United States Department of the Interior

FISH AND WILDLIFE SERVICE
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State College, Pennsylvania 16801-4850

March 26, 2025

Jennifer M. Crobak
(ATTN: Benjamin Harvey)
Federal Highway Administration
30 North Third Street, Suite 700
Harrisburg, PA 17101

RE: USFWS Project #2022-0001474 (Formerly 2021-1348)

Dear Ms. Otto:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (Opinion) based on our review of the State Route 6219, Section 050, Meyersdale to Old Salisbury Transportation Project, located in Elk Lick and Summit Townships, Somerset County, Pennsylvania, and Garrett County, Maryland, and its effects on the federally endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*), and the tricolored bat (*Perimyotis subflavus*) which is proposed as endangered. This Opinion is in accordance with section 7 of the Endangered Species Act (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). We received your request for formal consultation on August 8, 2024, and your updated biological assessment on October 28, 2024.

On September 14, 2022, the Service published a proposed rule in the Federal Register to list the tricolored bat as endangered under the ESA. Proposed endangered species are those that the Service has determined are in danger of extinction throughout all or a significant portion of their range. Under section 7(a)(4) of the ESA, Federal agencies must conference[1] with the Service if their action will jeopardize the continued existence of a proposed species. Proposed endangered species are not protected by the take prohibitions of section 9 of the ESA until the final rule to list is published and becomes effective, typically 30 days after listing as endangered or threatened. To avoid potential future project delays, you asked that we also consider the effects of the action on the tricolored bat. Therefore, this Opinion includes a conference report for the tricolored bat. Please be advised that if the tricolored bat is listed as endangered, the Federal Highway Administration (FHWA), Pennsylvania Department of Transportation (PennDOT), and

[1] Conference is a process that involves informal discussions between a Federal agency and the Service under section 7(a)(4) of the ESA regarding the impact of an action on proposed species or proposed critical habitat and recommendations to minimize or avoid the adverse effects.

Maryland State Highway Administration (MD SHA) will need to notify the Service to convert the conference report to a biological opinion for this species.

FHWA, PennDOT, and MD SHA Effect Determinations

This Opinion and conference report consider the effects of a proposed FHWA, PennDOT, and MD SHA-funded transportation project. In their Biological Assessment (BA), FHWA, PennDOT, and MD SHA outlined the activities that may adversely affect the federally listed endangered Indiana bat and northern long-eared bat and the proposed endangered tricolored bat.

The BA specified avoidance and minimization measures that will be implemented as part of the proposed project. The Service evaluated the Project, with implementation of these measures, in the jeopardy analysis in this Opinion. The conference report also considered these measures as part of the proposed project design when analyzing the effect of the action to tricolored bats.

A summary of all effect determinations and our section 7 concurrence is included in Table 1.

Table 1. Summary of Effect Determinations

Species	**ESA Listing Status**	**FHWA Effect Determination (FWS concurrence)**
Myotis sodalis (Indiana Bat)	Federal and State Endangered	May Affect, Likely to Adversely Affect (FWS concurs)
Myotis septentrionalis (Northern Long-Eared Bat)	Federal and State Endangered	May Affect, Likely to Adversely Affect (FWS concurs)
Perimyotis subflavus (Tricolored Bat)	State Endangered; Federally Proposed as Endangered	May Affect, Likely to Adversely Affect (FWS concurs)

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CONSULTATION HISTORY

The following timeline provides a history of the consultation request and includes any informal consultation, prior formal consultations on the action, documentation of the date consultation was initiated, and other applicable past or current actions.

DATE	PROCEEDINGS
September 2, 2004	The Service recommends that FHWA and PennDOT conduct bat surveys due to the close proximity to a known bat hibernaculum and the extent of the forest removal.
October 2004 & December 21, 2004	The Service meets with FHWA, PennDOT, MDSHA, and consultants to discuss the project effects on Indiana bats. Given the amount of forested habitat to be removed, the project will require formal consultation
June 2006	The Service receives the Federal Highway Administration's (FHWA) and PennDOT's BA for the State Route 219, Section 019, Transportation Project. The assessment concludes that the proposed action may affect, and is likely to adversely affect, the federally listed Indiana bat.
February 2007	The Service receives the Federal Highway Administration's (FHWA) and PennDOT's supplemental, amended, BA for the Section 019 project.
October 2007	The Service issues a Biological Opinion on the State Route 219, Section 019 Transportation project (then USFWS #2007-1091), which concluded the proposed project was "not likely to jeopardize the continued existence of the Indiana bat."
January 2008	The Service provides a response letter indicating that they could not concur that seasonal tree removal restrictions, alone, will adequately avoid all adverse effects if an Indiana bat maternity colony is present in the action area.
December 2010 & January 2011	The Service receives the Federal Highway Administration's (FHWA) and PennDOT's revised BA for the State Route 219, Section 019, Transportation Project, and now includes Section 020. This submittal includes the results of a 2008 summer mist net survey.
August 28, 2011	The FHWA and PennDOT reinitiate consultation with the Service. The Service issues a subsequent biological opinion. Design modifications and previously undocumented mine portals (hibernacula) resulted in an additional consultation amendment. (Now referred to as SR 219 Improvement Project, and SR 6219, Section 020 (USFWS #2007-2430) Addendum, December 2012)

January 3, 2013	The FHWA and PennDOT submit a request for reinitiation of consultation and a modification to the August 2011 biological opinion.
January 31, 2013	The Service provides FHWA and PennDOT with a supplemental biological opinion, resulting in a similar conclusion as the 2011 biological opinion. The incidental Take Statement is updated to reflect a direct loss of an additional 90 acres of forest lands.
October & December 2014	The FHWA's and PennDOT's consultant complete summer mist net surveys and bat hibernacula surveys within the State Route 219 Meyersdale to I68 Project corridor.
June 2014	The Service receives the Federal Highway Administration (FHWA) and PennDOT's Addendum #3 revised BA for the to the US 219 Improvement Project/State Route 6219, section 019 (June 2006, as amended February 2007, 2011, and December 2013)
August 2016	The FHWA and MD State Highway Administration identifies the US 219 "breakout" project, and initiates informal consultation with the Service (Chesapeake Bay Field Office)
December 23, 2016	The FHWA reinitiates formal consultation for Indiana and northern long-eared bat for the Maryland portion of the US 219 project.
March 2, 2017	The Service (Chesapeake Bay Field Office) concludes that the Maryland portion of the US 219 project may affect, but is not likely to adversely affect, the Indiana and northern long-eared bat.
May 6, 2020	The Service informs FHWA and PennDOT that Indiana bats hibernate in the project area and recommends seasonal tree-cutting restrictions in a May 6, 2020, letter.
February 17, 2022	The Service informed FHWA and PennDOT the previous bat surveys conducted for the US 219 Improvement Project/State Route 219, Section 050 are outdated. This letter also provides additional recommendations with regard to the Fish and Wildlife Coordination Act, alternatives analysis, logical termini, wildlife crossings/habitat connectivity, acid bearing rock, pollinator habitat, and the Migratory Bird Treaty Act.
May 23, 2022	The Service receives PennDOT's consultant's Summer Bat Survey Work Plan which includes acoustic monitoring stations (verify manually and with Kaleidoscope Pro) and mist net surveys where federally listed bat recordings are identified.
June 14, 2022	The Service receives FHWA and PennDOT's response to the letter of February 17, 2022. Project proponents are considering the Service's concerns and conservation measures.
August 5, 2022	The FHWA sends the Service an invitation for the SR 6219, Section 050 Transportation Project – Pre-NEPA PEL Activities, alignments, and study area map; accept or decline becoming a Cooperating Agency.

August 9, 2022	The Service responds to the Cooperating Agency inquiry, and elects to accept the invitation as a Cooperating Agency
August 24, 2022	Agency Coordination (PA) and Interagency Review (MD) Joint Meeting: The project design team, PennDOT District 4-0, and FHWA discussed and presented the Purpose and Need statement.
August 25, 2022	The Service receives FHWA and PennDOT's coordination plan for agency and public involvement.
May 12, 2023	The Service provides updated project information on the State Route 6219, Section 050, Meyersdale to Old Salisbury Road Transportation Project to FHWA, PennDOT, and PennDOT's consultants.
June 16, 2023	The Service receives an FHWA and PennDOT document *entitled US 219, Section 050 Transportation Improvement Project, Meyersdale, PA to Old Salisbury Road, MD, 22023 Bat Hibernacula Habitat Assessment*
August 4, 2023	The Service verbally recommends that a new biological assessment is needed for the State Route 6219, Section 050, Meyersdale to Old Salisbury Road
August 14, 2023	The Service formally recommends that the FHWA and PennDOT prepare and submit a biological assessment for this project to comply with section 7(a)(2) of the Endangered Species act (via letter of same date)
October 24, 2023	The Service receives FHWA and PennDOT's document entitled *2023 Fall Bat Capture Hibernacula Use Assessment* and includes additional sites to those previously reported.
April 23, 2024	The Service attends a field view to field verify some of the aquatic resources throughout the project corridor, identify opportunities for habitat connectivity/wildlife crossings, and evaluate forested acres.
May 3, 2024	At PennDOT's request, the Service provides PennDOT with bat mitigation options, including purchase and preserve known hibernacula, establish a conservation easement on known hibernacula, conservation funds, or private conservation banks.
August 6, 2024	The Service receive the Draft Environmental Impact Statement for the SR 6219, Section 050 Transportation Project
August 8, 2024	The Service receives the Federal Highway Administration (FHWA) and PennDOT's letter for initiation of formal consultation and a BA for the State Route 6219, Section 050 Transportation Project. The assessment concludes that the proposed action may affect, and is likely to adversely affect, the federally listed Indiana bat and northern long-eared bat, and the proposed tricolored bat.

September 12, 2024	The Service acknowledges receipt of FHWA and PennDOT's biological assessment and request for initiation of formal consultation and concurs with their conclusion that the proposed project may affect and is likely to adversely affect the federally listed, endangered Indiana and northern long-eared bat, and the proposed-endangered tricolored bat. The Service requests additional information to initiate formal consultation. The formal consultation process will begin once the Service receives all requested information.
October 28, 2024	The Service receives the FHWA and PennDOT's updated biological assessment containing additional information in response to the Services September 12, 2024, letter requesting more information. The assessment again concludes that the proposed action may affect, and is likely to adversely affect, the federally listed Indiana bat and northern long-eared bat, and the proposed tricolored bat.
November 15, 2024	The Service provides the FHWA and PennDOT with a letter acknowledging receipt of the new BA and initiation of formal consultation letter with a 135-day timetable to provide the biological opinion.
March 26, 2025	The Service provides FHWA with a biological opinion.

BIOLOGICAL OPINION

This Opinion and conference report are based on information provided in the October 28, 2024, Biological Assessment (BA), multiple partnership meetings and telephone conversations, field investigations, and other sources of information. A complete administrative record of this consultation is on file in this office.

DESCRIPTION OF PROPOSED FEDERAL ACTION

As defined in the ESA section 7 regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies in the United States or upon the high seas." The following is a summary of the proposed action. A detailed description can be found in the *Biological Assessment US 219 Project, Meyersdale, PA to Old Salisbury Road, MD (USFWS PROJECT #2022-0001474)* dated October 2024 (FHWA, PennDOT, and MD SHA 2024a).

The State Route (SR) 219 Transportation Project is the last link in the Corridor N travel corridor of the Appalachian Development Highway System (ADHS). The ADHS is a 3,090-mile highway network that links the Appalachian region to national interstates to facilitate economic development. The purpose of SR 219 is to improve the safety and access of the existing travel corridor by linking Interstate 68 in Maryland (southern terminus) to the New York state line and beyond, with regional linkages to the Pennsylvania Turnpike (Interstate 76).

FHWA, PennDOT, and MD SHA propose to complete Corridor N by constructing SR 6219, Section 050. This new 8-mile, limited-access roadway will connect Meyersdale, Pennsylvania, at the southern terminus of Section 020 to the north end of the newly constructed 1.4-mile segment of State Route 219 in Garrett County, Maryland (Figure 1). In addition to constructing the new roadway, the project includes erecting bridges; upgrading portions of the existing Mason Dixon Highway; extending Hunsrick Road on the east side of SR 6219; installing a cul-de-sac on Mountain Road and Clark Road; severing the existing connection to SR 219 and providing a new connection to existing State Route 219; establishing Business U.S. 219; providing drainage and storm water management systems; and constructing guiderails and other appurtenant facilities to streamline regional traffic movement. The project area spans Elk Lick, Greenville, and Summit Townships, and Salisbury Borough, in Somerset County, Pennsylvania (6 miles); and Garrett County, in Maryland (2 miles).

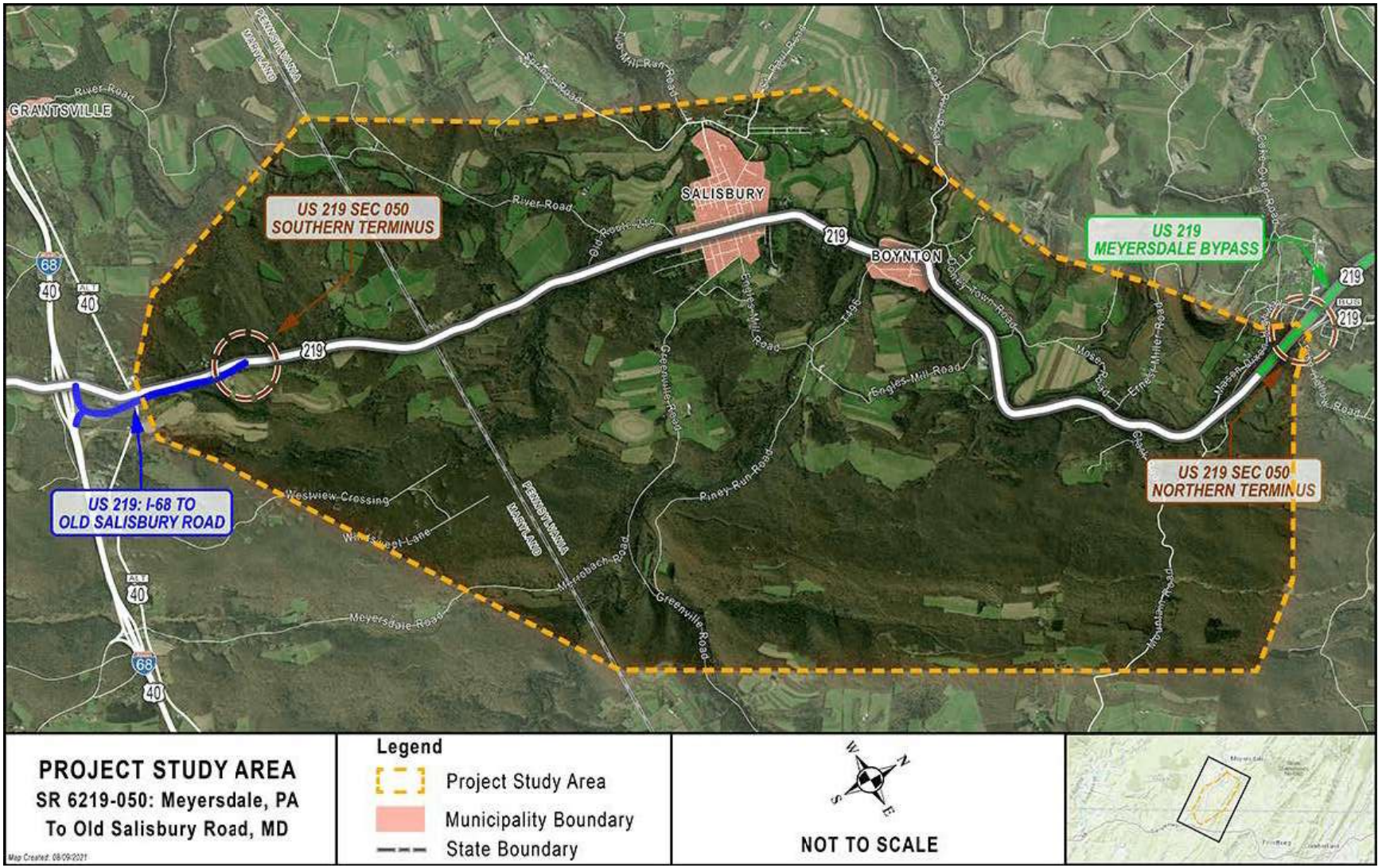

Figure 1. State Route 6219, Section 050 Transportation Project, project study area located in Somerset County, PA and Garret County, MD. Adapted from the Draft Environmental Impact Statement (FHWA/PennDOT/MD SHA 2024b)

Several alternative routes for this project are being considered (Figure 2), but FHWA, PennDOT, and MD SHA have narrowed the alternatives to four routes and the no build alternative. The BA states that Alternative E-shift Modified (Alternative 1) is the preferred alternative, so we focus our Opinion on this preferred alternative. This alternative ties into the newly constructed Maryland Section of State Route 219 eastward and shifts away from the Little Meadows Historic District. It involves two bridge crossings: one over Meadow Run and one 1.3 miles northeast over State Route 2010, Piney Creek, and Piney Run Road.

Avoidance, Minimization, and Conservation Measures

The BA incorporates the following avoidance and minimization measures into the project description. The Service has analyzed the effects of the proposed action based on the assumption that all avoidance and minimization measures will be implemented.

1. Conducting tree-clearing activities (clearing, grubbing, and associated noise) and building demolition during the winter season (stated as October 1 to March 31 in Table 7 of the BA, p.20). Tree cutting, clearing, and grubbing will not occur during the active season from April 1 to November 15 to avoid directly killing roosting bats.

2. The contractor will prepare a blasting plan and be responsible for:

    - Submitting the plan to the Service, PA Game Commission, and PennDOT for review and approval;
    - Monitoring all blasting for ground vibrations with sound and seismographic equipment;
    - Conducting blasting between November 1 to March 31 (Table 7 in the BA, p.20);
    - Not blasting within 0.2 miles of any known hibernacula;
    - Not blasting within one mile to the north and south of the Piney Creek bridge during winter hibernation (October 31 to March 31 (dates on p. 19); and
    - Maintaining a record of each blast for a period of five years.

3. Fitting construction equipment with functional mufflers to minimize noise impacts.

4. Complying with PA Department of Environmental Protection's Title 25 Rules and Regulation to minimize impacts due to diminished air quality.

5. Developing and implementing a planting plan for vegetation in the vicinity of known hibernacula in coordination with the Service and PA Game Commission. The plan will follow PA Game Commission and MD Department of Natural Resources guidelines to minimize future bat

roadway mortality (via creation of higher tree canopy to channel flying bats over the roadway).

6. Implementing an approved erosion, sedimentation, and pollution control plan and best management practices to reduce or eliminate sedimentation and run-off from construction activities and avoid degradation of streams (receiving waters) where bats may forage.

7. Performing all earth disturbance activities within 0.5 miles of the known bat hibernation sites (*i.e.*, BCM 2005-01, BCM 2005-19, BCM 2005-27, BCM 2005-28 and the large mine-cave) from April 1 to November 15 when bats are less likely to be in hibernacula.

8. Conducting excavation activities only during daylight hours (to avoid impacts to nighttime foraging).

ACTION AREA

The action area for the SR 6219, Section 050 Project includes the proposed roadway; land adjacent to the roadway project; and existing supporting roadways and appurtenant facilities where effects are reasonably expected to occur as a result of roadway construction activities and operation. This area also encompasses right-of-way limits; the paved roadway surfaces for connector roads; new medians; new and existing roadway shoulders (to connector roads); new road-cut/fill slopes; staging areas; utility relocations; stormwater management facilities; the extent of hydraulic modifications associated with alterations to flood events and surface runoff patterns; and areas affected by roadway-induced noise, runoff, invasive species, and changes in vegetation patterns (Figure 2).

The Project action area is primarily undeveloped forestlands (about 65%), interspersed with agricultural lands (23%), and development (9%). The action area includes rural communities, commercially timbered areas, abandoned mines and coal mining operations, previously surface-mined areas, deep mines (coal and limestone), reclaimed mine lands, cultural resources, and cottage industries. The project area is in the Casselman River watershed with 98 wetlands and 82 tributaries to the Meadow Run and Piney Creek sub-basins (FHWA, PennDOT, & MD SHA 2024b).

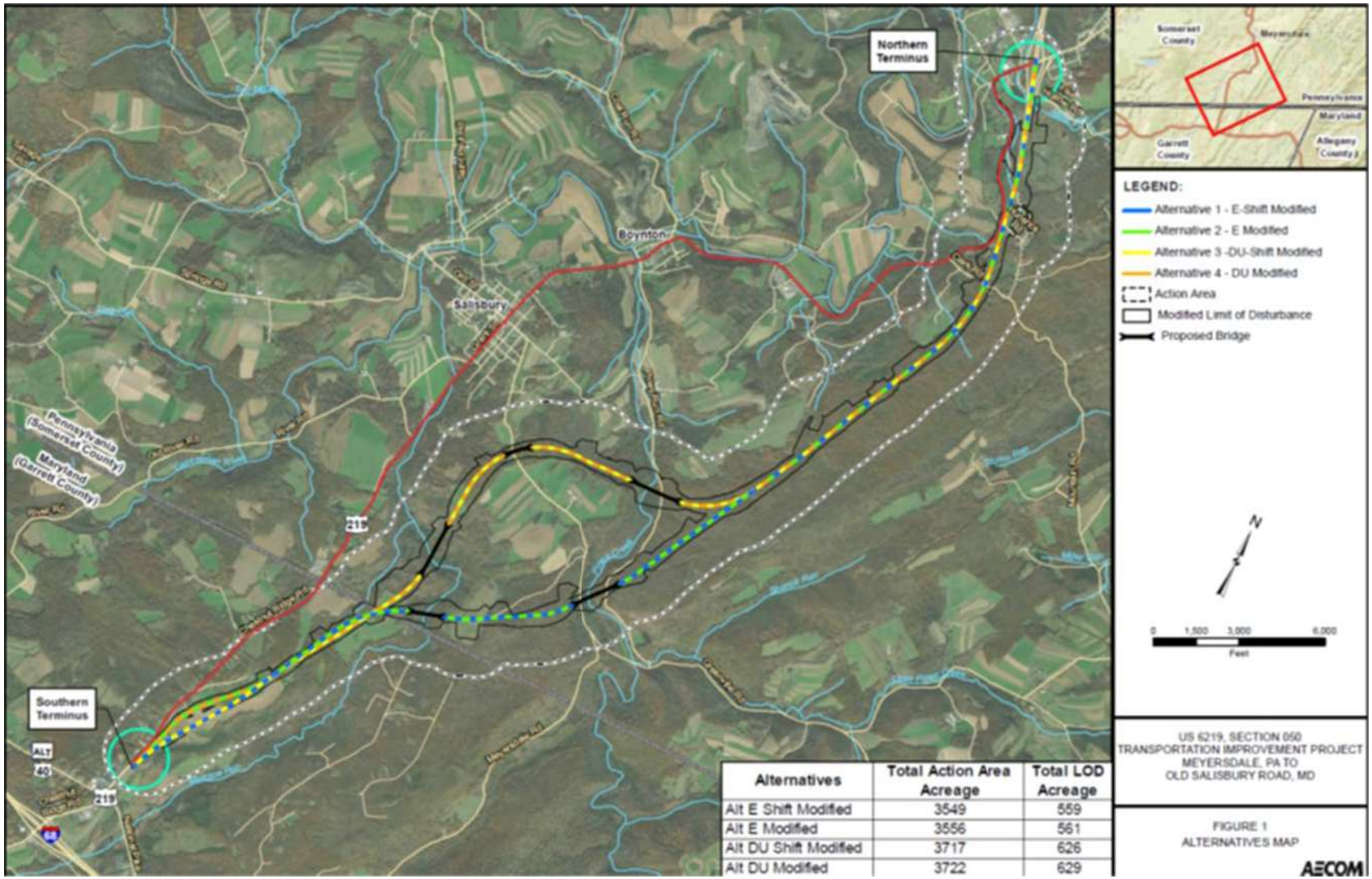

Figure 2. The SR 6219, Section 050 Transportation Project's proposed alignments and limits of disturbance located in Somerset County, Pennsylvania, Garret County, Maryland. Adapted from the biological assessment, Figure 1, by AECOM (FHWA/PennDOT/MD SHA 2024a).

STATUS OF THE SPECIES

Per ESA section 7 regulations (50 CFR 402.14(g)(2)), it is the Service's responsibility to "evaluate the current status of the listed species or critical habitat." The following summarizes the species' general life history, threats, demographics, and population trends, and recovery strategy drawn primarily from Service assessment, listing, and recovery documents.

Indiana Bat

The Indiana bat was listed as being in danger of extinction under the Endangered Species Preservation Act of 1966,[2] and received protection as an endangered species when the ESA was signed into law in 1973. The Service designated Critical habitat in 1976 at 13 hibernacula locations in six states). The Service developed a recovery plan for the species in 1983 (Service 1983). An agency draft of a revised plan was published in 1999 but was never finalized. A revision incorporating updated scientific information and recovery actions addressing specific threats was published in 2007 (Service 2007). After release of the draft revised recovery plan, previously undescribed impacts from white-nose syndrome (WNS)[3] were discovered. The Indiana bat recovery plan delineated four recovery units based on population discreteness and differences in population trends, land use, and macrohabitats.

The Indiana bat is a temperate, insectivorous, migratory bat that hibernates in mines and caves in the winter and spends summers in wooded areas. The key stages in their annual cycle are hibernation, spring staging and migration, pregnancy, lactation, volancy or weaning, fall migration, and swarming. While varying with weather and latitude, Indiana bats generally hibernate between mid-fall through mid-spring each year. Spring migration likely runs from mid-March to mid-May each year, as females depart shortly after emerging from hibernation and are pregnant when they reach their summer area. Young are born between late May or early June, with nursing continuing until weaning, which is shortly after young become volant in mid- to late-July. Fall migration typically occurs between mid-August and mid-October.

The basic resource needs for the Indiana bat across the species entire range are safe winter hibernation sites; forested spring staging/fall swarming habitat; connected forested summer habitat for roosting, foraging, and commuting; forested migratory stopover habitat; safe migration passage; insects; and clean drinking water (*e.g.*, streams, riparian areas, and wetlands).

Currently, some Indiana bat populations in the range are increasing, some show evidence of stabilization and others continue to slowly decline (Service 2024a). Declines are associated with the onset of WNS, which spread south and west from NY across the range of the species. Though declines have been observed in all Recovery Units, impacts have been most severe in areas with the longest exposure to WNS, specifically in the northeast. Since the onset of WNS, population declines of 75-99 percent have been reported in NY, PA, and WV. Intrinsic biological constraints also affect Indiana bat reproductive capacity. Because healthy adult females can produce only one pup per year, constraints

[2] 32 FR 4001, March 11, 1967
[3] White-Nose Syndrome

also affect Indiana bat reproductive capacity. Because healthy adult females can produce only one pup per year, high adult female survival rates are needed to maintain or increase populations (Thogmartin et al. 2013).

The Indiana bat is no longer found in several previously occupied hibernacula, and a small number of locations now host most of the surviving individuals. The causes of variation in mortality by site are not well understood. According to the Service's most recent Indiana bat 5-Year Review, 93 percent of the Indiana bats identified in the Northeast Recovery Unit were found at a single location, and 72 percent of the individuals found in the Appalachian Mountains Recovery Unit were found at three hibernacula sites (Service 2019). This concentration of individuals increases the population-level threat posed by potential adverse impacts at any of these remaining locations.

Regarding maternity colony populations on the summer landscape, changes are not clear; however, variation in mortality is expected to reflect winter observations as noted above.

More information on the Indiana bat, including the draft recovery plan and 5-year reviews, can be found on the Service's Environmental Conservation Online System (ECOS) webpage at *https://ecos.fws.gov/ecp/species/5949*.

Northern Long-eared Bat

The northern long-eared bat (NLEB) was listed as a threatened species under the ESA on April 2, 2015 (80 FR 17974). The Service issued a final 4(d) rule for this species on January 14, 2016 (81 FR 1900). In responding to a court order requiring the Service to reconsider the 2015 listing decision, the Service subsequently published a final rule to reclassify the NLEB as endangered under the ESA on November 30, 2022 (87 FR 73488). The final rule became effective on March 31, 2023, which then removed the NLEB species-specific 4(d) rule.
Species description, life history, population dynamics, status, and distribution are fully described for the northern long-eared bat in the Species Status Assessment Report for the Northern long-eared bat (*Myotis septentrionalis*), dated August 2022 (pages 3 to 59). This information is hereby incorporated by reference. The species status assessment can be found at the following link: https://www.fws.gov/sites/default/files/documents/Species%20Status%20Assessment%20Report%20for%20the%20Northern%20long-eared%20bat-%20Version%201.2.pdf .

The northern long-eared bat is a wide-ranging bat species found in 37 states and 8 Canadian provinces in North America. This species typically overwinters in caves or mines and spends the remainder of the year in forested habitats. The northern long-eared bat is distinguished by its long ears.

Summer Habitat - During the summer, northern long-eared bats roost singly or in colonies in cavities, underneath bark, crevices, or hollows of trees and/or dead snags that have a diameter at breast height (dbh) of 3 inches or greater. These species may also roost in cooler places, like caves and mines (males and non-reproductive females) and have been occasionally found roosting in structures like barns and sheds, particularly when suitable tree roosts are unavailable. Northern long-eared bats emerge at dusk to forage in upland and lowland woodlots and tree-lined corridors, and feed on insects,

which they capture in flight. These species also feed by gleaning insects from vegetation and water surfaces.

Summer habitats for the northern long-eared bat includes a wide variety of forested/wooded habitats where they roost, forage, and travel (Service 2014). Summer habitat also includes adjacent and interspersed non-forested habitats, such as emergent wetlands, adjacent edges of agricultural fields, old fields, and pastures. These species also use forests and woodlots containing potential roosts (*i.e.,* live trees and/or snags greater than or equal to 3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be a dense or loose collection of trees with variable amounts of canopy closure. Northern long-eared bats or tricolored bats may use individual trees when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat. Various studies have also noted these bat species roosting in human-made structures, such as buildings, barns, bridges, and bat houses. These structures would also be potential summer habitat.

Northern long-eared bats typically occupy their summer maternity habitat from mid-May through mid-August each year and the species may arrive or leave some time before or after this period. The Service (2014) defines northern long-eared bat maternity habitat as suitable summer habitat used by juveniles and reproductive (pregnant, lactating, or post-lactating) females. Northern long-eared bat home ranges consist of maternity roosts, foraging habitat, alternate roosts, and commuting corridors.

Winter Habitat – Winter habitat (hibernacula) for the northern long-eared bat includes underground caves and cave-like structures (*e.g*. abandoned or active mines, railroad tunnels) (Service 2014). Their hibernacula typically have large passages with significant cracks and crevices for roosting; relatively constant, cool temperatures (0-9 degrees Celsius for northern long-eared bats) and with high humidity and minimal air currents. Within hibernacula, northern long-eared bats can be found in small crevices or cracks, often with only the nose and ears visible. These bat species will typically hibernate between mid-fall through mid-spring each year (exact dates vary).

Although there are many threats to the species, the predominant threat by far is White Nose Syndrome (WNS), causing a 97 to 100 decline across the species' range. In fact, WNS was the main reason for originally listing the species as threatened under the Endangered Species Act. This malady reached Pennsylvania in 2007-2008 and is believed to have reached Somerset County around 2010 - 2011 (PA Game Commission, 2019).

Other threats to the northern long-eared bat include (Service 2022a):

1. *Summer habitat loss*. Highway construction, development, and surface mining construction permanently remove habitat. Loss of summer habitat can result in longer flights between suitable roosting and foraging habitat, fragmentation of maternity colonies and direct injury or mortality.
2. *Winter habitat loss and disturbance.* Caves, mines, and tunnels may be destroyed or damaged by construction activities. In addition, cave-dwelling bats are vulnerable to human disturbance while hibernating. Arousal during hibernation causes bats to use up their already-reduced energy stores, leading to reduced survival during the winter.

Structures intended to exclude people from caves and mines may restrict bat flight and movement and change airflow and internal cave and mine microclimates. A few degrees change in temperature can make a cave unsuitable for hibernating bats.

3. *Wind energy-related mortality*. Wind turbines can kill bats by direct collision with turbine blades.
4. *Climate change.* Changes in temperature and precipitation can influence the species' available suitable roosting and foraging habitat and prey availability.

In Pennsylvania, northern long-eared bats are found regularly in hibernacula surveys, although typically observed in low numbers or individual bats. There are over 300 known northern long- eared bat hibernacula in Pennsylvania, distributed among 49 counties, including Allegheny, Armstrong, Beaver, Bedford, Berks, Blair, Bucks, Butler, Cambria, Carbon, Centre, Clarion, Clearfield, Clinton, Columbia, Cumberland, Dauphin, Elk, Fayette, Fulton, Greene, Huntingdon, Indiana, Lackawanna, Lancaster, Lawrence, Lehigh, Luzerne, Lycoming, McKean, Mercer, Mifflin, Monroe, Montgomery, Northampton, Northumberland, Perry, Potter, Schuylkill, Snyder, Somerset, Tioga, Venango, Warren, Washington, Wayne, Westmoreland, Wyoming, and York. These hibernacula include limestone caves, mines (*e.g.*, limestone, anthracite coal) and abandoned tunnels (*e.g.*, railroad and highway). Northern long-eared bats have been found to use rocky outcroppings as hibernacula, albeit very infrequently (Nordstrom 2023). Due to their affinity for small crevices and cracks, northern long-eared bats are often difficult to detect during winter hibernacula surveys and estimating the total population is difficult. Before WNS, the average number of northern long-eared bats observed during winter surveys was approximately 18 per hibernaculum (range 1 to 881) (Pennsylvania Game Commission, unpublished data). Since the spread of WNS across Pennsylvania, there has been a 99 percent decline in winter counts, and the northern long-eared bat is now rarely encountered in hibernacula (Turner *et al*. 2011).

Northern long-eared bats were once considered common in summer surveys in Pennsylvania and potential suitable summer habitat occurs throughout the State. Northern long-eared bats also occasionally use rocky outcroppings as summer roosts (FHWA/PennDOT/MD SHA 2024). Before WNS, northern long-eared bats, including reproductive females and juveniles, were commonly caught during summer bat mist-net surveys. Mist-netting data from Pennsylvania indicate that northern long-eared bat captures declined by 46 percent in 2011, 63 percent in 2012, and 76 percent in 2013, compared to pre-WNS capture rates (Butchkoski 2014; Pennsylvania Game Commission, unpublished data). The decline in northern long-eared bat captures undoubtedly equates to a reduction in the size and/or number of maternity colonies in Pennsylvania. Because northern long-eared bats were an abundant species prior to the spread of WNS, few telemetry studies were conducted to define maternity colonies. Many of the known capture locations probably represented maternity activity but in the absence of additional effort to define habitat used by captured, lactating female bats, few maternity roost trees have been identified. It is unknown if concentrated northern long-eared bat maternity colonies exist within the project action area. However, juvenile and lactating female capture records suggest that such roosts are widespread throughout the State.

Proposed Endangered Species - Tricolored bat

The species status and life history are available in the species status assessment (USFWS 2023) at the following link: https://ecos.fws.gov/ServCat/DownloadFile/221212) and the proposed listing rule at the following link: https://www.federalregister.gov/documents/2022/09/14/2022-18852/endangered-and-threatened- wildlife-and-plants-endangered-species-status-for-tricolored-bat.

The tricolored bat is a small insectivorous bat. It is distinguished by its tricolored fur and is yellow to nearly orange in color. This once-common species is wide ranging across the eastern and central United States and portions of southern Canada, Mexico and Central America. The tricolored bat is often found in caves and abandoned mines during the winter in its northern range. During the spring, summer, and fall, the tricolored bat can be found in forested habitats where they roost in trees, primarily among leaf clusters of live or recently dead deciduous hardwood trees, but may also be found in pine trees, and less commonly, human structures. Tricolored bats have been known to use rocky habitat as summer roosts (M. Turner, USFWS, pers. comm.).

Summer Habitat - During the summer months, tricolored bats typically roost in leaf clusters of live or recently dead deciduous hardwood trees. This species may also roost among pine needles, eastern red cedar, and in artificial roosts (*i.e.,* barns, beneath porch roofs, and bridges), but rarely within caves. Similar to northern long-eared bats, the tricolored bat, emerges at dusk to forage over waterways and forest edges in upland and lowland woodlots and tree-lined corridors. They feed on insects, which they capture in flight. They may forage closer to the ground later in the evening. This species also feed by gleaning insects from vegetation and water surfaces (Service 2021).

Winter Habitat - The tricolored bat uses caves and mines, and where caves are sparse (*i.e.*, southern U.S.) they use road-associated culverts (https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus - accessed February 21, 2025). Their hibernacula typically have large passages with significant cracks and crevices for roosting; relatively constant, cool temperatures (10.3 to 11.4 degrees Celsius for tricolored bat) and with high humidity and minimal air currents. Within hibernacula bats can be found in small crevices or cracks, often with only the nose and ears visible. These bat species will typically hibernate between mid-fall through mid-spring each year (exact dates vary).

The tricolored bat faces extinction due to the range-wide impacts of WNS. Most summer and winter colonies experienced severe declines following the arrival of WNS (Service 2021). For example, Turner et. al. (2011) estimated that tricolored bats had declined by 75% in winter counts across 42 sites in Vermont, New York and Pennsylvania only 4 years after the discovery of WNS (Service 2021).

Threats to the tricolored bat also include 1) wind-related mortality, 2) habitat loss (summer roosting/foraging/commuting and winter roost loss and disturbance), and 3) climate change (Service 2021)

Additional considerations. The above analysis does not reflect the anticipated ongoing effects of WNS on bat populations, including the local Indiana bat, northern long-eared bat or tricolored bat populations. By 2010, WNS had been documented throughout much of Pennsylvania, reaching

Somerset County around 2010-2011 (PA Game Commission, 2019). While the effects of WNS vary from hibernaculum to hibernaculum, it does not appear that any sites are completely spared from the effects of WNS once it has become well established in an area. We do not have estimates of adult survivorship, juvenile survivorship, and fecundity for northern long-eared bat and tricolored bat populations affected by WNS in Pennsylvania. Because WNS has such a detrimental effect on body condition, documented population declines probably reflect substantial declines in several demographic parameters, including adult survivorship, fecundity, juvenile survivorship, and consequently recruitment. Although most sites in Pennsylvania have now been contaminated by this fungus, preliminary research in Pennsylvania documents all survivors still become infected annually (PGC 2019). It is likely that these few survivors exist on their limited fat reserves, and every disturbance is an additional cost on those reserves. Every disturbance may directly cause mortality later in the hibernation season, or it may lower the fitness of adult females enough to inhibit their ability to successfully reproduce.

There are about 17 years of WNS population monitoring in the northeastern United States, and research has shown that there may be surviving population units that have some level of resistance to WNS considering 1) many hibernacula have been affected by WNS for multiple years, 2) bats exhibit a high degree of fidelity to their hibernacula, 3) bats using these hibernacula are presumed to have been exposed to WNS, and 4) bats that have presumably been exposed to WNS are returning to the same hibernacula. Researchers have observed a progressive lessening of mortality rates at some New York hibernacula (Langwig *et al*. 2010), which suggests some resistance to WNS may be developing. According to Greg Turner with the PA Game Commission (PGC) (pers comm, December 10, 2021), there are survivors of WNS in bat colonies in Pennsylvania. Turner noted, however, that due to their encounters with WNS, bat behaviors have changed dramatically, including seeking out colder temperatures for hibernation. As a result, PGC is seeing bats occur in places where they were not previously found, as it appears that they are preferentially selecting caves and rooms in caves that are significantly cooler (*i.e*., near the entrance). In some cases, their populations are small, but stabilizing.

Efforts are ongoing in North America and Europe to slow the spread of WNS, and to investigate its cause, transmission, effects, and potential treatment. The goal of these studies are to decrease bat vulnerability to WNS and prevent species extinctions. In addition, based on the documented resistance of European *Myotis* species to *Pseudogymnoascus destructans* (the fungus that causes WNS), it is plausible that immunological or behavioral resistance to WNS exists or will develop in North American *Myotis* species, including the northern long-eared bat and tricolored bat. If ongoing research efforts are successful in identifying ways to lessen the effects of WNS, any modeling efforts would have to incorporate initially low survivorship rates followed by higher survivorship rates. At this time, there is no way of knowing how or to what degree human intervention will influence survivorship rates.

As described in the Species Status Assessments for the northern long-eared bat and the tricolored bat Service 2021 & 2022a), and the Canadian Recovery Strategy for these two species (ECCC 2018), the conservation and recovery needs for these species include:

1. Maintain (and where feasible, increase) the population compared to their current level;
2. Sustain populations of these species or improve their abundance;
3. Maintain suitable roosting and foraging habitat near abundant food and water (prey availability) for all seasons;
4. Maintain or improve habitat connectivity and open-air space (a matrix of interconnected habitats) for safe migration between winter and summer habitats, that support summer maternity colony formation and foraging, fall swarming, and winter hibernation;
5. Maintain or improve winter habitat with suitable microclimate conditions for prolonged bouts of torpor and shortened periods of arousal; and
6. Preserve cave and/or mine entrances (or other similar locations, *e.g.*, culvert, tunnel) for conspecifics to swarm and mate.

ENVIRONMENTAL BASELINE

In accordance with 50 CFR 402.02, the environmental baseline refers to the condition of the listed species (or its critical habitat in the action area, if so designated), without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions that are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.

Status of the Indiana Bat, Northern Long-eared Bat, and Tricolored Bat in the Action Area

The BA details two decades of hibernacula, habitat, trapping, and acoustic surveys. All three bat species have been detected at various times. It appears that local abundance has declined, consistent with range wide declines of many cave or mine hibernating bats since the late 2000s due to white-nose syndrome. Surveys show that male and non-reproductive females of all three species hibernate in, or near, the action area and likely use forested habitat for spring staging, fall swarming, and summer use.

Known and potential winter habitats in the action area

Large Mine-Cave Hibernacula – A large mine-cave (limestone mine) exists within the proposed action area. [redacted] This feature has been surveyed several times by the PGC in 1999, 2003, and 2004; and by consulting bat biologists in 2014 and 2022. Based on survey results over time, the Indiana bat, northern long-eared bat, and tricolored bat have all been found in this hibernaculum.

Other Mine Openings – Consulting bat biologists have found, trapped, and acoustically surveyed potential hibernacula from 2005 to 2023 (Table 1 and 2 of the BA, pp. 6 to 9). These efforts resulted in the discovery of six hibernacula with documented northern long-eared bat and tricolored bat use (in

addition to the above large mine-cave). These sites are named BCM 2005-01, BCM 2005-19, BCM 2005-27, BCM 2005-28, Portal JAZ-3, Air Shaft APN-2. All but the last two sites are present within the preferred alternative's project area.

Rocky outcrops – Consultants identified areas of rocky habitat throughout the proposed project area in 2014. The bat biologists found 15 distinct rocky outcrop areas, including areas with suitable roosting characteristics such as eastern or southeastern sunlight exposure and abundant cracks and crevices (FHWA, PennDOT, and MD SHA 2024a, Appendix C). Only one rocky outcrop with low to medium bat use potential, referred to as "RH2014-03", was identified within the proposed limit of disturbance.

Known and potential warm season habitats in the action area

Summer roosting – The project area can be characterized as a mixed mature hardwood forest with limited disturbances from historic mining or other anthropogenic activities. Dominant tree species includes sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), hickory (*Carya* sp.), American beech (*Fagus grandifolia*), honey locust (*Gleditsia triacanthos*), red oak (*Quercus rubra*), white oak *(Quercus alba*), yellow birch (*Betula alleghaniensis*), chestnut oak (*Quercus prinus)*, cherry (*Prunus* sp.), hemlock (*Conium maculatum*) and green ash (*Fraxinus pennsylvanica*) (FHWA, PennDOT, MD SHA 2024a, Appendix C).

Consultants conducted habitat assessments[4] within the project area to determine suitability of summer roosting, foraging, and maternity colony habitation for bats. According to the BA (FHWA, PennDOT, MD SHA 2024, Appendix C), the consultants assessed a total of about 400 acres of forested habitat and found suitable summer habitats and roost trees. Table 2 identifies suitable summer habitat for roosting in the entire action area and Table 3 identifies potential foraging habitat for the preferred Alternative 1. The BA defines foraging habitat as riparian corridors and cleared utility line rights-of-way.

Table 2. Suitable Summer habitat Within the Action Area and Limit of Disturbance (FHWA, PennDOT, & MD SHA 2024)

	Forest in Action Area (Acres)	Forest in the Limit of Disturbance (Acres)
Alternative 1 - E-shift Modified	2,418	398

[4] These assessments included an evaluation for preferred forest characteristics (presence of shagbark hickory, sugar maple, black birch, elm, red oak, and white oak; pole stage forest with minimal to moderate understory habitat; available roost locations (≥3-inch diameter at breast height)), distance from a water source, presence of flyways (*i.e.*, historic railroad beds, ATV trails, hiking trails, access roads, stream and/or riparian corridors with limited understory, natural openings/gaps within the forested areas for travel and foraging), and slope of the topography.

Table 3. Potential Foraging Habitat Within the Action Area and Limit of Disturbance (FHWA, PennDOT, & MD SHA 2024)

	Foraging Habitat in Action Area (Acres)	Foraging Habitat in the Limit of Disturbance (Acres)
Alternative 1 - E-shift Modified	74	8

In 2008 bat biologists conducted mist-net surveys. The 2008 surveys failed to detect Indiana bat maternity activity within the proposed project action area. During the summer of 2014 bat biologists surveyed about 30 sites to detect bats in Pennsylvania and Maryland. Two northern long-eared bats were captured, transmittered, and tracked. As a result, five northern long-eared bat roosts were identified. In the summer of 2022, bat biologists conducted acoustic surveys at 46 sites throughout the proposed project action area. Tricolored bats were detected at 2 of the 46 sites. The BA concludes that, based on the negative mist-net and acoustic survey results, Indiana bat and northern long-eared bat maternity colonies may no longer occur within the project action area (FHWA, PennDOT, MD SHA 2024a).

Bridges and Culverts – Bridges and culverts can serve as summer roost habitat for northern long-eared bats and tricolored bats. Consultants did not conduct bridge and culvert investigations on existing bridges or culverts that may be affected by the project's proposed roadway modifications and upgrades. Bridges and culverts on the proposed new section of roadway have not yet been constructed.

EFFECTS OF THE ACTION

In accordance with 50 CFR 402.02, effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action but that are not part of the action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR § 402.17).

The proposed project's effects can be categorized as effects during roadway construction and effects during roadway operation (use after roadway completion). FHWA, PennDOT, and MD SHA have committed to avoidance measures to reduce the risk of direct take of these bat species, as listed in the Description of the Proposed Federal Action section above. This section summarizes the remaining direct and indirect adverse effects to the species.

Effects of Roadway Construction

The primary effects of construction of this project to the Indiana bat, northern long-eared bat, and tricolored bat are the harm, harassment, and killing of bats due to structure demolition, road mortality, loss or alteration of hibernacula, loss or alteration of rocky roosting and hibernation habitat, changes in water and air quality, and construction noise and lighting.

Timing of Structure Demolition – Northern long-eared bats may roost in buildings and structures. The project proponents propose to conduct building and structure demolition between October 1 and March 31 to avoid potential direct effects to roosting bats that may be using the structures. However, this proposed avoidance period includes October 1 to November 15, when Indiana bat, northern long-eared bat, and tricolored bat populations often increase near their hibernation sites for fall swarming. As a result, the proposed October 1 to March 31 window reduces but does not eliminate the risk of demolition activities harming or killing the swarming bats in the weeks leading to hibernation, if they roost in the structures.

Roadway Mortality – During the three-year construction period, a variety of detours and other traffic controls will be in place that are likely to reduce vehicle speeds or maintain the current vehicle speed on current existing roadways. Consequently, the risk of vehicle induced bat mortality will be reduced, or remain unchanged, on the existing roadways during construction.

Loss or Alteration of Hibernacula – Earth disturbance activities such as blasting, excavation, and pile driving could lead to inner collapse, altered airflow, or changed temperatures of hibernacula (the "large mine-cave " and the presumed occupied hibernacula (BCM 2005-01, BCM 2005-19, BCM 2005-27, BCM 2005-28)). The large mine-cave is oriented in a southwesterly to northeasterly direction, parallel to the proposed alignment. Based on the information provided, none of the passages in the large mine-cave are located closer than 335 meters (1,100 feet) from the top cut for Alternative 1. Geotechnical investigations show that the area of the large mine-cave is comprised of competent rock below the surface, which minimizes the risk of collapse of the hibernaculum opening. Shaking, tremors, and potential rock fall could still disturb bats using the hibernacula, so the project proponents plan to minimize direct effects to hibernating bats by conducting all earth disturbance and construction activities within 0.5 mile of these five hibernacula during the active bat season (April 1 to November 15) when bats are least likely to be in the hibernacula. The remaining effects include forest removal for a proposed fill slope about 1,000 feet away from the large mine-cave's subsurface opening, which can alter air flow, humidity, and internal air temperatures of the large mine-cave and render the hibernaculum unsuitable for returning bats.

Loss or Alteration of Rocky Habitat – The northern long-eared bat and tricolored bat have been known to use rocky habitats such as road cuts, talus slopes and other rock outcroppings as summer roosts, maternity colony habitats (FHWA, PennDOT, MD SHA 2024a), and winter hibernation habitat (Nordstrom 2023). A reconnaissance evaluation (2014) revealed 15 distinct rocky areas totaling about 30,619 m^2 (7.55 acres) (surface area). Of those 15 sites, 9 were identified as suitable habitat for the northern long-eared bat and tricolored bat. Some of these habitats were low to medium quality with east to southeast sunlight exposure and numerous cracks and crevices for bat roosting and hibernating. Only one rocky habitat (RH2014) was identified within the limit-of-disturbance for all Alternatives. FHWA, PennDOT, and MD SHA stated that they will avoid identified rocky habitats where feasible but did not define the circumstances of feasibility. The project proponents also commit to offsetting impacts to rocky outcroppings by designing, creating, and rebuilding these outcroppings. If rocky habitats are not avoided, then any northern long-eared bats or tricolored bats that may be roosting or hibernating in the rocks would be harmed or killed by blasting and drilling activities.

Changes to Water Quality – Aquatic habitats serve as bat habitat and flyways. Negative effects to water quality may adversely affect bat foraging behavior because these aquatic resources provide water and insect forage for bats. The proposed project will result in permanent, direct disturbance to about 82 stream channels and 10 wetlands. FHWA, PennDOT, and MD SHA anticipate disturbance to aquatic resources throughout 2029 to 2031. Efforts will be made to minimize the lengths of stream crossing culvert structures to reduce alteration, but the BA did not state the extent of this minimization. There will likely be temporary changes in water quality within the action area due to earth disturbance, associated runoff, and the use of construction vehicles. Siltation resulting from construction is expected to temporarily reduce or eliminate aquatic insect abundance in local stream segments. Stormwater runoff during the period of earth disturbance has the potential to reach streams or other water bodies, reduce water quality for the bats to drink, or reduce the number of emerging aquatic insects available to the bats to use as a food source. Similarly, hazardous material releases (oils, lubricants, gasoline) from construction vehicles have the potential to contaminate receiving waters (*e.g.*, Piney Creek and its tributaries, Meadow Run and its tributaries, Casselman Run and its tributaries, and Schoolhouse Run and its tributaries). Project proponents commit to developing and complying with an approved Erosion and Sedimentation Pollution Control Plan, approved post-construction stormwater management plan, and an approved Pollution Prevention and Contingency Plan to minimize potential impacts on aquatic habitats and water quality. Due to these plans, we do not anticipate significant adverse water quality changes that lead to take of Indiana bats, northern long-eared bats or tricolored bats.

Changes to Air Quality – There will likely be temporary changes in air quality within the action area due to earth disturbance and the use of construction vehicles. The creation of airborne dust from construction equipment is likely to occur due to all earth-moving activities, and this activity during the active season of bats has the potential to interfere with breathing and foraging behavior. The significance of this effect is dependent on many factors, including humidity, wind velocities and direction, and location of soil disturbances. Construction activities will create dust during the spring, summer, and autumn when bats are roosting and foraging in the action area. Suspended dust will harm roosting bats if it interferes with breathing or coats their fur, either of which may cause them to relocate farther offsite where they may face competition from other bats or be faced by unfamiliar habitat with unknown, or potentially less available, foraging, roosting or drinking opportunities. Dust will also coat adjacent vegetation, thus possibly reducing insect production locally; thereby reducing foraging opportunities adjacent to the road. W e anticipate that potential adverse effects from dust will be limited to the area immediately adjacent to the construction corridor. Project proponents have committed to comply with Pennsylvania Department of Environmental Protection rules and regulations (Title 25) but do not specify how they will achieve this, nor were any dust control strategies provided to eliminate or ameliorate the effects of changes in air quality conditions during construction. The implementation of dust control strategies and presence of adjacent vegetation will eliminate or reduce the settling distance and the risk of adverse effects to Indiana bats, northern long-eared bats, and tricolored bats.

Construction Noise – Project construction is likely to adversely affect Indiana bats, northern long-eared bats, and tricolored bats due to noise, vibration, and lighting related to construction activities adjacent to roosting and overwintering habitat. These activities include blasting, excavation, and pile driving. These disturbances may cause a shift in roosting behavior away from the project area and

expose those animals to competition from other bats; unfamiliar habitat with unknown, or potentially less available, foraging, roosting or drinking opportunities; increased predation; or habitat that is already at or above its carrying capacity. FHWA, PennDOT, and MD SHA proposed tree clearing from October 1 to March 31 to reduce noise effects to roosting bats. This proposed time period includes the fall swarming period (including October 1 to November 15) when bats congregate near hibernacula, so noise effects are not entirely minimized.

Construction Lighting – Lighting is proposed for nighttime construction activities throughout the project's duration and maintained long-term throughout the life of the project. Bat behavior can be affected by lights when traveling between roosting and foraging areas (Bat Conservation Trust 2023). Foraging in lighted areas may increase risk of predation (leading to death) and it may deter bats from flying in those areas. Bats that significantly alter their foraging patterns may increase their energy expenditures resulting in reduced reproductive rates, depending on the context of the lighting (*e.g.,* duration, location, extent, type) (Stone, et.al 2009). In contrast, some bat species seem to benefit from artificial lighting, taking advantage of high densities of insects attracted to light. There is limited information regarding potential neutral, positive, or negative impacts to Indiana bats, northern long-eared bats and tricolored bats.

Project Operational Effects

Upon completion, the proposed project will have operational effects from roadway mortality, loss and alteration of forested, reduced habitat quality, decreased habitat connectivity, and lighting.

Roadway induced mortality – Indiana bats, northern long-eared bats, and tricolored bats are vulnerable to mortality from vehicle strikes, especially when traffic volume and speed are relatively high, and the road occurs within established foraging areas (Russell *et al*. 2009). No vehicle-induced bat mortality has been reported in the action area for the existing roadways in the valley floor of action area; however, vehicle strikes of bats are extremely difficult to detect and no active searches have been completed. Factors that affect the risk of road mortality include traffic volume, traffic speed, the timing of traffic, and the attractiveness of roadway habitat.

Lode (2000) found that wildlife roadkill increased exponentially with increased traffic volume. Traffic and traffic speed will increase through the action area upon the completion of this limited-access roadway where one did not exist previously. According to the Draft Environmental Impact Statement (FHWA, PennDOT, and MD SHA 2024b), the annual traffic volume for the existing US 219 roadway corridor between 4,669 and 4,811 vehicles per day, with 19 to 25 percent of those vehicles being heavy trucks (FHWA Classes 6-13). Project proponents project traffic to increase by approximately 30% (FHWA, PennDOT, and MD SHA 2024b). This increase in traffic volume will likely increase the risk of bat mortality from vehicle strikes.

The ability of an animal to avoid a traffic collision influences road mortality. Slower traffic allows more time between when an animal perceives a vehicle as a threat and engages in avoidance behavior. Studies with captive bats have shown that they can avoid colliding with moving objects more successfully than stationary ones, presumably because their foraging habits adapt them to detect moving objects (Jen and McCarty 1978). However, as vehicle speed increases, bats are less likely to

perceive a distant but rapidly approaching vehicle as a threat and are less likely to have sufficient reaction time to avoid a collision once the threat is perceived. Also, road mortality may affect young of the year bats more than adults (Lesinski 2007), which would affect the population's recruitment.

While migrating bats would presumably only be in the action area for a short period (*i.e.,* while passing through the area or stopping over for a night to forage and roost), summer residents would be exposed to the presence of the new roadway within their home ranges for a large portion of the year. It is not known to what degree short-term versus long-term exposure to a new roadway influences mortality risk, or to what degree flight mode (migratory travel versus foraging) influences mortality risk. However, it is reasonable to assume that the risk of mortality increases with increasing exposure, especially if bats are unable to perceive and avoid the risk of death by vehicle collision and must locate alternate foraging habitat. We have no specific information available regarding traffic volume during the periods when Indiana bats, northern long-eared bats or tricolored bats are most likely to be crossing the project area. Presumably, vehicle traffic volume is highest during the day, and relative to bat activity, at sunset. A shift in the temporal distribution or volume of traffic, post-project, could result in an increased or decreased risk of bat mortality, depending on the shift.

In Pennsylvania, Russell et al. (2009) documented an Indiana bat mortality when a major highway separated a roost site from a foraging area, and that bats flew lower and closer to traffic in open areas when adjacent tree canopy was low. The project proponents propose a planting plan to restore canopy cover to reduce bat roadway mortality. If canopy can be restored and maintained, then presumably the effect of road mortality on bats would decrease upon restoration.

Indiana bats have been observed foraging at forest edges (LaVal and LaVal 1980). The road is a massive structure that acts as a heat sink/source, warming during the day and radiating heat in the evening, a characteristic that has been observed to attract some bat species. Particularly on cooler nights, bats and their prey may be attracted to heat radiating from the warmer road, increasing their risk of collision.

Forest Habitat and Roost Tree Loss – According to the BA (FHWA, PennDOT and MD SHA 2024a) the SR 6219, Section 050 project area has 3,549 acres of High-Quality Forest habitat which contains five documented northern long-eared bat roost trees and has potential maternity use by tricolored bats. The proposed project will remove 400 acres of forest land, all of which is suitable for bat fall swarming, warm season foraging, and spring staging around the known hibernaculum (large mine-cave) and the five other presumed-occupied mine openings.

The behavior of Indiana bats, northern long-eared bats, and tricolored bats in response to the forest clearing and proposed roadway realignment and widening are difficult to predict. Individual bats are likely to return to the project area after hibernation and may find their former roosting trees unavailable. While bats tend to use the same roost sites annually, roosts are naturally ephemeral resources. Therefore, Indiana bats, northern long-eared bats, and tricolored bats have evolved to be able to find replacement roosts, if available, when their previously used roost trees become unsuitable. Until the bats from the colony locate another desirable primary roost tree and reunite, individual members will be subject to increased stress from searching for a replacement primary roost tree, which increases energy expenditure and risk of predation; roosting in alternate trees that are less effective in

meeting thermoregulatory needs; or roosting singly, rather than together, which decreases the likelihood in meeting thermoregulatory needs, thereby reducing the potential for reproductive success.

Suitable, and potentially occupied, foraging, roosting, and maternity habitat is available nearby for the displaced bats. The BA concludes that large tracts of State-owned land will remain undisturbed in the region (*i.e.,* 54,450 acres of protected suitable forest habitat in PA State Game Lands 231 and the Maryland Savage River State Forest). However, these lands have existing competing bats, predators, or locally unfavorable conditions. For example, State Game Land 231 is near the known hibernaculum and directly adjacent to the project area, but it is a ridge top area with limited water resources, making it less suitable as foraging and roosting habitat for bat species. Savage River State Forest is 11 miles away. This distance is larger than the foraging distances used to estimate home ranges for the northern long-eared bat and tricolored bat (1.5 miles from known roosts and 3 miles from confirmed captures, Service 2024). The bats may not find suitable habitat quickly enough post-spring emergence to recover fat reserves adequate to reproduce or survive, particularly those individuals with diminished vigor because of WNS during hibernation. A loss of individual bats during the maternity season would negatively affect recruitment and reduce the size of the local hibernating populations to which they belong.

Reduced habitat quality – The loss of habitat will extend beyond the area of forest removal and disturbed stream habitat. A variety of factors have been identified that reduce habitat quality for some bat species along roadway corridors (Berthinussen and Altringham 2011). These factors include, but are not limited to, noise and visual effects of traffic; chemical transport from roadway use and maintenance; roadside erosion; and introduction of invasive plants (Forman and Alexander 1998). The spatial extent of the effects varies with local topography, traffic volume and speed, road surface material, roadside vegetation type, and animal behavior. Forman and Deblinger (2000) found that the ecological effect area along a studied section of Massachusetts Route 2 was highly irregular. In that study, the affected area averaged just over 300 meters wide on each side of the road; however, sensitive forest-interior bird populations were reduced up to 650 meters from the road. Because this is a new limited access highway, many of the described factors (*e.g.,* noise, visual effects of traffic, air quality changes, increased erosion, chemical transport) are expected to increase substantially, with increased traffic volumes and increased speeds from the baseline condition. In addition, the new roadway slope encroaches to within about 1,100 linear feet of the existing hibernacula known as large mine-cave (Alternatives 1 and 2), and completely obliterates three of the five other hibernacula known as BCM 2005-19, BCM 2005-27, and BCM 2005-28 (Alternatives 3 and 4). Increased roadway activity around these hibernacula (*i.e.*, noise, erosion, visual effects of traffic, invasion of exotic plants) may diminish the quality and usability of these hibernacula for successive generations of Indiana bats, northern long eared bats and tricolored bats.

Project proponents anticipate offsetting suitable forest removal and direct effects to known hibernacula known as the large mine-cave through purchasing it, or establishing a permanent easement of it, to provide perpetual conservation and protection of Indiana bats, northern long-eared bats, and tricolored bats. Should the cave-mine purchase prove unsuccessful, project proponents anticipate purchasing credits from a Service-approved conservation credit banking entity to mitigate for the loss of about 400 acres of suitable forested habitat, and constructing artificial roosts (*i.e.*, BradenBark, bat boxes). While purchasing credits through a conservation bank may offset impacts to suitable forested bat habitat

within the project area, it will not offset impacts to the 5 known hibernacula should these features be compromised by the proposed project.

Reduced connectivity – Landscape connectivity is the degree to which the landscape facilitates animal movement and other ecological flows (Forman *et al*. 2003). The effect of a road acting as a barrier will likely take several wildlife generations to be observed (Forman *et al*. 2003). Many species of bats follow tree-lined travel corridors (sometimes only a single tree in width) to reach foraging habitat, rather than cross wide, open areas. Zurcher *et al.* (2010) found that roads with vehicular traffic have a barrier effect on Indiana bats which were more likely to reverse course rather than cross the road. Bach *et al.* (2004) provided observations that document that bats of several species will travel under bridges to cross roadways.

About 400 acres of suitable forest habitat removal is proposed to construct this roadway and improvements, with additional affected acres in the action area that may remain but may become less suitable, fragmented, or less available. The behavior of the bats in response to the forest clearing and proposed roadway expansion and improvement is difficult to predict. Bats reluctant to cross an open area – but determined to cross – may follow longer travel paths to access foraging and roosting habitat on the opposite side of the project area. Those animals not able or willing to cross the expanded roadway will be forced to use less desirable habitat, which in turn may reduce reproductive vigor and success. Others may shift foraging and roosting areas to avoid crossing the project area, thus increasing local competition with resident bats. There are variable risks to the bats that follow each of the routes that involve increased risk of being hit by traffic or substantially increased travel distance and energy expenditure.

Effects from Lighting – The proposed project will increase permanent lighting in some locations (*i.e.*, the northern and southern interchanges and possibly the bridges). The effect of permanent lighting on bats depends on the context of the lighting (*e.g.,* duration, location, extent, type).

Some bats seem to benefit from artificial lighting, taking advantage of high densities of insects attracted to light. For example, 18 species of bats in Panama frequently foraged around streetlights, including slow-flying edge foragers (Jung and Kalko 2010). However, seven species in the same study were not recorded foraging near streetlights. Bat activity differed among color of lights with higher activity at bluish-white and yellow-white lights than orange. Bat activity at streetlights varied for some species with season and moonlight (Jung and Kalko 2010). There is limited information regarding potential neutral, positive, or negative impacts to northern long-eared bats and tricolored bats from increased light levels. As discussed above, Indiana bats, northern long-eared bats, and tricolored bats may avoid lit areas due to potential increased risk of predation. Lighting effects can be reduced by installing downward facing, full cut-off lens lights, directed away from forest habitat (towards work site). Project proponents have not provided information on new permanent lighting configurations at the interchanges or bridges, and temporary lighting configurations during project construction have not been addressed.

Project Activities and White Nose Syndrome

Project avoidance and minimization measures would likely allow for persistence of the local hibernating populations in the absence of WNS, but the project's effects in conjunction with WNS are much more difficult to predict. If no resistance to WNS develops and recovery efforts cannot stem the decline of northern long-eared bats and tricolored bats, construction and operation of the State Route 6219, Section 050 Project may not accelerate extirpation of the hibernating populations, because additive mortality from the new roadway may be masked by the magnitude of the WNS-related effects on survivorship and fecundity. However, if resistance to WNS develops, or if recovery efforts can mitigate the effects of WNS, we would expect that additive mortality resulting from construction and operation of the new roadway would reduce the potential for survival and growth of the local hibernating populations, unless the mortality rate from road construction and operation is low. At this time, bat fatality rates associated with the existing roadway (U.S. 219) are unknown. We can only postulate that bat fatality rates associated with the new, modified road would be somewhat higher than baseline rates.

CUMULATIVE EFFECTS

Cumulative effects are those "effects of future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area" considered in this biological opinion (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Endangered Species Act. In addition, the collective effects of similar types of projects on Indiana bats, northern long-eared bats, and tricolored bats are not considered "cumulative effects" under the Endangered Species Act, unless those projects are proposed within the identified action area.

The BA indicates that historically, commercial timbering activities have been conducted in the action area. According to the BA of 2006, two wood product companies (Costal Lumber Company and Allegheny Wood Products) were timbering tracts of land near the large mine-cave for many years, using sustainable harvesting practices (select cut). One of these land tracts was sold in 2005. We anticipate that timber harvesting will continue in the area.

The Meyersdale Wind Farm (20 windmills), located at the north end of the proposed action area, was constructed in November 2003, and began commercial operation in December of 2003. In late 2015, this facility was upgraded with battery energy storage. Another upgrade to the older turbines is anticipated to occur in 2024/2025 to extend the life of the wind farm by 30 years, however, towers and foundations will be left in place. Minimal forest disturbance is anticipated. (websites accessed March 5, 2025: https://en.wikipedia.org/wiki/Meyersdale_Wind_Farm; https://wjactv.com/news/local/somerset-countys-twin-ridges-wind-farm-gets-a-200-million-upgrade-for-sustainable-future). Currently, there are no data regarding confirmation of Indiana, northern long-eared, or tricolored bat mortalities at this facility.

The proposed project area lies adjacent to State Game Land 231, and a distance away from Forbes State Forest, and State Game Land 82. In addition, the Savage River State Forest is located in the

north and northeastern part of Garrett County, Maryland, at the southern end of the project. Due to the protected status of the State Game Land and State Forest lands, available locations for future development are limited as they are protected. The likelihood of future development and further impact to forest habitat are limited within these properties.

The potential for cumulative impacts associated with other future State and private development activities are limited. However, we note that MD SHA is planning a 0.79-acre park-and-ride facility along the southern edge of the proposed action area (on the corner of Chestnut Ridge Road and U.S. Route 40 – National Pike Road) on the west side of State Route 219. However, this site does not contain suitable habitat for bats, as it is a maintained herbaceous area with young, planted, trees and ornamental shrubs (FHWA, PennDOT, and MD SHA 2024). This site is unlikely to have an effect on bats or bats habitat, due to the lack of bat habitat.

There are no other known non-Federal, large-scale, reasonably foreseeable land development activities within the general proximity of the State Route 6219, Section 050 Project area that would result in additional losses to protected bat habitat or the take of protected bats. Other projects that could be reasonably certain to occur, and likely have no Federal nexus include commercially and privately harvesting timber; other activities in the general vicinity may include mine reclamation and re-development, smaller scale commercial development, and solar energy facilities.

Construction plans for these development projects are speculative, however, and may only involve clearing relatively small portions of forest habitat in, or directly adjacent to, the action area. Therefore, while we anticipate the future development in the action area is reasonably certain to occur and will be facilitated by the roadway project, we do not have the information available to evaluate the extent of any future non-Federal activities that may also affect northern long-eared bat and tricolored bat. Any future Federal activities would be considered through a separate section 7 process.

CONLUSION

Indiana Bat

In the "Effects Analysis," we evaluated impacts to individual bats and the populations to which they belong. The local, affected Indiana bat population includes those at the known hibernaculum referred to as the large mine-cave. These bats are expected to forage and roost in forests surrounding this feature. We conclude that construction and operation of the project will harm Indiana bats, but that adverse effects will be minimized through seasonal tree cutting restrictions; conducting earthmoving activities during the bats' active season; minimizing impacts to streams at culvert crossings to minimize impacts to water sources; avoiding impacts to wetlands; as well as providing off-site forest habitat protection via purchasing credits from an established Conservation Bank for the benefit of the Indiana bat; or purchasing, or establishing a conservation easement of, the hibernaculum referred to as the large mine-cave. However, the seasonal tree cutting period as proposed allows for cutting from October 1 to November 15 and is, therefore, not protective of bats during the fall swarming period. As such, direct injury or death of Indiana bats may occur at this critical stage in the life cycle. Further, encroachment on the known hibernaculum referred to as the large mine-cave has the potential to negatively alter this feature for bat hibernation.

Mortality from road operation presents a risk over the long-term, as traffic volumes and speed increase over time in the swarming and staging area that supports the large mine-cave hibernation site. Vehicle strikes may reduce the ability of the hibernating population to grow and potentially recover from the effects of WNS. However, if road-related mortality rates are low (*e.g.,* a small number of individuals over many years of road operation), the magnitude of this effect may not appreciably reduce the size of the hibernating population.

During the summer, the proposed project is most likely to affect male and non-reproductive Indiana bats, which tend to occur individually or in small groups. While not detected in recent maternity colony surveys in 2014 and 2022, it is possible that Indiana bat maternity activity may occur in the action at low levels or from recent colonization. Based on the spatial extent of the proposed project, the number of affected individual bats is expected to be low post-WNS. The loss of Indiana bats would affect the population unit(s) to which they belong, namely the hibernating populations at the known hibernaculum at the large mine-cave). We expect that the loss of any Indiana bats effected will reduce the size and resilience of the hibernating population.

Restoration and protection of nearby forested habitat will ensure that suitable habitat continues to be available near the hibernacula referred to as the large mine-cave. The continued availability of foraging and roosting habitat in less developed areas will contribute to the conservation of the local hibernating populations by partially offsetting the effects from the project and potentially reducing the risk of mortality resulting from road operation. With these efforts, the proposed action is not expected to result in mortality at a level that would reasonably be expected to result in a substantial decline of the Indiana bat. After reviewing the current status of the Indiana bat, the environmental baseline for the action area, the effects of the action, and the cumulative effects, the Service has concluded the proposed project is not likely to jeopardize the continued existence of the Indiana bat.

Northern Long-eared Bat

In the "Effects Analysis," we evaluated impacts to individual bats and the populations to which they belong. The local, affected northern long-eared bat population includes the hibernating population at hibernacula known as the large mine-cave, BCM 2005-01, BCM 2005-19, BCM 2005-27, and BCM 2005-28, as these bats are expected to forage and roost in forests surrounding these cave/mines. We concluded that construction and operation of the project would harm northern long-eared bats, but that adverse effects would be minimized through seasonal restricted periods of tree cutting and rock outcropping alteration; conducting earthmoving activities during the bats' active season; minimizing impacts to streams at culvert crossings to minimize impacts to water sources; avoiding impacts to large diverse wetlands to minimize impacts to foraging sources; as well as providing off-site forest habitat protection via purchasing credits from an established Conservation Bank for the benefit of the northern long-eared bat; or purchasing, or establishing a conservation easement of, the hibernaculum referred to as the large mine-cave. However, a seasonal tree cutting period allows for tree cutting between October 1 and November 15, which does not avoid the risk of directly killing or injuring the bats during fall swarming. As such, direct take could occur at this critical stage in the life cycle of the bat. Further, encroachment on the known hibernacula referred to as the large mine-cave, BCM 2005-01,

BCM 2005-19, BCM 2005-27, and BCM 2005-28, have the potential to render these features unsuitable for bat hibernation.

While harm due to habitat loss may occur, it seems less likely that construction will contribute to short-term reductions in fitness or reproductive rates for this generalist species as compared to Indiana bats. M ortality arising from road operation may present a greater risk over the long-term, as traffic volumes increase over time within the swarming and spring staging area associated with the hibernacula referred to as the large mine-cave, BCM 2005-01, BCM 2005-19, BCM 2005-27, and BCM 2005-28. Road-related mortality may reduce the ability of the hibernating population to grow and potentially recover from the effects of WNS. However, if road-related mortality rates are low (*e.g.,* a small number of individuals over many years of road operation), the magnitude of this effect may not appreciably reduce the size of the hibernating population.

The proposed project is more likely to affect male and non-reproductive northern long-eared bats, which tend to occur as solitary individuals in widely dispersed home ranges across the landscape when they return to use forests for fall foraging and roosting. It is possible that northern long- eared bat maternity activity continues or has become reestablished since 2014 in the action area and that reproductive female bats will be harmed. Without being able to accurately predict how many of the bats will be killed or injured due to the permanent presence of the new 8-mile section of roadway, it is not feasible to model the effects of their mortality on these bat populations. However, we expect that the loss of northern long-eared bats will reduce the size and resilience of the hibernating population and any maternity colonies, particularly considering the increased mortality rates resulting from WNS.

Restoration and protection of nearby forest habitat would ensure suitable habitat continues to be available near the hibernacula referred to as the large mine-cave, BCM 2005-01, BCM 2005-19, BCM 2005-27, and BCM 2005-28. The continued availability of foraging and roosting habitat in less developed areas will contribute to the conservation of the local hibernating populations by partially offsetting the effects of the project and potentially reducing the risk of additive mortality due to road operation. With these efforts, the proposed action is not expected to result in mortality at a level that would reasonably be expected to result in a substantial decline of the northern long-eared bat in the action area. After reviewing the current status of the northern long-eared bat, the environmental baseline for the action area, the effects of the action, and the cumulative effects, the Service has concluded the proposed project is not likely to jeopardize the continued existence of the northern long-eared bat.

Tricolored Bat

The local, affected tricolored bat population includes the hibernating population at hibernacula referred to as the Large Mine-Cave, BCM 2005-01, BCM 2005-19, BCM 2005-27, and BCM 2005-28, as these bats are expected to forage and roost in forests surrounding these cave/mines. The tricolored bat has similar life cycles, habitat needs, diet, and behavior as the northern long- eared bat. Therefore, we would expect the State Route 6219, Section 050 Project to have similar effects on this bat species, including disturbance or injury due to construction and operation; habitat loss caused by to the project; direct take during a critical stage in the life cycle and detrimental effects on their presumed hibernacula. A t this time, bat fatality rates associated with the existing road are unknown but are

expected to be somewhat higher than baseline rates because of anticipated increase in vehicle speed and volume.

As with the above species, we expect that the loss of tricolored bats may reduce the size and resilience of the hibernating populations and any maternity colonies already affected by WNS. The Service has concluded that the State Route 6219, Section 050 Project will have adverse effects on the number and distribution of the tricolored bat. However, after reviewing the current status of the tricolored, the environmental baseline for the action area, the effects of the action and the cumulative effects, it is the Service's conference opinion that the State Route 6219, Section 050 Project, as proposed, is not likely to jeopardize this species.

If this proposed endangered species is listed, the conference report can be converted to a biological opinion if requested in writing by FHWA to the extent that discretionary Federal involvement or control over the action has been retained or is authorized by law and if tricolored bat or its designated critical habitat may be affected by pending project actions.

INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of Endangered Species Act, as amended, prohibit the take (harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Take is defined in Section 3 of the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC 1532(19)). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking, provided that such taking complies with the terms and conditions of this incidental take statement.

Because incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity, this Incidental Take Statement is valid only upon receipt by the applicant of all appropriate authorizations and permits from Federal, State, and local permitting authorities. These permits/authorizations may include, but are not limited to, a permit under section 404 of the Clean Water Act from the Corps of Engineers; a section 401 Water Quality Certification and a Chapter 105 Dam Safety and Encroachment Permit from the Pennsylvania Department of Environmental Protection; and approved Erosion and Sedimentation Control Plans from the County Conservation Districts (Somerset County). It is incumbent upon the Service to make it clear to the FHWA and the applicant that the incidental take statement (along with its exemption from the section 9 prohibitions of the Endangered Species Act) is valid only upon receipt of all required permits and authorizations.

The measures described below are non-discretionary and must be undertaken by FHWA so that they become binding conditions of any funding, permits, and/or approvals, as appropriate, issued to

PennDOT for the exemption in section 7(o)(2) to apply. FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If FHWA, 1) fails to require PennDOT and MA SHA to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, authorization, or funding document; and/or 2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, FHWA, PennDOT or MD SHA must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(I)(3)].

AMOUNT OR EXTENT OF TAKE

The Service anticipates that Indiana bats, northern long-eared bats, and tricolored bats will be killed, injured, or harmed because of the construction and operation of the State Route 6219, Section 050 Project. The Service anticipates incidental take of the Indiana bat and northern long-eared bats and death or harm to tricolored bats will be difficult to detect for the following reasons: (1) the individuals are small and occupy forested summer habitats where they are difficult to find; (2) northern long-eared bats and tricolored bats form small, widely dispersed maternity colonies under loose bark or in the cavities of trees or in loose leaf litter; and males and non-reproductive females may roost individually, which makes finding the species or occupied habitats difficult; (3) finding dead or injured specimens during or following project implementation is unlikely; (4) the extent and density of the species within its summer habitat in the action area is unknown; and (5) in many cases incidental take will be non-lethal and undetectable.

Monitoring to determine actual take of individual bats within an expansive area of forested habitat is a complex and arduous task. Unless every individual tree that contains suitable roosting habitat is inspected by a knowledgeable biologist before management activities begin, it would be impossible to know if a roosting Indiana bat, northern long-eared bat, or tricolored bat is present in an area of forested habitat proposed for removal. Inspecting individual trees is not considered by the Service to be a practical survey method and is not recommended to determine incidental take. However, the aerial extent of potential roosting and foraging habitat affected can be used as a surrogate measure to estimate the level of take.

To estimate the number of Indiana bats, northern long-eared bats, and tricolored bats that may be killed or harmed in the State Route 6219, Section 050 Project area, we consider the amount of suitable habitat, home range size, and forested area in the action area. About 400 acres of suitable forest habitat will be removed as a result of project implementation. Individual Indiana bat home ranges are estimated at 400 acres (162 hectares) (EPRI 2018). Individual northern long-eared bat home ranges have been minimally estimated at 148.8-173.7 acres (60.2-70.3 ha) (Owen *et. al*. 2003, Lacki *et. al*. 2009).

This incidental take statement currently authorizes take of Indiana bats and northern long-eared bats, and will in the future for tricolored bats should they be listed, resulting from construction and operation of the State Route 6219, Section 050 Project in accordance with compliance with the reasonable and prudent measures and terms and conditions to minimize, monitor and report such take. Take estimates can be found in Table 4.

Table 4. Incidental Take Estimates for the State Route 6219, Section 050 Project.

Type of Take	Take Anticipated as a Result of	Area Where Take Will Occur	Estimated Take
Harm or Kill	Road construction activities, particularly forest removal, when the bats are present but outside of the proposed tree cutting period that starts November 15 (*i.e.*, between October 1 and November 15).	Forest acres identified as potential roosting habitat - permanent and temporary forest removal.	Up to 400 forest acres of identified potential roosting bat habitat.
Harm	Short-term reduction in body condition and fecundity, potential reduction in survival rate due to permanent loss, degradation and fragmentation of spring staging (roosting) and fall swarming (foraging) habitat, during roadway operation.	The remaining forest acres that bats will shift to, adjacent to the 400 acres of removed habitat.	Up to 400 acres of remaining forests adjacent to work areas where bats are expected to relocate to.
Harm and Kill	If bats are roosting or hibernating in the rocky outcrop during destruction.	The rocky outcrop known as RH2014-03	All bats that are using this rocky outcrop

Type of Take	Take Anticipated as a Result of	Area Where Take Will Occur	Estimated Take
Harm	Energy expenditure from using the altered hibernacula or abandoning these hibernacula in search of other overwintering sites. Internal workings of the hibernacula may be altered due to inner collapse, or changes to airflow, humidity, and temperature caused by construction activities such as the tree cutting for the fill slope.	The large mine-cave, BCM 2005-01, BCM 2005-19, BCM 2005-27, BCM 2005-28	All bats that belong to the hibernation populations of these five hibernacula.
Kill	Post-construction roadway operation – mortality due to vehicle collisions.	Throughout the action area where swarming habitat of the large mine-cave, BCM 2005-01, BCM 2005-19, BCM 2005-27, BCM 2005-28 and roadway operations intersect.	All bats within the swarming area of the known hibernacula (5-mile radius of forested habitat around each hibernaculum) until the establishment of forested vegetation from the planting plan.

Reinitiation of consultation will be triggered if the incidental take from the project exceeds the amount provided in Table 4 above (provided that discretionary Federal involvement or control over the action has been retained or is authorized by law).

REASONABLE AND PRUDENT MEASURES

"Reasonable and prudent measures refer to those actions the [Service] Director considers necessary or appropriate to minimize the impacts of the incidental take on the species." (50 CFR 402.02). "Reasonable and prudent measures, along with the terms and conditions that implement them, cannot alter the basic design, location, scope, duration, or timing of the action, may involve only minor changes, and may include measures implemented inside or outside of the action area that avoid, reduce, or offset the impact of incidental take." (50 CFR 402.14(i)(2)). "Priority should be given to developing reasonable and prudent measures and terms and conditions that avoid or reduce the amount or extent of incidental taking anticipated to occur within the action area. To the extent it is anticipated that the action will cause incidental take that cannot feasibly be avoided or reduced in the action area, the Services may set forth additional reasonable and prudent measures and terms and conditions that serve to minimize the impact of such taking on the species inside or outside the action area." (50 CFR 402.14(i)(3)).

1) The Service believes that all avoidance and minimization measures identified by FHWA, PennDOT, and MD SHA as part of the proposed project are necessary and appropriate to minimize take of Indiana bat, northern long-eared bat and tricolored bat. Because the Service conducted its analysis of the project as described in the BA with these measures, FHWA, PennDOT, MD SHA, and its contractors must be aware of and implement all conservation measures included in this Opinion.

2) Avoid all direct impacts to the hibernacula referred to as BCM 2005-19, BCM 2005-27, BCM 2005-28 to ensure their continued contribution to the conservation and survival of northern long-eared bats and tricolored bats in the proposed project action area. Direct impacts include the removal, destruction, and closure of the hibernacula.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Endangered Species Act, FHWA, PennDOT, and MD SHA must implement the following non-discretionary terms and conditions, to minimize take of the Indiana bat, northern long-eared bat and tricolored bat. Reporting/monitoring requirements also are included.

A. To avoid killing or injuring roosting northern long-eared bats and tricolored bats, all trees shall be cut from November 15 to March 31. This includes tree-cutting necessary for site preparation, road construction, road maintenance, access, laydown and staging areas, and utility relocation.

B. To avoid killing or injuring northern long-eared bats and tricolored bats that may be roosting in buildings or structures, all demolition activities and installation of exclusionary measures shall occur from November 15 to March 31.

    a. If, due to unforeseen circumstances, building or structure demolition is to occur in the active bat season (April 1 to November 15), a Service-approved emergence survey will be completed in accordance with the *Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines, 2024* that supports the conclusion that bats likely are absent: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines

        i. If no bats are detected during the emergence survey, the building or structure may be demolished immediately, or as soon as possible after sunrise on the following day.
            1. If a building or structure is not demolished during the daytime immediately following an emergence survey, then the survey must be repeated.
            2. Immediately after demolishing a building or structure, inspect the demolition materials to ensure that no bats were present, injured, or killed.

3. Contact the Service immediately if bats are discovered during the inspection of the rubble.

ii. If one or more bats are detected during the emergence survey the building or structure should not be demolished.
    1. Cease demolition activities and contact the Service the next working day for further guidance.

C. To avoid harming or disturbing bats that may be using cervices in rocky outcroppings as roosting habitat, all disturbance of rocky bat habitat (*i.e.,* construction activities and associated noise) shall occur from November 15 to March 31.

D. No project-related or project-generated materials, waste, or fill will be deposited in areas that would result in additional forest clearing or sedimentation to any streams in the action area or areas providing habitat to Indiana bats, northern long-eared bats, or tricolored bats.

E. To minimize interruption or alteration of nighttime bat foraging activity and patterns, all temporary lighting concurrent with construction activities shall be directed downward to face the work area.

F. In addition to erosion and sedimentation measures, the project proponents will develop and adhere to a Pollution Prevention and Contingency Plan that details off-site storage of toxic materials, hazardous material handling and disposal (*e.g*., oils, fuels, lubricants, cement and concrete materials, asphalt materials, herbicides, pesticides), contingency plans for unintended catastrophic events, and equipment refueling. This plan should be maintained by PennDOT and be available upon request.

G. Project proponents or their contractors will develop a dust control strategy, reviewable by the Service. The plan will detail how they intend to eliminate or ameliorate the effects of changes in air quality conditions during construction, and control dust. Project proponents or their contractors will adhere to the following document to address dust-control concerns: Strategies and methods for mitigation of increased levels of airborne dust and debris published in Commonwealth of Pennsylvania Department of Transportation Publication 408/2020 Specifications (Pub 408/2020-7). This plan should be maintained by PennDOT and be available upon request.

H. During the bidding process, prospective project contractors will be notified regarding the presence of endangered species in the project area and the special provisions necessary to protect them.
    a. The following language will be included in all construction and demolition contracts awarded for project implementation:

"Endangered species are present in the project area and there is a risk of take (Endangered Species Act section 9 violation) if the Terms and Conditions of the Service's biological opinion are not closely followed."

I. The committed blasting plan will include specific measures to avoid and minimize habitat disturbances as a result of their blasting activities, including components such as: implementing a blasting time-of-day restriction (*i.e*., from 9 am to 4 p.m., etc.); outlining a means to monitor and minimize vibrations that may disturb bats; establish a vibration monitoring program; establish air blasting thresholds; establishing a maximum peak particle velocity (*i.e*., not to exceed two inches per second in the transverse, vertical or longitudinal planes at 40 Hz or greater); when to cease blasting: who to notify of exceedance of thresholds; when to resume blasting; and other components.
    a. Project proponents will submit the blasting plan to the Service for review and concurrence at least 60 days prior to the start of blasting.

J. To track all avoidance and minimization commitments, FHWA, through PennDOT and MD SHA, will develop a system to track the implementation of each measure, the completion date, and results of the mitigation action. The tracking system summary will be provided to the Service quarterly, and available upon request.
    a. FHWA, PennDOT, and MD SHA will provide an Environmental Monitor that has appropriate authority and professional experience to ensure compliance with relevant conservation commitments (particularly regarding areas of tree removal) and other applicable environmental rules and regulations. The Environmental Monitor will monitor and report acreage of forest impacts. An anticipated or actual exceedance of forest impacts is a trigger for re-initiation of consultation.

K. The committed planting plan will be provided to the Service for review and concurrence prior to implementation. The plan will include monitoring of the vegetation's survival and effectiveness at minimizing bat roadway mortality.

L. To partially offset the adverse effects of the project, long-term protection and management must be consistent with Indiana bat and northern long-eared bat management goals. As proposed in the BA, FHWA, PennDOT, and MD SHA will offset the total loss of 400 acres forest losses by:

    a. Purchasing the large mine-cave rights or a perpetual easement on this property for perpetual protection of bats and their habitat to offset impacts to hibernacula and suitable forest habitat. Following construction of the proposed project, project proponents will transfer the property or easement to a land manager (*i.e*., PGC or third party) for perpetual conservation and protection.

    b. If purchase of the large mine-cave is unsuccessful, FHWA, PennDOT, and MD SHA will offset impacts to hibernacula and suitable forest habitat in the form of purchasing

conservation credits from a Service-approved conservation banking entity to compensate for the loss of 400 acres of forested habitat.

i. FHWA, PennDOT, and MD SHA will calculate the compensatory mitigation required to offset adverse impacts to suitable forested habitat,
ii. FHWA, PennDOT, and MD SHA commit to acquire conservation bank credits through a Service approved, accredited Conservation Bank and acquire a signed affidavit detailing the purchase of said credits from the conservation banker in fulfilment of the conservation commitments.
iii. FHWA, PennDOT, and MD SHA will provide the Service with the signed affidavit 90 days prior to commencing construction.

c. FHWA, PennDOT, and MD SHA will provide pre-construction monitoring; two years of construction monitoring; and one-year post-construction monitoring of the large mine-cave opening.
    i. Project proponents or their contractors will develop a monitoring plan and submit it to the Service for review and concurrence at least 90 days prior to commencing construction.

d. Project proponents or their contractors will provide large mine-cave monitoring reports to the Service within 90 days of the completion of pre-construction monitoring, construction monitoring, and post-construction monitoring.

M. Any dead Indiana bats, northern long-eared bats, or tricolored bats found in the action area will be reported to:

a. Sze Wing Yu at the Service's Pennsylvania Field Office at (814) 206-7461, and Trac Huynh, Special Agent, Office of Law Enforcement, 215 Limekiln Rd., Suite 300, New Cumberland, PA 17070; (717) 774-1276 within 48 hours of discovery.

b. Notification must include the date, time, and location of the carcass, and any other pertinent information. Indiana bats, northern long-eared bats, or tricolored bats that are accidentally killed, or that are moribund, are to be preserved in a cold location until properly identified (date of collection, complete scientific and common name, latitude and longitude of collection site, description of collection site). Specimens shall be transferred to the Service or a Service-approved facility.

The implementing terms and conditions are designed to monitor and minimize the impact of incidental take that might otherwise result from the proposed action.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Endangered Species Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid the adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service has identified the following actions that, if undertaken by PennDOT, MD SHA and/or the FHWA, would further the conservation and assist in the recovery of the Indiana bat, northern long-eared bat, and tricolored bat:

1. Work with the Service to develop guidelines or programs to address Indiana bat, northern long-eared bat, and tricolored bat issues associated with roadway projects in Pennsylvania and Maryland.

2. Work with the Service to develop guidelines or programs for reforestation to enhance bat habitat in the State of Pennsylvania (i.e., similar to the Maryland Reforestation Law – where replacement of forest cleared for highway construction must be accomplished on an acre-for-acre, one to one ratio on public lands and within two years or three growing seasons of the completion of the project).

3. Develop and participate in educational and outreach efforts on Indiana bats, northern long-eared bats, and tricolored bats.

4. Develop conservation banking tools; and identify and protect potential sites as an option to protect essential Indiana bat, northern long-eared bat, and tricolored bat foraging, roosting, and hibernation habitats.

5. Work with the Service to develop a regular and consistent bat bridge survey protocols and implement them as part of the customary environmental evaluations for transportation projects.

6. Develop techniques, guidelines, and means (*i.e.,* structures, plantings, vegetated corridors, etc.) for safe bat passage through roadway corridors that bisect bat foraging habitat.

7. Initiate and conduct a study to evaluate the effectiveness and efficacy of bat "replacement" habitat (*i.e.,* "new" rock outcrops, bat specialty-rock habitat piles, bat boxes, and artificial roosts) to assess the success of bat use in human made, fabricated bat habitat structures.

To be kept informed of actions taken to minimize or avoid adverse effects, or to benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations carried out.

REINITIATION NOTICE

This concludes formal consultation on the actions outlined in the information presented with FHWA, PennDOT, and MD SHA's October 28, 2024, request for initiation of formal consultation and is valid until March 26, 2029. As written in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law), and if (1) the amount or extent of incidental take is exceeded; (2) new information reveals the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease, pending reinitiation.

If the tricolored bat is designated as an endangered or threatened species, you may ask the Service to confirm the conference report portion of this document as a biological opinion for this species. The request must be in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned, or in the information used during the conference, the Service will confirm the conference report as the biological opinion on the project and no further section 7 consultation will be necessary.

The incidental take statement provided in this conference report for the tricolored bat does not become effective until the species is listed, and the conference report is adopted as the biological opinion issued through formal consultation. At that time, the project will be reviewed to determine whether any take of the tricolored bat has occurred. Modifications of the opinion and incidental take statement may be appropriate to reflect that take. No take of the tricolored bat may occur between the listing of the species and the adoption of the conference report through formal consultation, or the completion of a subsequent formal consultation.

If you have any questions or concerns regarding this consultation, please contact Sze Wing Yu at 814-206-7461 or szewing_yu@fws.gov.

Sincerely,

JODIE MAMUSCIA

Digitally signed by JODIE MAMUSCIA
Date: 2025.03.26 13:39:47 -04'00'

Jodie Mamuscia
Field Supervisor

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