasonable and prudent measures that may be incorporated into projects to minimize the impact of incidental take caused by the action on IBAT, NLEB, GBAT, and TCB. For any culvert, bridge, or abandoned structure project for which exclusion of bats is necessary, GDOT will develop a project-specific bat exclusion plan. Bat exclusion plans may include methods such as PVC tubing, expandable foam, hand-removal, acoustic deterrents, or other methods as approved by USFWS and GADNR.

Multiple Terms and Conditions are identified in the *BPA* including items related to agency coordination, qualifications (prequalifications and federal/state collection permits), approvals and commitments, and monitoring requirements.

**Step 5 – Determine Federal & State Project Effects**



**Federally Listed Species**

Most of the activities covered by this *BPA* are not likely to adversely affect IBAT, GBAT, NLEB, and TCB. Activities that can lead to likely to adversely affect determinations for one or more of IBAT, GBAT, NLEB and TCB include tree removal, bridge/culvert alteration, and



collision. Each species will reach its own effect determination of NLAA or LAA. If a project includes stressors not addressed in this table or if AMMs are not incorporated as indicated in this table, coordination with USFWS is necessary to ensure the appropriate effect determination is concluded.

Use this table to define the type of activities being performed for the project and what types of AMMs would be necessary to reach a NLAA or LAA effects determination for federally listed bat species in Georgia.

**Table 6.** Summary of stressors and associated effect determinations with applied AMMs for federally listed bats.

Stressor	AMMs	IBAT / NLEB	GBAT	TCB
Tree Removal	Tree AMMs 1 & 2	NLAA	NLAA	LAA*
	Without Tree Removal AMM 3	LAA*	NLAA	LAA*
Noise/Vibration	None	NLAA	NLAA	NLAA
Lighting	Lighting AMMs 1 & 2	NLAA	NLAA	NLAA
Impacts to Water Quality	Water Quality AMM 1 within the range of GBAT	NLAA	NLAA	NLAA
Collision	None	NLAA	LAA	LAA
Alteration/Removal of Bridge/Culvert with <5 Bats Present	Bridge/Culvert AMM 1 <i>or</i> Bridge/Culvert AMM 2 & 3	NLAA	NLAA	NLAA
Stressor	AMMs	IBAT / NLEB	GBAT	TCB
Alteration/Removal of Bridge/Culvert with >= 5 Bats Present	Bridge/Culvert AMM 4	LAA ^	LAA ^	LAA ^
Alteration/Removal of Bridge/Culvert – Bats Absent	Bridge/Culvert AMM 3	NLAA	NLAA	NLAA
Alteration/Removal of Abandoned Structures – Exclusion Required	Structure AMM 1	LAA ^	LAA ^	LAA ^
Alteration/Removal of Abandoned Structures – No Exclusion Required	Structure AMMs 2 & 3	NLAA	NLAA	NLAA
Projects within 0.5-mile of named caves	Hibernacula AMM 1	NLAA	NLAA	NLAA

<b>Projects within 0.5-mile of known occupied natural hibernacula that include construction activities or stressors** to bat species described in this <i>BPA</i></b>	NA	Request Technical Assistance	Request Technical Assistance	Request Technical Assistance
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\*Project specific coordination required to ensure proportion of tree clearing in non-volant pup season is within the scope of this *BPA*

^Project specific coordination required to ensure project is within the scope of *BPA*

\*\*Stressors include ground disturbance, vibrations, blasting, pile driving, alteration of subsurface drainage patterns, noise above background levels, temporary or new/additional permanent lighting, and tree remove/trimming.

### State Protected Species

The *BPA* includes AMMs that should be applied to all bat species that occur in the state of Georgia; however, only species with listing protection under the GEWA require effect determination documentation in GDOT Ecology Reports. State effects determinations for species that are also federally listed will follow the guidance from the previous Table 6 (i.e., NLAA = NSAE and LAA = SAE). If a project includes stressors not addressed in this table or if AMMs are not incorporated as indicated in this table, coordination with GADNR is necessary to ensure appropriate effect determination is concluded.

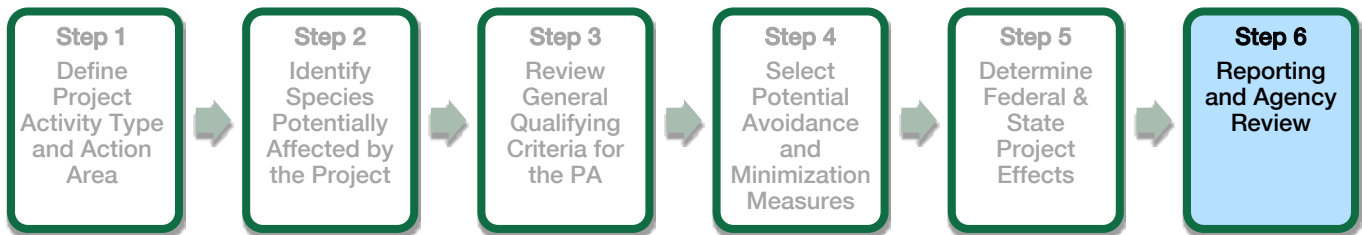
**Table 7.** Summary of stressors and associated effect determinations for State Protected Species.

Stressor	AMMs	RAFBAT
<b>Tree Removal</b>	Suitable Roost Trees - RAFBAT Tree Removal AMM 1	NSAE
	Occupied Roost Trees –RAFBAT Tree Removal AMM 1 & 2	NSAE
<b>Alteration/Removal of Bridge &lt;50 Bats Present</b>	Bridge AMM 1 <i>or</i> Bridge AMM 2, 3, & 4	NSAE
<b>Alteration/Removal of Bridge with &gt;= 50 Bats Present</b>	NA	Coordination Required*
<b>Alteration/Removal of Culvert &lt;10 Bats Present</b>	Culvert AMM 1 <i>or</i> Culvert AMM 2, 3, & 4	NSAE
<b>Alteration/Removal of Culvert with &gt;= 10 Bats Present</b>	NA	Coordination Required*
<b>Alteration/Removal of Bridge/Culvert – Bats Absent</b>	NA	NE

Alteration/Removal of Abandoned Structures – Exclusion Required	Structure AMM 1	NSAE
Alteration/Removal of Abandoned Structures – No Exclusion Required	Structure AMMs 2 & 3	NSAE

\* Project specific coordination required to determine if project- specific AMMs can be implemented to comply with the programmatic agreement.

### Step 6 – Reporting and Agency Review



GDOT will provide the LFA, USFWS, and GADNR with initial documentation for every project submitted for inclusion within the *BPA*. GDOT will provide a project submittal form or complete a determination key in USFWS' IPAC system for submission to the LFA and USFWS, which includes:

- A description of the proposed action (e.g., type of action, location, involved federal agencies).
- Verification that the project is within the scope of the *BPA*.
- A quantification of impacts (e.g., acres of tree removal, timing of tree removal, bridge work).
- Identification of all proposed conservation measures that will avoid and minimize impacts.
- An effects determination following the consultation framework previously described.

Under the *BPA*, coordinating agencies have committed to the review periods listed in Table 8 to confirm effects determinations and/or request additional information for the proposed activity. If GDOT receives no response within 14 days for a MANLAA effect determination or 21 days for a MALAA effect determination, they should assume concurrence and may proceed under the *BPA* without an email response. If a project requires a response prior to the 14 or 21-day review period, GDOT can submit an expedited review request and USFWS will provide an email response.

**Table 8.** Agency review periods established in the *BPA*.

<b>Programmatic Consultation Process</b>	<b>Action</b>	<b>Period</b>
<b>Projects Not Likely to Adversely Affect Federally Listed Bats</b>	LFA and USFWS Project Review	14-calendar day review period*
<b>Projects Likely to Adversely Affect Federally Listed Bats</b>	LFA and USFWS Project Review for bats only	21-calendar day review period*
	LFA and USFWS Project Review for bats and other federally listed species	90-calendar day review period*
<b>Programmatic Consultation Process</b>	<b>Action</b>	<b>Period</b>
<b>Projects with Additional Information Needs for Federally Listed Bats</b>	LFA and USFWS Project Review	21-calendar day review^
<b>Projects Requiring Conference Conversion</b>	GDOT will provide a request to the LFA for conversion from conference to §7 Consultation upon final listing determination being published in Federal Register	14 calendar days
	LFA will review the request upon receipt and coordinate with USFWS.  USFWS Project Review upon receipt of conversion request memorandum will respond to the LFA request.	21-calendar day review period
<b>Projects Requiring only Coordination for State Protected Bats</b>	GADNR Project Review	60-calendar day review period

\*If additional information is requested, the review clock is suspended.

^ If additional information is requested, the review clock is suspended. The 21-day review period will resume once all information is submitted to the LFA and USFWS.

# **APPENDIX A**

## **GDOT Bat Conservation Fund**

The GDOT Bat Conservation Fund was established as a §7(a)(1) recovery action to benefit imperiled bat species in Georgia. The fund is established through a Memorandum of Agreement between GDOT and GADNR. The GADNR is the sole manager of the fund and allocates money from the Conservation Fund to purchase high priority conservation areas for bat species in Georgia as identified through the State Wildlife Action Plan. This process is unique to Georgia by allowing all contributions made to the fund to be directly used to purchase high priority conservation areas without overhead costs. The lands are then managed in perpetuity through GADNR. While the main purpose of the fund is to protect bat species and high-quality habitat, these conservation areas will benefit countless other rare, threatened, and endangered species in Georgia.

Funding amounts are based on the amount and timing of suitable federally listed/proposed bat habitat lost per project using the US Department of Agriculture Farm Real Estate Value for Georgia for the previous year based on ratios provided below.

**Table 1.** Ratios for suitable federally listed/proposed bat habitat tree clearing acreage funding from GDOT to GADNR.

Clearing occurs (May-July)	Clearing occurs (August-April)
1.5 to 1 ratio for acreage cleared	1 to 1 ratio for acreage cleared

These land values are re-evaluated annually and typically increase each year. While GDOT has initially committed \$20M over the next 5 years, this value will likely increase due to rising land value costs throughout the state. GDOT provides payments to GADNR for the Conservation Fund on regularly set intervals. GDOT allocates a portion of the payment for each project and deducts the funding amount per project until another deposit is needed. There are separate accounts for federally and state funded projects. Each account has a minimum account balance that GDOT must maintain. A new payment is required from GDOT if the account balance falls below that threshold before the next scheduled payment date.

The following overview details the process for implementing the Conservation Fund for an individual project:

1. The general tree clearing range (less than 1 acre, greater than 1 acre, and over 100 acres) should be reported in the Ecology Assessment of Effects Report or Addendum.
  - a. If a project is clearing more than 1 acre of trees, it requires a conservation fund payment.
  - b. If a project will clear trees during the pup season (May 1<sup>st</sup> – July 31<sup>st</sup>), then a payment multiplier of 1.5x is added to the total cost (projects letting in March, April, or May should denote pup season clearing in the Ecology Report).
2. The GDOT Environmental Analyst will report that the conservation fund payment is a “during construction commitment” in the Environmental Commitments Table (or ECT).
3. The OES receives final tree clearing acreages for each upcoming let project from the Office of Engineering Services. This value is used to calculate the final Conservation Fund payment required for the project, ensuring it is as accurate as possible.
4. Unlike Section 404 mitigation payments, **individual projects do not need to make their own payment into the Conservation Fund.**

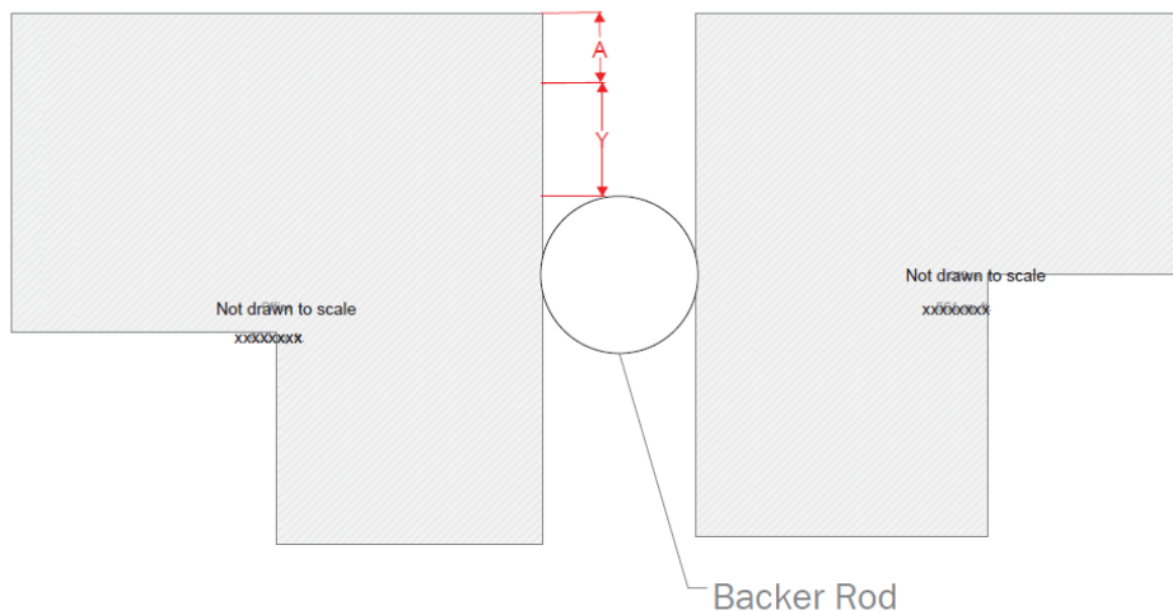
# **APPENDIX B**

## **Joint Replacement and Copolymer Procedure**

## Joint Replacement and Copolymer Procedure

### Sequence of Construction

1. Hand removal of the old expansion joints.
2. Insertion of a closed-cell backer rod one and one-half ( $1\frac{1}{2}$ ) times the diameter of the joint opening. The backer rod is being installed to protect bats during the bridge preparation process. The backer rod will remain in the joint opening and will prevent any debris from the bridge deck falling through the expansion joints (see Figure 1).
3. Preparation of the bridge deck by shotblasting to remove any oil, dirt, rubber or any other potentially detrimental material such as curing compound and laitance which may prevent proper bonding and curing of the material. The backer rod, installed in the joints prior to shotblasting, should create a barrier between the bat habitat and the preparation activities on top of the bridge.
4. Application of the two-part Polymer overlay to the bridge deck which consists of a minimum  $\frac{3}{8}$  inch (9.5mm) thick application to provide complete waterproofing as well as providing a non-skid surface that withstands continuous heavy traffic and changes in weather conditions.
5. Installation of the new joint as per the manufacturer's recommendations.



Installation diagram included as Appendix A in the ERSAOE showing the insertion depth of the backer rod. Improper installation of the backer rod may result in reductions in bat habitat not considered in this opinion. Distance A: minimum depth required from the deck's surface to the top of the joint (as recommended by joint's manufacturer). Distance Y: actual joint depth.



# **APPENDIX C**

## **Frequently Asked Questions**

## General

Q. Is a project-specific review applicable to state funded projects?

A. Yes. Project-specific review can be applicable to state funded projects when USACE is the LFA. When a 404 impact occurs on a state-funded project, there is a federal nexus and Section 7 of the ESA; therefore, the project would fall under the scope of this agreement. If the project is purely state funded with no federal nexus, the project would be outside of the scope of the agreement and would need to consult under Section 9 of the ESA.

Q. For projects that already have a conference response for the tricolored bat, are we required to use the Bat Programmatic Agreement?

A. If a project undergoes reevaluation, the *BPA* should be utilized at the time of reevaluation. If a project is not within the scope of the *BPA*, or you are uncertain, you should request technical assistance during the reevaluation to determine if the *BPA* may be used.

Q. Should tree clearing acreage be calculated from habitat maps or based on another metric? How should acreage for individual/landscape trees be incorporated?

A. For general estimates of tree clearing acreage, please measure based on project habitat maps. If individual trees will only be impacted, please choose less than 1 acre of clearing on the report template. In instances where there is a multitude of individual trees being cleared throughout the corridor, please coordinate with your GDOT ecologist to determine if the level of clearing would exceed 1 acre.

Q. What exactly are we waiting for at the end of the 21-day review period for projects that don't require project-specific review?

A. Upon receipt of GDOT reports, the LFA and USFWS will review project information to ensure the project conforms to the consultation parameters and may request additional information to verify conformity. If additional information is requested, the review clock shall be suspended until the comments are resolved by all parties. If GDOT is not contacted within 21 calendar days of the transmittal, they may proceed under the programmatic consultation. No further documentation (email or letter) is required.

**Avoidance and Minimization / Special Provisions**

Q. Should tree clearing restrictions be included in a Special Provision?

A. The *BPA* does not require that GDOT implement clearing restrictions in a Special Provision. If an acre or greater of tree clearing is anticipated to occur during the pup season based on the estimated let date, the project will require project specific review. If tree clearing is estimated to occur during the pup season at the time of letting, conservation funding payment would be made at a higher ratio.

Q. What does “working away from bats” on bridges and culverts entail? What is a safe distance and who is liable if there is take?

A. The appropriate distance to work away from bats will vary widely depending on the characteristics of the structure, the work being conducted, and the specifics of bat use such as age, species, time of year, and reproductive status. In any scenario when bridge or culvert work is continual despite the presence of bats, coordination with USFWS and GADNR should occur. The avoidance and minimization measures written into the *BPA* are intended to reduce or prevent take in most situations, but the Incidental Take Statement of the *BPA* authorizes take that may occur on projects.

Q. If an initial bridge/culvert inspection was negative, do I still need one within two years of letting?

A. Yes. All projects that will impact suitable bridge or culvert habitats need to be assessed within two years of letting OR a Special Provision should be included that requires an assessment within 14 days of the start of construction.

Q. At what point is a bridge or culvert survey thorough or not through enough?

A. The Bats in Bridges Training offered by USFWS and GADNR covers how to inspect structures and when a survey is considered adequate in varying scenarios. Each survey will differ based on the specifics of the structure. If significant portions of a structure cannot be inspected at close proximity due to access or safety considerations, or if you are uncertain whether your survey was adequate, please coordinate with USFWS or GADNR to determine whether an alternate survey method would be appropriate.

Q. If a bridge or culvert can't be inspected thoroughly, can an emergence count replace a traditional survey?

A. For many structures, emergence counts can replace traditional bridge assessments if access is an issue. Please coordinate with USFWS or GADNR to determine if an emergence count is appropriate for your project.

Q. If a bridge, culvert, or abandoned structure can't be assessed due to safety, can the *BPA* be implemented?

A. The *BPA* may still be applicable, but project-specific review may be necessary to evaluate the effect determinations and determine if any associated take is applicable.

Q. If a project will clear less than an acre of habitat during the pup season, is project-specific review required?

A. No. Project-specific review is only required if an acre or greater of habitat will be cleared during the pup season or 100 acres or greater will be cleared at any time.

Q. Which AMMs apply to each federal protected bat species?

A. All AMMs, with exception to Water Quality AMM 1, apply to all federal protected bat species. Water Quality AMM 1 is only required when projects are within the range of the gray bat, which feeds extensively on aquatic insects.

Q. Which AMMs require additional coordination?

A. Additional coordination is typically required for the following scenarios: 1) Exclusions required on bridges or culverts (Bridge and Culvert AMM 4); 2) Abandoned Structures are present within the project area (Structure AMM 1) - Abandoned structures are typically demolished after ROW phase and before LET. Coordination will need to occur during development of the AOER. 3) Project cannot be surveyed due to environmental or safety concerns. Coordinate with USFWS & GADNR on the possibility of completing an emergence count or including additional AMMs. Emergence counts are not suitable for every project.

Q. Do the AMMs in the template language for tricolored bats apply to all federally protected bats?

A. The template language for tricolored bats found on the OES Ecology SharePoint Site is applicable to all federally protected bats and should be used when developing the species description pages in the Ecology Report.

Q. If a project has no proposed permanent lighting, do we need to include Lighting AMM 2?

A. This AMM can still be included in the report in all scenarios. The GDOT Design policy manual dictates the conditions of Lighting AMM 2 and is applied to all projects regardless of whether there is permanent lighting planned. However, you can state in the project description that no permanent lighting is proposed on the subject project.

Q. Should orange barrier fence be used to limit contractor access to wooded areas to reduce tree clearing?

A. In general, OBF should not be used to limit contractor access into suitable bat habitat to reduce tree clearing estimates. Since bat habitat is no longer delineated on the plans as an ESA, we are offsetting proposed impacts through conservation fund payments. In some scenarios, through technical assistance with USFWS and GADNR, it may be applicable to apply OBF around certain high priority sites/areas within a project corridor. An example would be known/occupied roost trees for Rafinesque's big-eared bats.

### Conservation Payments

Q. If a project will clear less than an acre of habitat, is a conservation payment required?

A. No. Conservation payments are required for all projects that clear an acre or more of habitat.

Q. Do conservation payments need to be included in the Environmental Commitments Table?

A. Conservation fund payments should be included on the ECT as a "During Construction" commitment. The project NEPA analyst will have stock template language available to use on all ECTs that require a conservation fund payment. ECT commitments should not list a specific value due to conservation fund payments being finalized closer to the let date of the project.

Q. How do the limits of the conservation fund work and what happens if we approach the limit?

A. The limiting factor of the *BPA* is the Incidental Take that is authorized in the Biological Opinion portion of the consultation. Tree acreage is used as a surrogate for individual bats in the Incidental Take Statement and is associated with estimated acreage of annual tree clearing by GDOT's program for five years. Consultation will be re-initiated if the amount of acreage of tree clearing approaches or exceeds the amount of take authorized in the *BPA*, or at the end of the five-year period of the consultation.

### Effect Determinations

Q. What effect determination should we make for different species and/or impacts?

A. Please review Table 6.

Q. Is there a difference between “May affect, not likely to adversely affect (MANLAA)” and “Programmatic may affect, not likely to adversely affect (PMANLAA)”, etc.?

A. In the context of using the *BPA*, these terms are interchangeable.

**Biology**

Q. What does natural hibernacula mean? How do we know if a hibernaculum is “known occupied”?

A. In the context of the *BPA*, a natural hibernaculum is a cave, mine, or similar feature. “Natural hibernaculum” does not refer to a bridge, culvert, or abandoned structure. A “known occupied natural hibernaculum” is a natural hibernaculum that has known occurrences of protected bats. Caves and similar features are identified in the GNAHRGIS species list provided in early coordination with GADNR. Please request technical assistance with GADNR or USFWS to determine if caves identified in early coordination are known to be occupied by listed species.

*Guidebook Revision History*

Revision Description	Relevant Sections	Revision Date
Initial Publication	All	12/16/2024
Font update, hyperlinks added, table #s corrected, & minor editorial revisions	All	2/3/2025