WNC Bat Programmatic Use Checklist

Question	Yes	No
Is the project located in Divisions 9-14		
Is the project on new alignment that will clear ≥100 acres of contiguous forested habitat and/or projects that will clear ≥250 acres of forested habitat overall.		
Does the structure have records of ≥20 gray bats and work will occur from March 15-Nov 15.		
Using [Identify GIS Layer]		
Is the project within Bat Critical Habitat		
Is the project within 0.25 mile of a documented maternity roost tree		
Is the project within 0.25 mile of a previously documented from the post-decline 2013 captures of non-gray *Myotis* and *Perimyotis* species		
Is the project within 0.25 mile of hibernacula if blasting or percussive activities during the fall swarming and hibernating period (August 16-March 31) or clearing trees during any time of year.		
Hibernating Range: If the structure is a documented maternity site for non-gray *Myotis* and *Perimyotis*, will work occur between April 1 and July 31?		
Year-Round Range: If the structure is a documented maternity site for non-gray *Myotis* and *Perimyotis*, will work occur between December 15 and February 15, or between April 1 and July 15?		
Can all of the conservation measures noted below be met?		

WNC Bat Programmatic Conservation Measures
General Conservation Measures
Ensure all NCDOT operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all NCDOT environmental commitments, including all applicable conservation measures.
[Biological] Surveyors are required to complete the NCDOT bat structure survey training before they can conduct structure surveys for ESA §7 purposes. The training will be in accordance with the standard operating procedures and associated training modules for structure surveys for bats, as created by NCDOT. Should the NCDOT SOP undergo review and/or amendment, USFWS would need to review it to ensure that the General Measure is still applicable.
Borrow pits and waste sites shall adhere to the conservation measures included in this programmatic opinion.
Noise and Vibration
The NCDOT will follow Section 220 of the NCDOT Standard Specifications for all blasting activities. https://connect.ncdot.gov/projects/construction/ConstManRefDocs/220,%202012%20Standard%20Specifications.pdf
When blasting occurs, the NCDOT will commit to requiring blast monitoring for all blasting on the project and using blast mats or soil cover for small rock.
In bat buffer areas: To the maximum extent possible, if suitable roost trees or structures are present near high-decibel percussive activities (81-162 dBA as measured from 50 feet from source), those percussive activities will be avoided from May 1 – July 31, when non-volant pups may be present.
Project Lighting
When installing new or replacing existing permanent lights, fixtures with the following specifications will be used: • Downward facing, with the same intensity or less for replacement lighting. • An "uplight" rating of zero • A Backlight-Uplight-Glare (BUG) system rating, developed by the Illuminating Engineering Society, not to exceed 3-0-3 on any poles less than 50' needing new permanent lighting except for high mast fixtures which have a 5-0-5 BUG rating. • A type II distribution pattern that creates rectangular lighting patterns, limiting light spill into adjacent habitats (NCDOT cannot accommodate Type II on eight or more lane roadway as it will not cast light far enough to meet AASHTO thresholds at standard pole spacing).
For permanent lighting, use the shortest light poles that meet highway and safety requirements. NCDOT will limit the number of high mast lights where possible but reserves the right to include high mast poles in the design where light from those high masts does not directly impact buffer areas.
For permanent lighting, prioritize use of LED light sources with a color temperature of no more than 3,000 Kelvins to minimize the effects of blue light exposure.
To the maximum extent possible direct temporary lighting away from suitable habitat.
In bat buffer areas: Design permanent lighting systems for an average illumination level of 0.6 footcandle, reducing overall brightness, a 25% minimization from a standard 0.8 fc illumination.
Aquatic Resources
Use best management practices, containment measures, and/or enhanced sediment and erosion control techniques to protect water quality.
Projects will use best management practices, secondary containment measures, or other standard spill prevention and countermeasures to avoid contamination of surface waters. Where practicable, either a 300-foot buffer or fueling outside of the floodplain will be employed in these instances to separate fueling areas and other major contaminant risk activities from surface water.

Forested Habitat
Replant riparian areas with native, fast-growing tree and shrub species such as American sycamore (*Platanus occidentalis*), river birch (*Betula nigra*), silky dogwood (*Cornus amomum*), and black willow (*Salix nigra*) where vegetation has been removed. Riparian plantings will not occur in utility, drainage, and construction easements. If excess property is available outside normal maintenance limits at bridge locations, riparian plantings will be installed where safety requirements allow.
Ensure tree removal is limited to that specified in project plans. Ensure contractors understand clearing limits and how they are marked in the field following the NCDOT's best management practices for staking clearing limits on a project.
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.
Forested habitat removal will be avoided when non-volant bat pups could be present (May 15 – July 31 in the hibernating zone, May 1 – July 15 in year-round active zone 1), minimizing the risk of potential direct effects on non- volant bats. If forested habitat removal during this timeframe is unavoidable, a contribution will be made to the N.C. Wildlife Resources Commission-managed terrestrial imperiled species fund, or similar USFWS-approved fund, at a 2:1 effects multiplier ratio for acreage cleared. The amount will be determined using the United States Department of Agriculture Farm Real Estate Value for North Carolina for the year immediately preceding project let. Formula = *$ USDA Farm Real Estate Value for NC) x acreage = (dollar amount) x (effects multiplier) = forested habitat contribution amount.* The NCDOT Environmental Analysis Unit, Biological Survey Group (BSG) will submit payment and track annual submittals. The expectation is that both division- and centrally managed projects will be submitted and tracked by the BSG to ensure consistency and compliance. Alternatively, the NCDOT may consult with the Asheville ESFO on a project specific basis (when the FHWA is lead) or NCDOT will contact the USACE to consult on a project specific basis (if the USACE is lead).
In bat buffer areas: Limit tree clearing within 100 meters (328 ft) of blue line streams on USGS topographic maps. The following exceptions apply within 10 meters of a stream: (1) the NCDOT must clear easements (utility, drainage, and construction), (2) at bridge sites, the NCDOT must clear the entire width of the right of way beginning at a station three feet beyond the beginning and ending extremity of the structure, per NCDOT Standard Specifications.
In bat buffer areas: To offset direct and indirect impacts, a financial contribution will be made to the N.C. Wildlife Resources Commission-managed terrestrial imperiled species fund, or similar USFWS-approved fund if the project falls within an identified protective survivor buffer area. Contributions will be made if forested habitat removal must occur during sensitive activity seasons for covered bat species (excepting gray bat). Contributions will be made based on acreage cleared, using a ratio, adjusted for the time of year when tree clearing occurs, reflecting sensitivity of bat life stages (Table 3, PBO pg. 11).
Structure Roosting
Roost 1 - For bridges with concrete deck material and culverts at least three feet in diameter and 60 feet long, up to two structure surveys will be conducted prior to project let. One at the start of study and the second two years prior to construction let, unless the first is within two years of let. If evidence of bats is observed during either, a final survey of subject structures will be conducted within 30 days prior to project let to verify absence of listed bats and signs of listed bats.
Roost 2 - If **covered bats** are detected during *Roost 1* surveys (described above), one of the options below will be implemented (listed in order of preference). USFWS will be notified of this situation and given the opportunity to assist. • Wait for bats to leave for the season (approximately mid-October to early November) before beginning work. • Conduct work at night, when bats are foraging. A biologist with bat expertise will monitor the structure for each evening of work, and work will begin only after the biologist declares all bats have left the structure for the evening. • NCDOT staff will coordinate with USFWS staff to identify and implement bat exclusion measures as soon as possible/within a few days of the start of work. • NCDOT staff will coordinate with USFWS staff in advance of hand-removal and relocation of bats, to be done by a permitted bat biologist.

Roost 3 - When structures have a known or assumed presence (because surveys were unable to be conducted) and conservation measure *Roost 2* cannot be adhered to, and/or when the replacement structure will not provide suitable roosting features, the NCDOT will contribute to the N.C. Wildlife Resources Commission-managed imperiled terrestrial species fund, or other USFWS-approved fund, to offset impacts. Contribution amount will be based on the following rationale. Structures with documented bat use are generally larger than the average bridge, with a median size of 0.10 acre (length x width) (USFWS. 2020b). Therefore 0.10 acre per structure is used to calculate the amount of suitable bat habitat lost for projects involving structure impacts, with the dollar value based on the United States Department of Agriculture Farm Real Estate Value for North Carolina. To account for loss of suitable roosting habitat due to lack of suitable features on new structure, a 1:1 multiplier will be used. To account for suitable habitat structure removal while bats are assumed present, a 2:1 multiplier will be used; or, while bats are known to be present, a 4:1 multiplier will be used.