Appendix L

USFWS Endangered Species Act Consultation Correspondence

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GSA Mid-Atlantic Region

December 23, 2014

Sumalee Hoskin
Ecological Services
U.S. Fish and Wildlife Service
6669 Short Lane
Gloucester, VA 23061

SUBJECT: Initiation of Formal Section 7 Conference for Proposed Foreign Affairs Security Training Center, Nottoway County, Virginia

Dear Ms. Hoskin,

The General Services Administration (GSA) requests initiation of formal section 7 Endangered Species Act (ESA) conference for the construction and operation of the proposed U.S. Department of State (DOS), Bureau of Diplomatic Security (DS) Foreign Affairs Security Training Center (FASTC), Nottoway County, Virginia. The enclosed Biological Assessment (BA) provides a description of the actions being taken and a description of the specific resources that may be affected.

The purpose of the proposed FASTC in Nottoway County is to consolidate existing dispersed hard skills training functions into a single suitable location that can provide hard skills training specifically designed to enable personnel to conduct security operations/activities in high-threat environments abroad. Hard skills training is practical, hands-on training in firearms, explosives, antiterrorism driving techniques, defensive tactics, and security operations in high-threat environments. Such training improves security and life safety for the protection of U.S. personnel operating abroad.

The proposed FASTC would fill a critical need, identified in a 2008 report to the U.S. Congress, for a consolidated training facility. A central facility would improve training efficiency and provide priority access to training venues from which the DS may effectively conduct hard skills training to meet increased demands for well-trained personnel.

As required by section 7 of the ESA, and described further in the U.S. Fish and Wildlife Service's (USFWS's) 2014 *Northern Long-eared Bat Interim Conference and Planning Guidance*, the GSA has considered the potential impacts of the Proposed Action on ESA-listed species and species proposed for listing under the ESA in drafting the BA and we have determined:

1. The Proposed Action will have no effect on the ESA-listed endangered Michaux's sumac (*Rhus michauxii*), Roanoke logperch (*Percina rex)*, and dwarf wedgemussel (*Alasmidonta heterodon*). As such, these species are excluded from analysis within the BA.
2. The Proposed Action "may affect, is likely to adversely affect" the northern long-eared bat *(Myotis septentrionalis)* (NLEB), which was proposed for ESA-listing as endangered in October 2013.

U.S. General Services Administration
20 N. 8th Street
Philadelphia, PA 19107-3191
www.gsa.gov

In conclusion, the GSA requests initiation of formal conference under section 7 of the ESA for the NLEB.

We would appreciate being apprised of your proposed schedule for completing formal conferencing regarding the NLEB. We also request a copy of your Draft Conference Opinion for our review.

Thank you for your assistance. Please contact me at myles.vaughan@gsa.gov or 215-756-5948 if you require additional information.

Sincerely,

Myles Vaughan
NEPA Program Manager
Urban Development/Good Neighbor Program Representative
GSA Mid-Atlantic Region

Enclosure: Final Biological Assessment of Potential Effects on Species under the Jurisdiction of the U.S. Fish and Wildlife Service from Construction and Operation of a Proposed U.S. Department of State, Bureau of Diplomatic Security Foreign Affairs Security Training Center, Nottoway County, Virginia

Biological Assessment
Potential Effects on Species under the Jurisdiction of the U.S. Fish and Wildlife Service from Construction and Operation of a Proposed U.S. Department of State, Bureau of Diplomatic Security Foreign Affairs Security Training Center Nottoway County, Virginia

***Prepared for*:**
U.S. General Services Administration
Philadelphia, PA

December 23, 2014

Acronyms and Abbreviations

ACUB	Army Compatible Use Buffer
ARRA	American Recovery and Reinvestment Act
BA	Biological Assessment
CDNL	C-weighted day-night average sound level
CFR	Code of Federal Regulations
dB	decibel(s)
dBA	A-weighted decibel(s)
DNL	day-night average sound level
DOS	U.S. Department of State
DS	Bureau of Diplomatic Security
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FASTC	Foreign Affairs Security Training Center
ft	foot/feet
GSA	General Services Administration
Hz	hertz
LRA	Local Redevelopment Authority
m	meter(s)
NEPA	National Environmental Policy Act
NEW	net explosive weight
NLEB	northern long-eared bat
Pk15(met)	peak noise level
Pkg	Package
sf	square foot/feet
U.S.	United States
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAPHC	U.S. Army Public Health Command
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
VaARNG	Virginia Army National Guard
VDCR	Virginia Department of Conservation
VDGIF	Virginia Department of Game and Inland Fisheries and Recreation
WNS	White-nose Syndrome

Biological Assessment
Potential Effects on Species under the Jurisdiction of the U.S. Fish and Wildlife Service from Construction and Operation of a Proposed U.S. Department of State, Bureau of Diplomatic Security Foreign Affairs Security Training Center, Nottoway County, Virginia

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EXECUTIVE SUMMARY

Section 7(a)(2) of the Endangered Species Act (ESA) requires Federal agencies to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. Analysis of potential impacts was based on review of plans for the Proposed Action and the available current and historical distributional data for each species. This Biological Assessment (BA) has been prepared to analyze the potential impacts on ESA-listed threatened and endangered species and species proposed for listing under the ESA under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) from General Services Administration (GSA) actions associated with the proposed U.S. Department of State, Bureau of Diplomatic Security Foreign Affairs Security Training Center project at Fort Pickett, Virginia. Based on the evaluation presented in this BA, Table ES-1 presents GSA's determination of effects on ESA-listed and proposed species from implementation of the Proposed Action.

Table ES-1. Summary of Findings for ESA-listed and Proposed Species under Jurisdiction of the USFWS

Common Name (Scientific Name)	*Status*	*Effects Determination*
Michaux's sumac (*Rhus michauxii)*	Endangered	No effect
Dwarf wedgemussel (*Alasmidonta heterodon)*	Endangered	No effect
Roanoke logperch (*Percina rex)*	Endangered	No effect
Northern long-eared bat (*Myotis septentrionalis)*	Proposed Endangered	May affect, is likely to adversely affect; will not result in jeopardy.

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1.0 INTRODUCTION

In accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 United States [U.S.] Code [USC] 1531 et seq.), this Biological Assessment (BA) has been prepared to analyze the potential impacts on ESA-listed and proposed species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) from General Services Administration (GSA) actions associated with the proposed U.S. Department of State (DOS), Bureau of Diplomatic Security (DS) Foreign Affairs Security Training Center (FASTC) project at the Virginia Army National Guard (VaARNG) Maneuver Training Center, Fort Pickett (Fort Pickett) and a Nottoway County Local Redevelopment Authority (LRA) area in Nottoway County, Virginia. The location for the proposed FASTC is in south central Virginia, near the town of Blackstone in Nottoway County, approximately 60 miles southwest of Richmond and 40 miles west of Petersburg (Figure 1-1).

A Supplemental Draft Environmental Impact Statement (EIS) is also being prepared by GSA in accordance with the National Environmental Policy Act (NEPA) (42 USC 4321, as amended) and Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (Title 40 Code of Federal Regulations [CFR] 1500–1508).

The FASTC would be developed on three adjacent land parcels: Fort Pickett Parcel 21/20 and Grid Parcel (approximately 549 acres and 74 acres, respectively), and Nottoway County LRA Parcel 9 (approximately 727 acres). A tank trail would be relocated on 12 acres between Parcel 21/20 and Dearing Avenue. The Proposed Action also involves the scheduled use of an outdoor firing range at Fort Pickett Range 8. The proposed site allows DOS to take advantage of training synergies at Fort Pickett by sharing several complementary ARNG facilities and being contained within surrounding compatible land uses. A detailed summary of the Proposed Action is presented in Chapter 2.

This BA is intended to support conferencing between GSA and the USFWS as required by 50 CFR 402.14(c) and section 7 of the ESA regarding the likelihood of an adverse effect ("take") of any proposed species with implementation of the Proposed Action.

1.1 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed FASTC in Nottoway County is to consolidate existing dispersed hard skills training functions into a single suitable location that can provide hard skills training specifically designed to enable personnel to conduct security operations/activities in high threat environments abroad. Hard skills training is practical, hands-on training in firearms, explosives, antiterrorism driving techniques, defensive tactics, and security operations in high-threat environments. Such training improves security and life safety for the protection of U.S. personnel operating abroad.

The proposed FASTC would fill a critical need, identified in a 2008 report to the U.S. Congress, for a consolidated training facility. A central facility would improve training efficiency and provide priority access to training venues from which DS may effectively conduct hard skills training to meet increased demands for well-trained personnel.

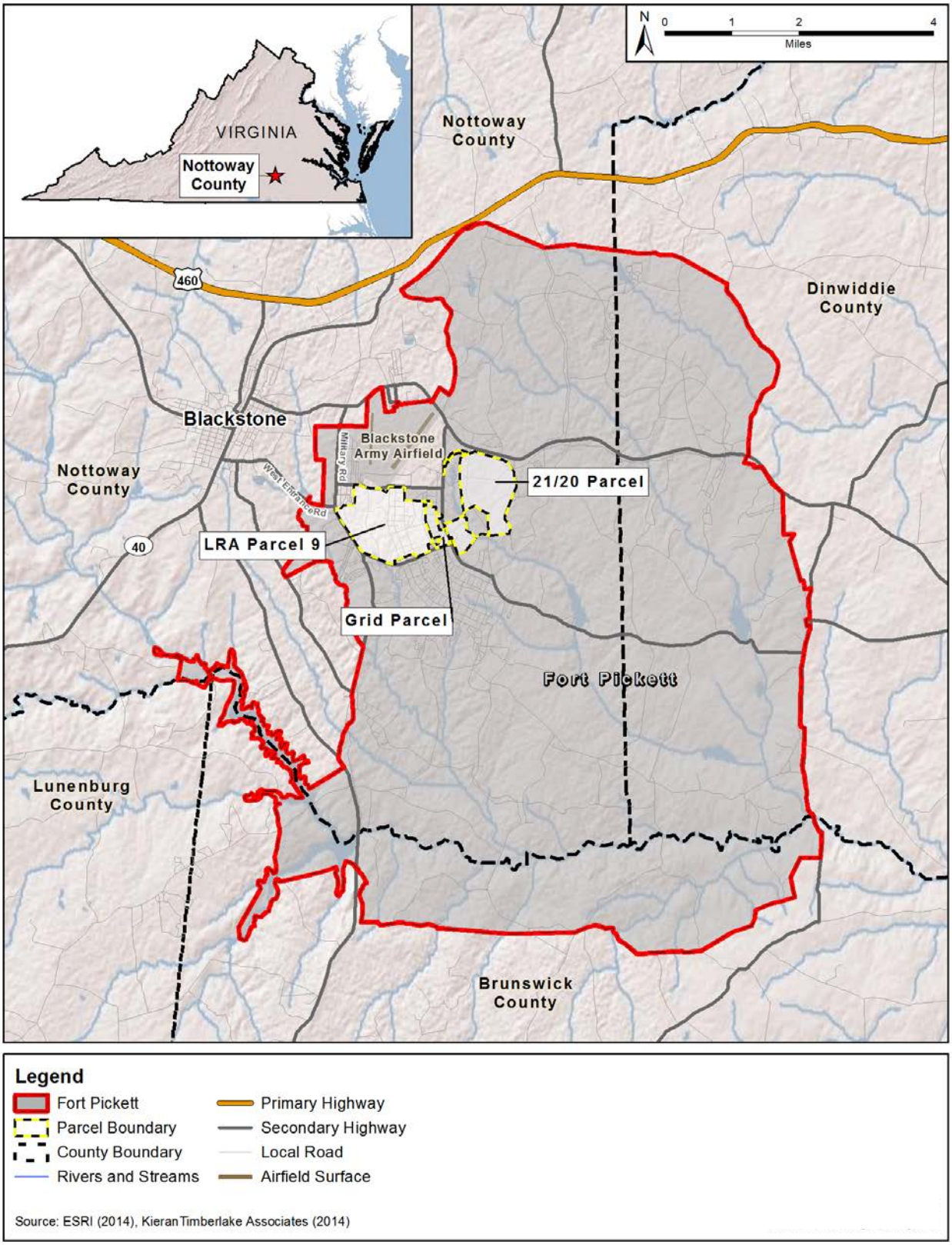

Figure 1-1. Regional Location of Proposed FASTC

Currently, DS hard skills training functions are conducted in approximately 11 separate leased and contracted training facilities dispersed around the country. The fact that the existing training facilities are geographically separated creates difficulties in managing and coordinating activities. Because the existing training facilities are located in leased space or contracted facilities, and frequently do not support training at a level required by DS, the lack of a dedicated training facility results in scheduling inefficiencies, increased costs, and decreased productivity. Additionally, DS training courses often need to be postponed or canceled at the existing training facilities as they must compete for time and space with other federal agencies' activities, including training requirements of the military. In addition, there are very few commercially available training centers to accommodate the specialized training needs of DS. Consolidation into a central, dedicated DOS facility would eliminate these current challenges and also meet the directives of a June 2010 Presidential Memorandum, *Disposing of Unneeded Federal Real Estate* (http://www.whitehouse.gov/the-press-office/presidential-memorandum-disposing-unneeded-federal-real-estate), which directs the U.S. government to eliminate lease arrangements that are not cost effective and to pursue consolidation of operations.

With continued conflict throughout the world, demand for well-trained security personnel has increased substantially over the last decade. The demand for well-trained personnel is especially acute for high threat/critical countries in various regions of the world. Furthermore, DOS foresees an increase to the number of high threat/critical countries; thus, the need for additional highly-trained personnel in the future is of vital importance for embassy protection. Volatile security environments require that DOS expand its preparatory training to include non-security professionals who are assigned to conduct the nation's business in high-risk locales around the world. Annually, 6,500 personnel will attend the Foreign Affairs Counter Threat course which provides non-security professionals from multiple agencies introductory level, hands-on training to better prepare them to deal with high threat environments abroad.

The consolidated center would provide training for a diverse student population including foreign affairs staff, DS special agents, Foreign Service officers, and select foreign law enforcement personnel. The proposed FASTC would provide training for 8,000–10,000 students per year.

To accommodate these facilities, a large area of developable land is needed to provide sufficient space for the construction and operation of the proposed FASTC. DOS determined that ownership of, or access to, a minimum of 1,500 acres would be required to accommodate programmatic needs, as established in the December 2010 FASTC Program of Requirements and 2014 POR update, and to establish appropriate safety buffers and security perimeters. Programmatic needs include functional space, organizational adjacencies, proximity requirements, facility security, and staff support to meet the training mission. In addition to acquiring a property large enough to accommodate the full complement of required training elements, DOS also requires proximity to Washington, DC, specifically a site within a 4-hour drive and 220 miles of DS headquarters in Arlington, Virginia.

The proposed FASTC design must meet all DOS programmatic needs and must also be vetted through GSA's Design Excellence Program. The guiding principles of Design Excellence are to produce facilities that reflect the dignity, enterprise, vigor, and stability of the federal government; embody the finest contemporary architectural thought; and avoid an official style. Its objectives, in respect to the FASTC project, are to produce build alternatives that:

- provide best value to DOS and the American taxpayer;
- develop safe, productive, and attractive work places, and ensure efficient and effective project delivery – on time and on budget;
- involve distinguished private-sector professionals as voices in the selection of designers and the critique of projects through concept development; and
- ensure projects respond positively to national urban and environmental policies.

In addition to GSA design excellence, and in concert with design criteria for facilities, DOS developed the following six guiding principles for the Master Plan Update:

1. As quickly as possible, establish operational presence in the form of hard skills training at Fort Pickett.
2. FASTC development should facilitate the maximum utilization of available American Recovery and Reinvestment Act (ARRA) funding prior to the projected expiration date of September 30, 2015.
3. FASTC development should support the transfer of complete courses, facilitating the reduction of the training footprint at existing leased facilities.
4. FASTC initial construction should focus upon those venues that enable DS-specific training that supports DS's unique mission of conducting security operations in high-threat environments abroad while simultaneously building toward principle 5.
5. FASTC, in its first year of operation (fiscal year 2018), must be capable of supporting limited Foreign Affairs Counter Threat training.
6. FASTC would be developed using "function over form" design principles. Any and all types of new construction, temporary structures, structure repurposing, etc. would be considered if they meet operational and technical requirements, while maximizing available funds.

1.2 FASTC SUPPLEMENTAL DRAFT EIS

GSA is preparing a supplement to the October 2012 *Draft Environmental Impact Statement for U.S. Department of State Foreign Affairs Security Training Center, Nottoway County, Virginia*. The 2012 Draft EIS analyzed the environmental consequences of two alternatives for acquiring land and developing a FASTC in Nottoway County, Virginia. The location of the proposed FASTC evaluated in the 2012 Draft EIS is within Fort Pickett, Virginia (Figure 1-1). In April 2014, the earlier DOS selection of the proposed site for FASTC at Fort Pickett was reaffirmed. Planning for the site resumed based on a reduced scope of requirements compared with the 2012 plan. The Record of Decision for the FASTC Supplemental EIS is expected in late May 2015. Based on adjustments made to the proposed FASTC scope of requirements, a Master Plan Update was prepared in 2014 that modified the previous alternatives evaluated in the 2012 Draft EIS. The Master Plan Update reduces the previous project development site from four parcels to three parcels: VaARNG Parcels 21/20 and Grid, and Nottoway County LRA Parcel 9 (Figure 1-2). The use of Parcel 21/20 and the Grid Parcel would be authorized by a Land Use Permit with the Department of the Army that would be supplemented with a Memorandum of Agreement with the VaARNG for use of facilities to be shared with the VaARNG. LRA Parcel 9 would be purchased from Nottoway County.

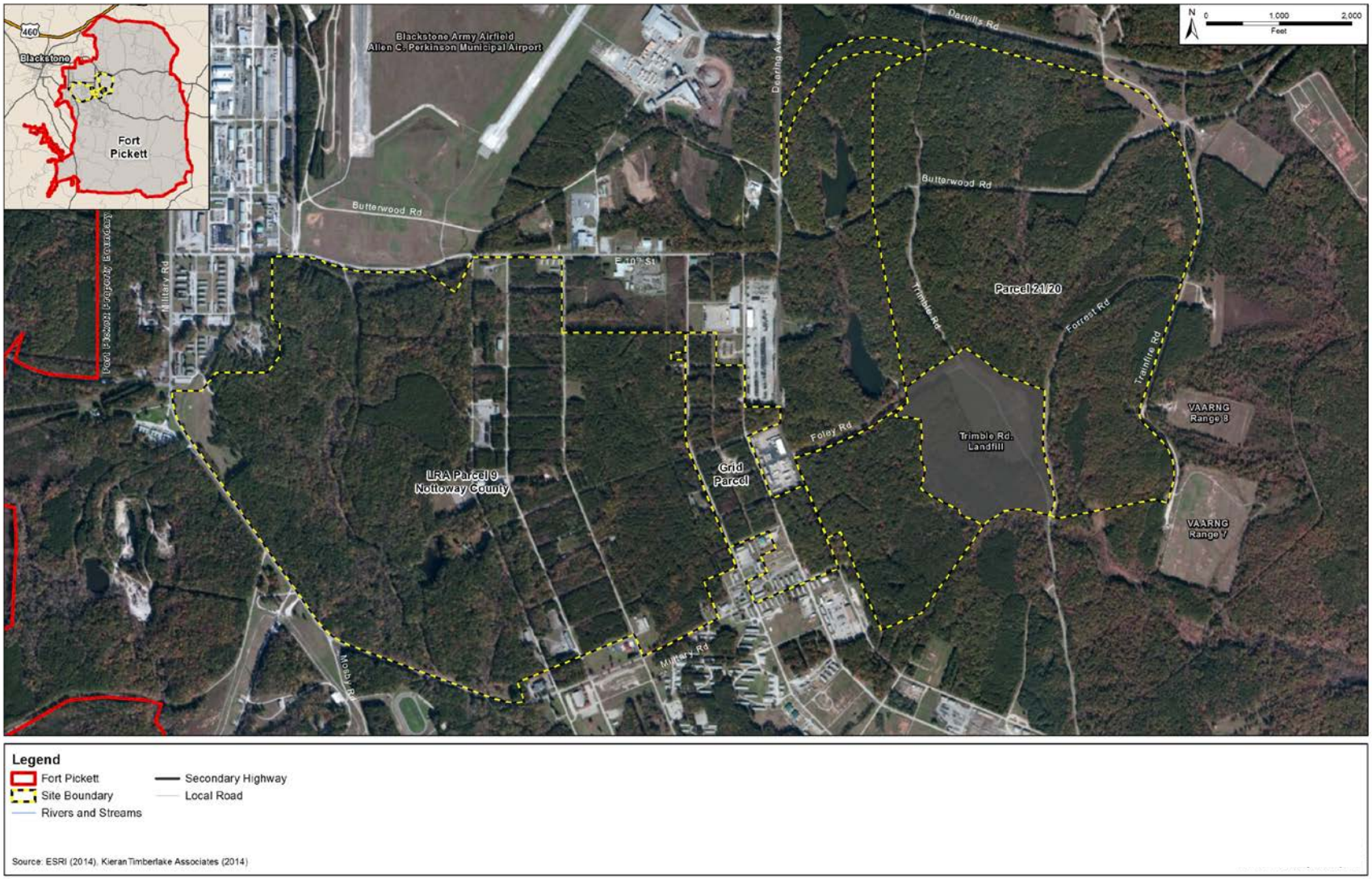

Figure 1-2. FASTC Preferred Alternative Project Site Parcels

The project will now proceed as a hard skills only facility, including driving tracks, firing ranges, mock urban environment, explosives ranges, and associated classrooms and administrative functions. Soft skills training and life support functions, such as dormitories and dining facilities, have been eliminated from the program, and several hard skills training venues have been consolidated. Each of the components proposed for FASTC are integral to the overall training of students, including highly specialized programs to instruct students in the skills required for their assignments at overseas embassies. Classified and unclassified instructional components would comprise the training programs. Hard skills training would take place in classrooms, ranges, tracks, and other tactical venues. FASTC would be staffed, managed, and maintained by a total of 339 employees.

After completion of construction, the FASTC would be a consolidated tactical training center for a rotating annual student population of 8,000–10,000. Normal operating hours would be 7:30 a.m. to 5:00 p.m., Monday through Friday, 50 weeks a year. However, should operational needs so require, FASTC would have the capability to operate 24 hours a day, 7 days a week, year round. An average of 600 students would be on-site on an average training day. Training would range from 5 days to 6 months in length, with an average student stay of 14 days. The proposed FASTC facilities are grouped into eight areas (described in Chapter 2) in which the primary hard skills training and associated support activities would occur.

1.3 Scope and Content of the BA

Various USFWS recovery plans and reports were reviewed for species life histories, known distributions, and actions necessary for recovery. In addition, regional and local species information provided by the Virginia Ecological Services Field Office of the USFWS during the development of the 2012 FASTC Draft EIS was validated in November 2014 and has not changed. New information has been incorporated into this document to address the northern long-eared bat *(Myotis septentrionalis)* (NLEB), which was proposed for ESA-listing as endangered in October 2013 (USFWS 2013b).

1.3.1 Species Addressed in this BA

1.3.1.1 ESA-Listed Species and Species Proposed for Listing

"Listed species" are defined as those plant and animal species currently listed by the USFWS under the ESA as threatened, endangered, or proposed as such. The list of ESA-listed species to be addressed in this BA was based on:

- An official, site-specific species list was obtained from the USFWS using the Information, Planning and Conservation System;
- Subsequent validation (December 2014) of information contained in the 2012 USFWS correspondence;
- The October 2, 2013 Federal Register notice announcing the proposed listing of the NLEB as an endangered species under the ESA (USFWS 2013b).

Based on this review, three ESA-listed species and one species proposed for listing may potentially occur within Nottoway County (USFWS 2012a) (Table 1-1).

Table 1-1. ESA-listed and Proposed Species Potentially Occurring in Nottoway County, Virginia

Common Name (*Scientific Name*)	Status*
Michaux's sumac (*Rhus michauxii)*	Endangered
Dwarf wedgemussel (*Alasmidonta heterodon)*	Endangered
Roanoke logperch (*Percina rex)*	Endangered
Northern long-eared bat (*Myotis septentrionalis)*	Proposed Endangered

1.3.1.2 Candidate Species

Candidate species are plants or animals for which USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Although candidate species need not be addressed in a BA in accordance with ESA, the USFWS Virginia Ecological Services Field Office requested that candidate species be addressed. There are currently no candidate species listed for Nottoway County.

1.3.1.3 Species Eliminated from Detailed Analysis

Informal consultation with the USFWS for the 2012 Draft FASTC EIS was conducted in accordance with section 7 of the ESA. The USFWS concurred with GSA's "no effect" determination with regards to Michaux's sumac, Roanoke logperch, and dwarf wedgemussel. As the Proposed Action addressed in this BA has not significantly changed from the 2012 Draft EIS, the effects determinations for Michaux's sumac, Roanoke logperch, and dwarf wedgemussel remain the same. Therefore, these three species are not addressed further in this BA.

1.3.2 Critical Habitat

Critical habitat is defined in section 3 of the ESA as, "…(i) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species." Conservation describes the use of all methods and procedures necessary to remove an endangered or a threatened species from listing under the ESA. There is currently no designated critical habitat within the action area.

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2.0 PROPOSED ACTION AND CONSERVATION MEASURES

2.1 PROPOSED ACTION

The Proposed Action is the acquisition of land and the construction and operation of a consolidated FASTC in Nottoway County, Virginia. The Proposed Action would consolidate hard skills tactical training functions currently taking place at various leased and contracted facilities at one location. In summary, the Proposed Action includes the following: hard skills training (i.e., driving tracks, training within a mock urban environment, indoor/outdoor firearms training, weapons/explosives training, simulation, classrooms, and physical fitness); administrative offices; emergency response; Federal facility design, construction, and security standards; and certification through the Leadership in Energy and Environmental Design Program.

2.1.1 Construction and Operational Activities

The names, uses, and sizes of the proposed FASTC facilities are shown in Figures 2-1 and 2-2, described in detail below, and summarized in Table 2-1 at the conclusion of this section. Utilities would be installed within the area proposed for disturbance by facility development.

2.1.1.1 Core Area

The Core Area would be the point of arrival and orientation, the functional and social center, and the setting that establishes the identity of FASTC. The Core Area would function as the center of activity for students and staff and would be where most of the administrative spaces would be located. The Core Area would include the following facilities along with a surface parking area.

- *A01 Administrative and Classroom Building* – the central gateway building to FASTC for first-time visitors and the hub of activity, with staff offices, primary badging functions for new students, training spaces, classrooms, and a café.
- *A08 Fitness Center* – indoor fitness facilities related to various training programs.
- *T01 Tactical Training Building* – offices, classrooms, and other functional spaces related to tactical training programs of FASTC. Other support spaces within this facility include range control, emergency medical response technicians, six 30-seat standard classrooms, two mat rooms, weapons cleaning room, equipment work area, and a laundry room.

2.1.1.2 High Speed Driving Track Area

The High Speed Driving Track Area would be used for driver training in various conditions including normal driving, emergency driving, and flooded conditions. Training would consist of 810 drive track operations per day with cars traveling up to 100 miles per hour and would include the following facilities along with associated surface parking:

- *D02 High Speed Anti-Terrorism Driving Course* – 550-acre facility consisting of three separate tracks, two lanes wide, ranging in length from 1.6 to 2 miles long. The tracks would be closed loops with a variety of turns and elevation changes to replicate different driving conditions. The course would include skid pads and ram pads.

D02a, b, c Classroom Buildings – Each of the three High Speed Driving Tracks would include a 30-person classroom building, support facilities, and a 15-space parking area for staff. Classrooms would be located close to the tracks and include covered bleacher seating.

Figure 2-1. Proposed FASTC Facilities Map

1 A01 Administrave Office and Classroom Building
2 A08 Fitness Center
3 A09/I01 Central Warehouse and Public Works Building
4 D02-1 High Speed Driving Track
5 D02-2 High Speed Driving Track
6 D02-3 High Speed Driving Track
7 D02a High-Speed Driving Track Classroom Building
8 D02b High-Speed Driving Track Classroom Building
9 D02c High-Speed Driving Track Classroom Building
10 D03 Mock Urban Driving Track
11 D04 Unimproved Road Driving Course
12 D05 Off-Road Driving Course
13 D03a/D04a/D05a Driving Course Combined Classroom
14 D06 Vehicle Maintenance Shop
15 D06a Parking Garage
16 E02 Explosives Demonstration Range
17 E02a Explosives Demonstration Range Classroom Building
18 E03 Post-Blast Training Range
19 E03a Post-Blast Training Classroom
20 E04 Explosives Simulation Alley for IED Recognition
21 E04b Explosives Simulation Alley Building Structures
22 E04a Explosives Simulation Alley Classroom Building
23 E04c Technical Workshop
24 E05 Explosives Breaching Range
25 E05a Explosives Breaching Classroom
26 E05e Explosives Breaching Range Storage Building
27 R02/R04 25m Indoor/ 100m Outdoor Firing Range
28 R03b Live-Fire Shoot House
29 R03c/R05a/R07 Armory and Classroom Building
30 T01 Tactical Training Building
31 T02 Mock-Urban Tactical Training Area (MOUT)
32 T03 Rappel Tower
33 T04 Tactical Maze
34 T05 Smoke House

Illustrative Site Plan, 2014 - Buildings and Venues

Figure 2-2. Proposed FASTC Facilities Key

2.1.1.3 Off-Road/Unimproved Driving Track Area

The off-road/unimproved driving tracks would be used for training drivers in off-road and unimproved road conditions. Driver training would consist of 24 operations per day plus 8 operations during the nighttime hours (10 pm to 7 am). The Off-Road/Unimproved Driving Track Area would consist of unpaved tracks through forested areas and classroom buildings, including:

- *D04 Unimproved Road Driving Course* – 100-acre site containing several independent courses varying in length from 0.25 to 3 miles. The course would have roads with differing surface types and contain elevation changes.
- *D05 Off-Road Driving Course* – 100-acre site including a non-road area, which incorporates natural features such as rock piles, outcroppings, log crossings, water crossings, drop offs, and steep grades.
- *D03a/D04a/D05a Combined Driver Courses Classroom Building* – two 30-person classrooms and support facility would serve the Unimproved Road Driving Course, Off-Road Driving Course, and the Mock Urban Driving Course. Covered bleacher seating would be located in the vicinity of the classroom.

2.1.1.4 Mock Urban Training Environment

The Mock Urban Training Environment area would consist of three distinct, but interrelated, simulated urban training environments that would provide scenarios for students training for protecting humans transitioning between vehicles and buildings in a setting similar to a typical high-density urban environment. The three areas – Mock Urban Driving Course, Explosives Simulation Alley, and Mock Urban Tactical Training Area, which also includes the T03 Rappel Tower, T04 Tactical Maze, and T05 Smoke House – would be designed to function separately or together for maximum flexibility with the courses.

- *D03 Mock Urban Driving Course* – tactical driving course that would simulate driving in an urban area. Training would consist of 36 driving operations per day. The track would have intersections, dead ends, merges, street signs, lights, buildings, and moveable barriers.
- *E04/E04a, b, c Explosives Simulation Alley, Classroom, and Workshop* – 20-acre facility, 1.5 miles long, that would contain urban and rural environments for scenarios in training for recognition of improvised explosive devices (IEDs). Personnel would use pyrotechnic charges and non-fragmenting high explosive charges up to 0.25 pound net explosive weight (NEW) and would include 24 driving operations per day. Buildings and a technical workshop would be included. In addition to these buildings, a 30-person classroom building would be located near the simulation alley.
- *T02 Mock Urban Tactical Training Area and Mock Embassy* – a compound of buildings that would be modeled on the U.S. Army's Military Operations on Urban Terrain (MOUT) facilities. Buildings would model banks, restaurants, theaters, and residences. Driver training would include 36 operations per day. The Mock Embassy compound would consist of eight buildings resembling a standard U.S. embassy, surrounded by a wall, and would be positioned adjacent to all other training venues of the Mock Urban Training Environment.
- *T03 Rappel Tower* – four-story rappel tower, positioned near the Mock Urban Tactical Training Area, that would provide climbing and rescue training on a multistory tower containing an

assortment of stairs, ladders, balconies, railings, floor openings, and rooftop rope descent. Each floor would be approximately 8 feet (ft) high.

- *T04 Tactical Maze* – two-story facility that would be located near the rappel tower housing engagement rooms, narrow and wide hallways with false walls, video and recording stations in each room, 'simunitions' (i.e., non-lethal weapons) training, and doors for mechanical and shotgun breaching (i.e., the use of a shotgun to force entry).
- *T05 Smoke House* – three-story, fabricated building that would be located near the rappel tower and configured as a training facility specifically fabricated and configured for training non-firefighting personnel on procedures for safe escape and evacuation of a building, as well as limited entry, search, and rescue training for law enforcement and rescue personnel. Students will practice different exercises to gain confidence in the methods of escapement from a burning building. The facility would not be used for actual firefighter training.

2.1.1.5 Explosives Training Environment

The Explosives Training Environment would consist of an Explosives Demonstration Range, Post-Blast Training Range, and Explosives Breaching Range. At the explosives ranges, students would be shown high explosives demonstrations and practice breaching techniques (i.e., the use of explosives to force entry). Explosives detonations would consist of 2,783 0.2-ounce to 1.5-pound NEW charges, 36 detonations of 2.23-pound NEW charges, and 18 detonations of 3-pound NEW charges per year.

- *E02 Explosives Demonstration Range* – 100-acre open range used to detonate a maximum charge of 0.5-pound NEW explosive charges. The demonstration site would contain two pads, a 200-ft X 200-ft blast pad with a sifted sand base, and a 100-ft diameter post-blast recovery pad. The range would have a viewing area for 30 people with overhead protection and Plexiglas windows.
- *E02a Explosives Demonstration Range Classroom Building* – training building that would serve the Explosives Demonstration Range with a 30-person classroom and support facility. It would contain an explosives viewing area with overhead and frontal protection and a 36-space parking area.
- *E03 Post-Blast Training Range* – 200-acre open range able to support the detonation of a maximum charge of 3 pounds NEW. The site would contain a 400-ft X 400-ft explosives demonstration pad with a sifted sand base and a 6-inch asphalt post-blast recovery pad. The range would have a viewing area for 30 people with overhead protection and Plexiglas windows. In addition, the range would have bleacher seating for 30 people positioned 1,500 ft from the asphalt pad and surface parking.
- *E03a Classroom Building* – 30-person classroom would serve the Post-Blast Training Range with additional support space, a covered viewing area with overhead and frontal protection, and a 10-space parking area.
- *E05 Explosives Breaching Range* – an open range capable of supporting explosive charges of up to 3-pound NEW that would provide training for breaching and hostage recovery. The range would have spiral perimeter berms on four sides, which would be designed to overlap for explosives containment.
- *E05a Explosive Breaching Classroom* – 30-person classroom building that would have covered bleacher seating, and a 10-space surface parking area.
- *E05b Breaching House* – two-story prefabricated building roughly 40 ft X 40 ft capable of detonations of 0.25- to 0.5-pound NEW. The Breaching House and walls would be contained

within a spiral earthen berm for explosives containment. The berm would be designed and constructed to intercept the explosive fragments.

- *E05c Breaching Wall 1* – 30-ft long, 8-ft high wall with four upright steel beams and three removable concrete wall panels. The wall would be designed for charges of up to 3-pound NEW.
- *E05d Breaching Wall 2* – 60-ft long, 8-ft high wall with seven upright steel beams and three removable concrete wall panels. The wall would be designed for charges of up to 3-pound NEW.
- *E05e Breaching Storage* – 30-ft X 30-ft storage building that would be used to house a front-end loader, replacement wall, and construction material.

2.1.1.6 Firearms Training Environment

Students would train in the Firearms Training Environment in the use of firearms including pistols, rifles, machine guns, and shot guns. Firing range buildings would be designed to ensure acceptable noise levels in adjacent areas inside and outside of the buildings. The Firearms Training Environment would include the following facilities along with a 68-space surface parking area.

- *R02/R04 Combined 25-meter (m) Baffled Indoor/100-m Outdoor Firing Range* – three 25-m indoor ranges with 15 firing points each and two 100-m outdoor firing ranges with 15 and 30 firing points. The combined range would also contain five 30-person classrooms and support facilities. The proposed footprint of the venue was substantially reduced from the 2012 plan and would be situated within the topography to reduce grading, clearing, and wetland impacts.
- *R03b Live Fire Shoot House* – two-story building simulating residential and commercial spaces designed for live shooting with ballistic protection on the walls to prevent penetration of projectiles.
- *R03c Classroom/R05a Classroom/R07 Armory* – combined armory and classroom building that would also serve as the firearms distribution point for the Combined 25-m Indoor/100-m Outdoor Firing Range and Live Fire Shoot House. The building would also have a weapon cleaning room, two 30-person classrooms, and a loading dock.

2.1.1.7 Service Area

The Service Area would consist of support facilities for centralized delivery, storage, and maintenance needs related to FASTC. The Service Area (A09 Central Warehouse/I01 Public Works) would consist of a building, parking area, and collocated service facilities within a centralized location for delivery, storage, and maintenance. The warehouse would provide general access-controlled storage, and the public works portion of the building would house all building and facility maintenance personnel.

2.1.1.8 Driver Training Maintenance Area

The Driver Training Maintenance Area would provide centralized vehicle storage and maintenance facilities supporting all of the driver training activities for FASTC. The area would include the following two venues and parking areas.

- *D06 Vehicle Maintenance Shop* – a shop and garage with facilities for delivery vehicles.
- *D06a Parking Garage* – two-story parking deck structure that would provide both covered and uncovered parking for 400 cars, trucks, and armored vehicles.

2.1.1.9 Summary of Proposed Facilities

Table 2-1 summarizes the size of the proposed FASTC facilities. Total building size requirements based on the 2014 FASTC Master Plan Update are approximately 707,000 square feet (sf).

Table 2-1. Proposed FASTC Venues

FACILITY	NAME	USE	SIZE
Core Area			
A01	Administrative and Classroom Building	Offices and Classrooms	82,009 sf
A08	Fitness Center	Fitness Training	13,930 sf
T01	Tactical Training Building	Tactical Training	26,458 sf
High Speed Driving Track Area			
D02	High Speed Anti-Terrorism Driving Course	Driving Training	550 acres*
D02a	Classroom Building (track 1)	Driving Training	3,106 sf
D02b	Classroom Building (track 2)	Driving Training	3,106 sf
D02c	Classroom Building (track 3)	Driving Training	3,106 sf
Off-Road/Unimproved Driving Track Area			
D04	Unimproved Road Driving Course	Driving Training	100 acres*
D05	Off-Road Driving Course	Driving Training	100 acres*
D03a/D04a/D05a	Driver Courses Classroom Buildings	Driving Training	4,851 sf
Mock Urban Training Environment			
D03	Mock Urban Driving Course	Driving Training	80 acres*
E04	Explosives Simulation Alley	Explosives Training	20 acres*
E04a	Explosives Simulation Alley Classroom Building	Explosives Training	3,106 sf
E04b	Explosives Simulation Alley Structures	Explosives Training	35,000 sf
E04c	Explosives Simulation Workshop	Explosives Training	500 sf
T02	Mock Urban Tactical Training Area/Embassy	Tactical Training	80,792 sf
T03	Rappel Tower in Mock Urban Environment	Tactical Training	2,592 sf
T04	Tactical Maze	Tactical Training	18,335 sf
T05	Smoke House	Tactical Training	3,680 sf
Explosives Training Environment			
E02	Explosives Demonstration Range	Explosives Training	100 acres*
E02a	Explosives Demonstration Range Classroom	Explosives Training	3,106 sf
E03	Post-Blast Training Range	Explosives Training	200 acres*
E03a	Post-Blast Training Range Classroom	Explosives Training	3,888 sf
E05	Explosive Breaching Range	Explosives Training	200 acres*
E05a	Explosive Breaching Range Classrooms	Explosives Training	5,106 sf
E05b	Explosive Breaching House	Explosives Training	3,200 sf
E05c	Explosive Breaching Wall 1	Explosives Training	N/A
E05d	Explosive Breaching Wall 2	Explosives Training	N/A
E05e	Explosive Breaching Range Storage	Storage	1,980 sf
Firearms Training Environment			
R02/R04	25-m Indoor/100-m Outdoor Firing Range	Firearms Training	184,900 sf
R03b	Live-Fire Shoot House	Firearms Training	4,787 sf
R03c/R05a/R07	Armory and Classroom	Firearms Storage/Training	41,266 sf
Service Area			
A09/I01	Central Warehouse and Public Works	Central Storage/Maintenance	22,261 sf
Driver Training Maintenance Area			
D06	Vehicle Maintenance Shop	Vehicle Maintenance	11,328 sf
D06a	400 Space Parking Deck	Training Vehicle Parking	144,970 sf
General			
All Areas	1,231 Distributed Parking Spaces	Parking	5 acres
		Total FASTC Facilities	**707,363 sf (1,355 acres*)**

Note: *Acreage listed is the entire area available for proposed facilities and infrastructure and does not signify that the entire area will be cleared.

Due to the total area of the FASTC project, it would be designed in five separate packages and constructed in up to five phases, depending on funding, over a 5-year period (Figure 2-3). Package (Pkg) 1 would include venues essential to commence operation of the FASTC training program and construction would begin in the summer of 2015, prior to the expiration of ARRA funding in September 2015 (Figure 2-4). Pkg 1 would consist of construction activities that completely avoid impacts to regulated wetland areas and could be constructed prior to completion of the ongoing wetland permitting process. Training venues would begin to operate in 2016 with approximately 10% of training operations underway. Construction of Pkgs 2 and 3 and Pkgs 4 and 5 would begin in the fall/winter of 2015/2016 and fall/winter of 2016/2017, respectively. By 2018, all training venues fundamental to the FASTC training program would be in place, and 90% of the training program would be operational. By 2020, 100% of training would be operational. Figure 2-3 shows the proposed phasing by package and Table 2-2 summarizes the site clearing sequence related to construction activities, along with NLEB summer maternity season. Phasing schedules continue to evolve and would ultimately depend on timeframes for design and appropriated funding from Congress, but they are estimated in this BA for purposes of analysis.

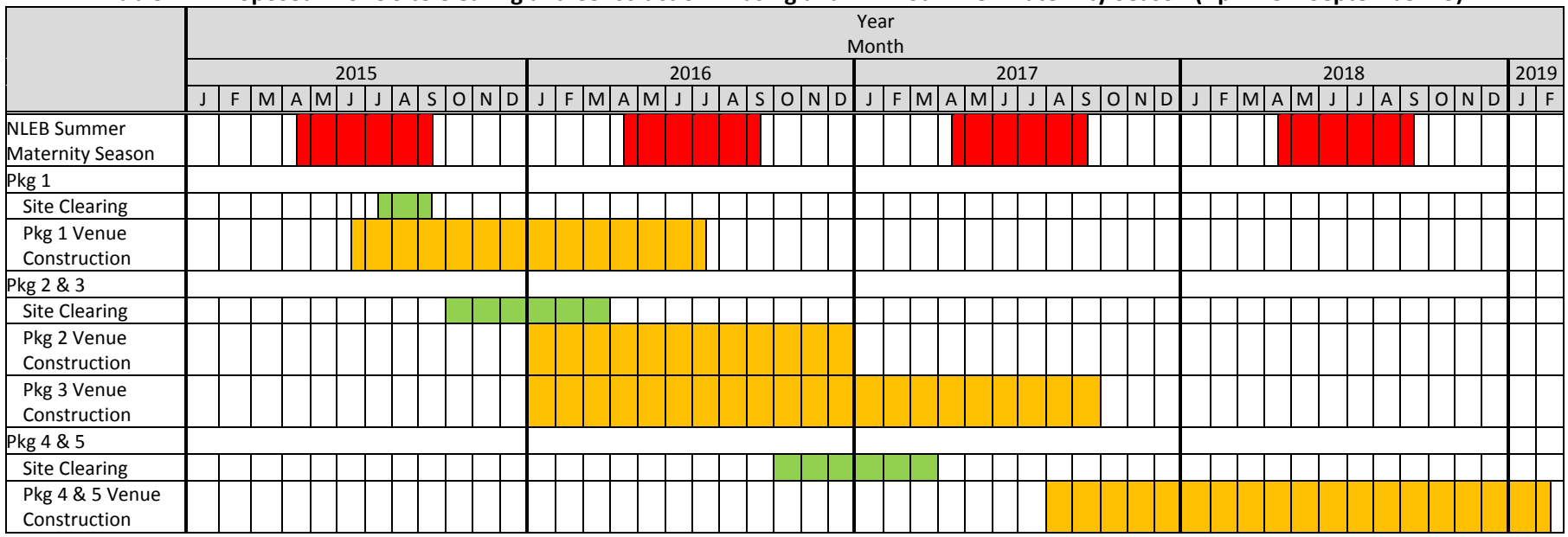
2.1.2 Personnel Levels

During the first year of training operations in 2016, average attendance at the facility would be approximately 60 students per day and 1,000 students per year. Approximately 60% of the training would occur between May and September. Between 2018 and 2020, at full operation, average daily attendance would increase to 600 students, and approximately 9,200 students would be trained annually. The average training duration would be approximately 14 days. Students would be housed at area hotels and would be transported by approximately 15 buses and 10 minivans to and from the facility. Buses and vans are anticipated to arrive at FASTC between 7:30 a.m. and 8:00 a.m. and depart at 5:00 p.m., Monday through Friday. Weekend training would require a similar transportation schedule. Limited training at night would require buses to leave FASTC between 7:00 p.m. and midnight.

Concurrent with the increase in the number of students, the number of staff would also be anticipated to increase over the 5-year construction period. Beginning in 2016, the transfer of the Security and Law Enforcement Training Division with limited administrative support and tactical training support from other facilities would occur. The DOS estimates that approximately 21 already filled positions would be relocated in 2016. Approximately 12 positions, including information technology specialists, contract and finance specialists, budget officers, program officers, and security would be filled locally. Service contractors would provide buildings, roads and grounds maintenance, housekeeping, and repair. Between 2018 and 2020, an additional 312 staff would relocate and 109 employees would be hired for a total staff of 333. Some transferred employees would include administrative and technical support, and instructional systems management staff. Other employees, such as physical fitness, information technology, instructors, and maintenance would be hired locally.

FASTC staff would be anticipated to arrive at the facility between 6:30 a.m. and 8:00 a.m. and depart at 5:00 p.m., Monday through Friday. Similar hours are anticipated for occasional weekend training sessions. Limited night training sessions would require some FASTC staff to leave the facility between 7:00 p.m. and midnight. FASTC staff employees are anticipated to commute daily to the facility in personally operated vehicles, although a small portion may utilize van pools, if available.

Table 2-2. Proposed FASTC Site Clearing and Construction Phasing and NLEB Summer Maternity Season (April 15 – September 15)



Phasing Package	Acres
Package 1	10.7
Package 2	13.9
Package 3	275.8
Package 4	103.8
Package 5	1.5
Total	**405.8**

Vegetation Type	Acres
Bottom Forest	2.2
Coniferous Forest	153.7
Deciduous Forest	61.3
Grass/Herb	2.3
Mixed Forest	147.7
Shrub	1.8
Urban/Range Grass	36.9
Total	**405.8**

Figure 2-3. Proposed FASTC Site Clearing and Construction Phasing

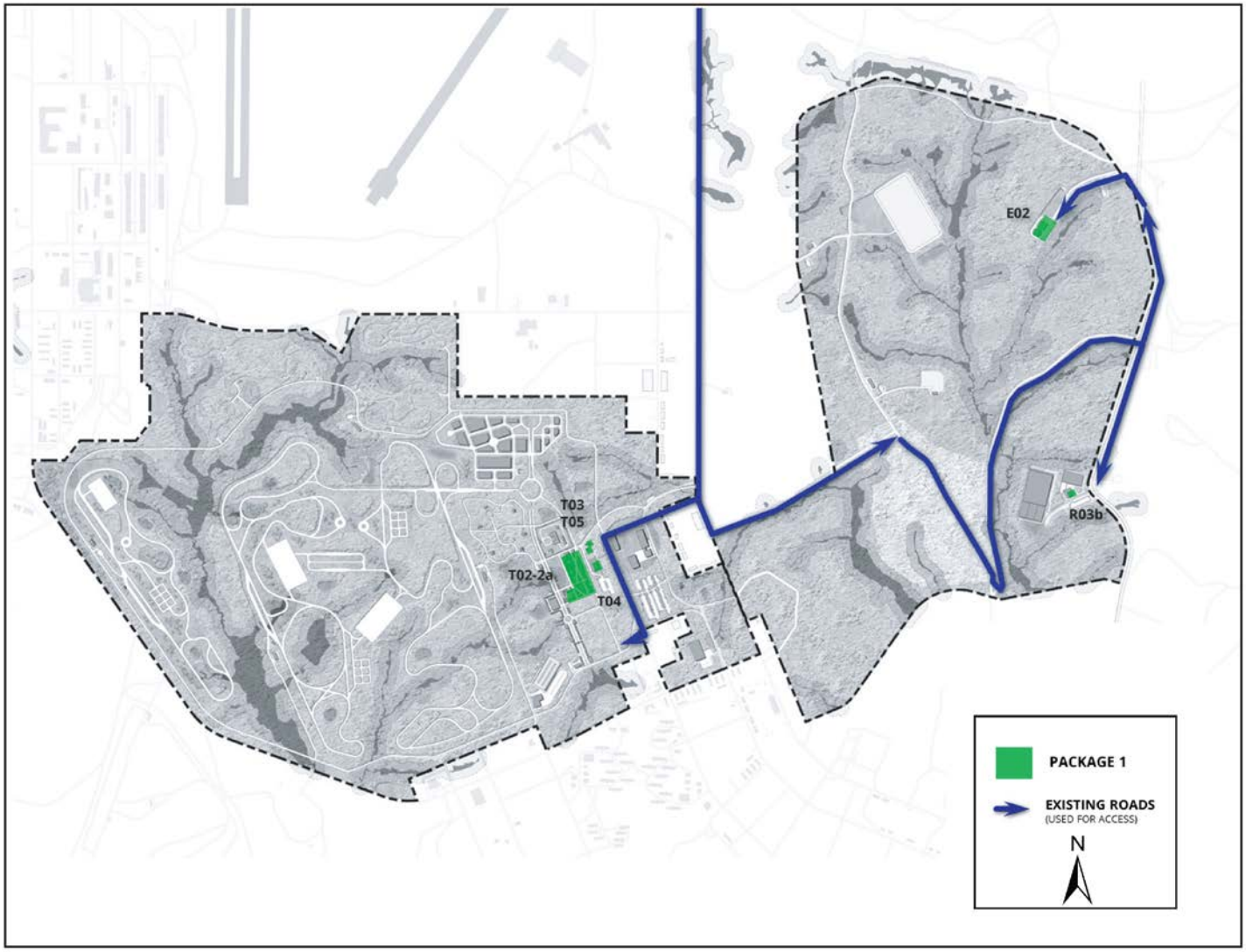


Figure 2-4. Areas Proposed for Clearing under Package 1

2.2 Proposed Conservation Measures to Avoid, Minimize, and Compensate for Potential Effects to the NLEB

The following sections describe the conservation measures that GSA would implement to avoid, minimize, and compensate for potential effects on the NLEB from proposed FASTC construction and operations.

1) In order to avoid and minimize direct effects to female NLEBs (pregnant, lactating, and post-lactating) and juvenile NLEBs (non-volant and volant) during the summer maternity season (April 15 – September 15), site clearing (i.e., vegetation removal) for Pkgs 2, 3, 4, and 5 would be conducted October 1 – March 31 (see Table 2-2). Under Pkg 1, approximately 9 acres of potential forested habitat would be cleared from mid-July thru mid-September.
2) In order to maintain potential summer maternity habitat within the action area, where possible and not a safety hazard or an obstacle to project construction, dead or dying trees will be allowed to remain in the action area. However, as leaving dead and dying trees standing in a project area is often difficult to do, bat boxes may be installed in suitable habitat to provide additional roost sites. Suitable NLEB roosts are trees (live, dying, dead, or snag) with a diameter at breast height (dbh) of 3 inches or greater that exhibit any of the following characteristics: exfoliating bark, crevices, cavity, or cracks. Isolated trees are considered suitable habitat when they exhibit the characteristics of a suitable roost tree and are less than 1,000 ft from the next nearest suitable roost tree within a woodlot, or wooded fencerow (USFWS 2014).
3) Existing vegetation would be preserved wherever possible. Areas that have been cleared under the Proposed Action, and need to be landscaped after construction of proposed facilities, would be planted with native plant communities indigenous to the central Piedmont and woodland-edge vegetation (e.g., early successional trees, shrubs, and grasses) would be planted along disturbed edges. The re-established plant communities would be tailored to the programmatic requirements of the training mission. These plantings would re-establish a natural edge to the forest, create corridors for wildlife movement, and prevent invasive species from establishing along disturbed edges. Approximately 180 acres of vegetation would be re-established under the Proposed Action, of which approximately 87 acres would be forest. Approximately 10 acres of vegetation would be re-established on Parcel 21/20 and 170 acres would be re-established on LRA Parcel 9.
4) To avoid potential impacts to wetlands and surface waters, during the development and planning process, multiple alternatives were created and discounted due to the potential magnitude of wetland and stream encroachments. The alternatives development incorporated a 100-ft buffer zone on either side of wetlands and streams as an area to be avoided to the maximum extent practicable. The Proposed Action assessed in this BA has incorporated wetland avoidance and impact minimization to the extent practicable during the planning phase. Under the Proposed Action, proposed project components have been sited as far upstream in the watersheds as possible to avoid and minimize impacts to larger perennial streams. All buildings and stormwater management facilities would be located outside of wetland limits.
5) In conjunction with final design, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared to avoid and minimize impacts to nearby surface waters. The SWPPP would include Best Management Practices (BMPs) for erosion and sedimentation controls, including

techniques to diffuse and slow the velocity of stormwater to reduce potential impacts (e.g., soil loss and sedimentation) to water quality during construction. All construction site equipment servicing and maintenance areas will be at least 300 ft away from waterbodies (e.g., wetlands, streams). All construction activities with the potential of impacting water quality due to potential runoff from the site would be conducted in accordance with SWPPP requirements. GSA would provide the Draft SWPPP to the USFWS for review and comment.

6) To the maximum extent practicable the following preventive measures would be implemented:
    a. The perimeter of all areas to be disturbed during construction or maintenance activities would be clearly demarcated using flagging or temporary construction fence, and no disturbance outside that perimeter would be authorized. All access routes into and out of the proposed disturbance area would be flagged, and no construction travel outside those boundaries would be authorized. When available, areas already disturbed by past activities or those that would be used later in the construction period shall be used for staging, parking, and equipment storage.
    b. Materials such as gravel or topsoil would be obtained from existing developed or previously used sources, not from undisturbed areas adjacent to the property.
    c. When vehicles or equipment are being refueled during construction, drip pans would be used underneath all construction equipment and containment zones would be established.
    d. Non-hazardous waste materials, litter, and other discarded materials, such as construction waste, would be contained in secured containers until removed from the construction site. All trash containers would have secured closures to prevent animal foraging.
7) To avoid and minimize importation of non-native plant and animal species onto the site, construction contractors will be required to inspect and clean all construction equipment and vehicles prior to any construction activity within the action area. All construction equipment and vehicles will be inspected to ensure that hydraulic fittings are tight, hydraulic hoses are in good condition and replaced if damaged, and there are no petroleum leaks.
8) Wildfire prevention measures would be implemented, including restricting smoking to areas clear of vegetation, ensuring no fires of any kind are ignited, and equipping vehicles with spark arrestors and fire extinguishers.
9) Requirements for safe handling and disposal of hazardous wastes would be implemented.
10) To maintain and blend with the character of the surrounding rural environment, site lighting would be designed to meet local or federal “Dark Sky” guidelines limiting nighttime light pollution and glare. Hooded lights will be used to the maximum extent practicable at all new roads and facilities within and adjacent to forest habitat. Illumination of forest will be kept to an absolute minimum.
11) All outdoor construction activities would be conducted during daylight hours in known or suitable summer habitat to avoid harassment of foraging NLEBs (Apr 15-Sep 15).

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3.0 DESCRIPTION OF EXISTING CONDITIONS AND AREAS TO BE AFFECTED BY THE PROPOSED ACTION

3.1 ACTION AREA

The action area is the geographic area in which project effects could potentially be experienced by the NLEB. For the purposes of this BA, the action area includes those areas impacted by proposed FASTC construction activities (e.g., vegetation clearing and noise) and noise from operations (Figure 3-1).

3.1.1 Overview of the Vegetation Communities of the Action Area

Vegetation inventories conducted at Fort Pickett categorized vegetation communities in the study area as forestland, shrubland and grassland. Vegetation communities on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 are depicted in Figure 3-2.

Forestlands at Fort Pickett are comprised of stands of deciduous, coniferous, and mixed forests. The majority of the grasslands/shrublands occur within Fort Pickett's Controlled Access Area, but small areas are also present along roadsides and tank trails. Shrublands at Fort Pickett are not true shrublands, but are successional communities in transition between grasslands and forest that are found primarily in open areas where mechanical control and/or fire do not occur with enough frequency or intensity to maintain true grasslands (VaARNG 2007).

3.1.1.1 Parcel 21/20

Deciduous, coniferous, and mixed forests dominate the land cover on Parcel 21/20 (Figure 3-2). Forested habitat on Parcel 21/20 is in excellent condition. Coniferous forest areas are identified as pine plantations that have been managed with silvicultural practices (VaARNG 2007). The parcel also contains a limited amount of open grasslands, which are managed by frequent mowing.

Deciduous forest habitat consists of upland and bottomland hardwoods. Upland deciduous forests typically occur on the middle and lower slopes and at least 80% of the overstory trees are what are typically defined as upland hardwoods. The remaining percentage consists of various species of pine. The dominant upland hardwoods found on Parcel 21/20 are tulip poplar (*Liriodendron tulipifera*), white oak (*Quercus alba*) and northern red oak (*Quercus rubrum)*. In the vicinity of Range 8, mockernut hickory (*Carya alba*) and sourwood (*Oxydendrum arboreum*) were also noted as being dominant deciduous species. Understory species are dominated by flowering dogwood (*Cornus florida*), American holly (*Ilex opaca*), partridge berry (*Mitchella repens*), strawberry bush (*Euonymus americana*), and Christmas fern (*Polystichum acrostichoides*) (VaARNG 2007).

Bottomland deciduous forests on Parcel 21/20 contain a minimum of 80% bottomland hardwood species. These areas are dominated by red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), sycamore, (*Platanus occidentalis*), black gum (*Nyssa sylvatica*), green ash (*Fraxinus pennsylvanica*), and river birch (*Betula nigra*). These species are commonly located in the lower slopes along drainages, adjacent to and within wetlands, and on poorly drained soils bordering streams. Dominant understory species observed on Parcel 21/20 include highbush blueberry (*Vaccinium corymbosum*), iron wood (*Carpinus caroliniana*) spice bush (*Lindera benzoin*), soft rush (*Juncus effusis*), and netted chain fern (*Woodwardia areolata*) (VaARNG 2007).

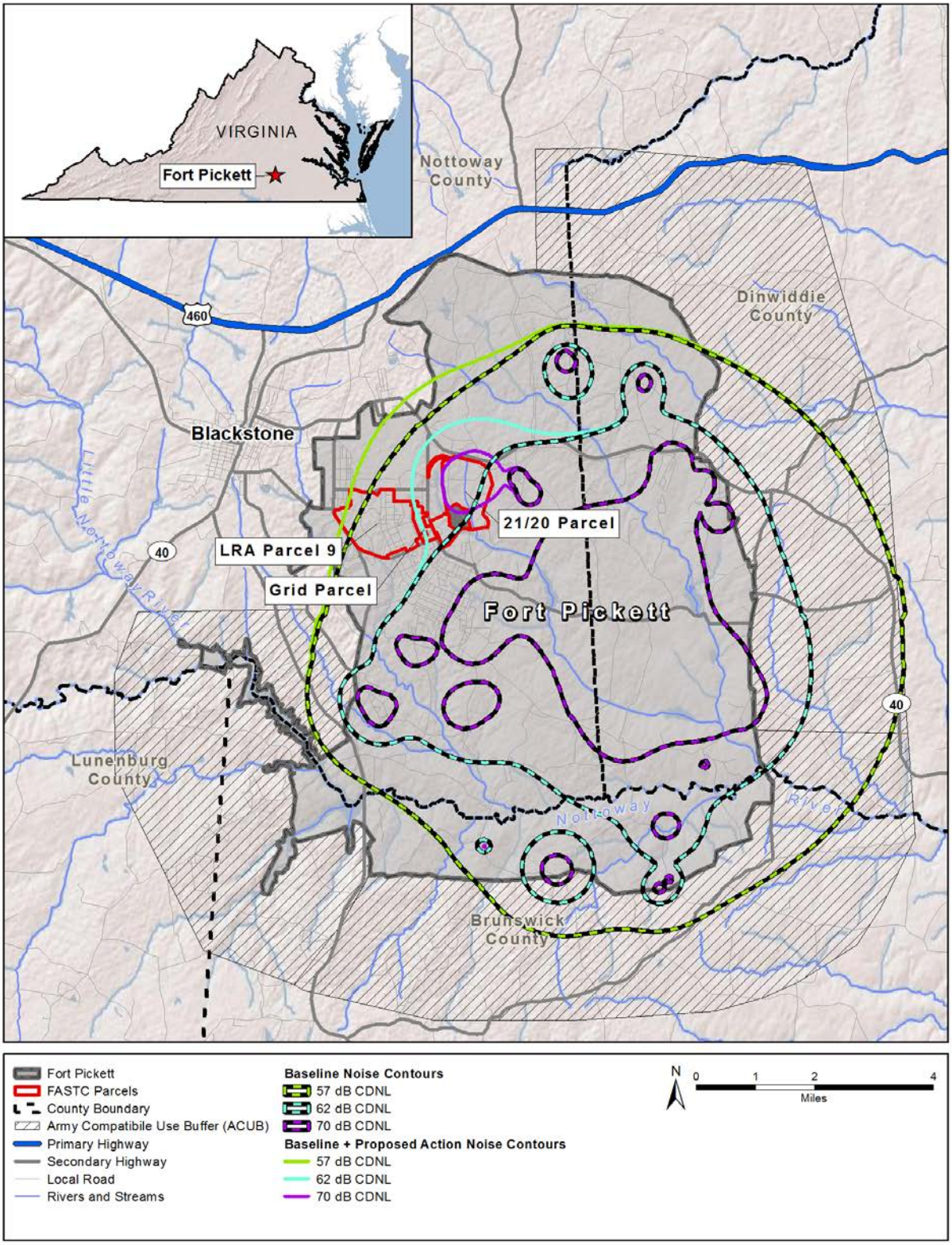

Figure 3-1. Proposed FASTC Action Area (Baseline + Proposed Action Noise Contour)

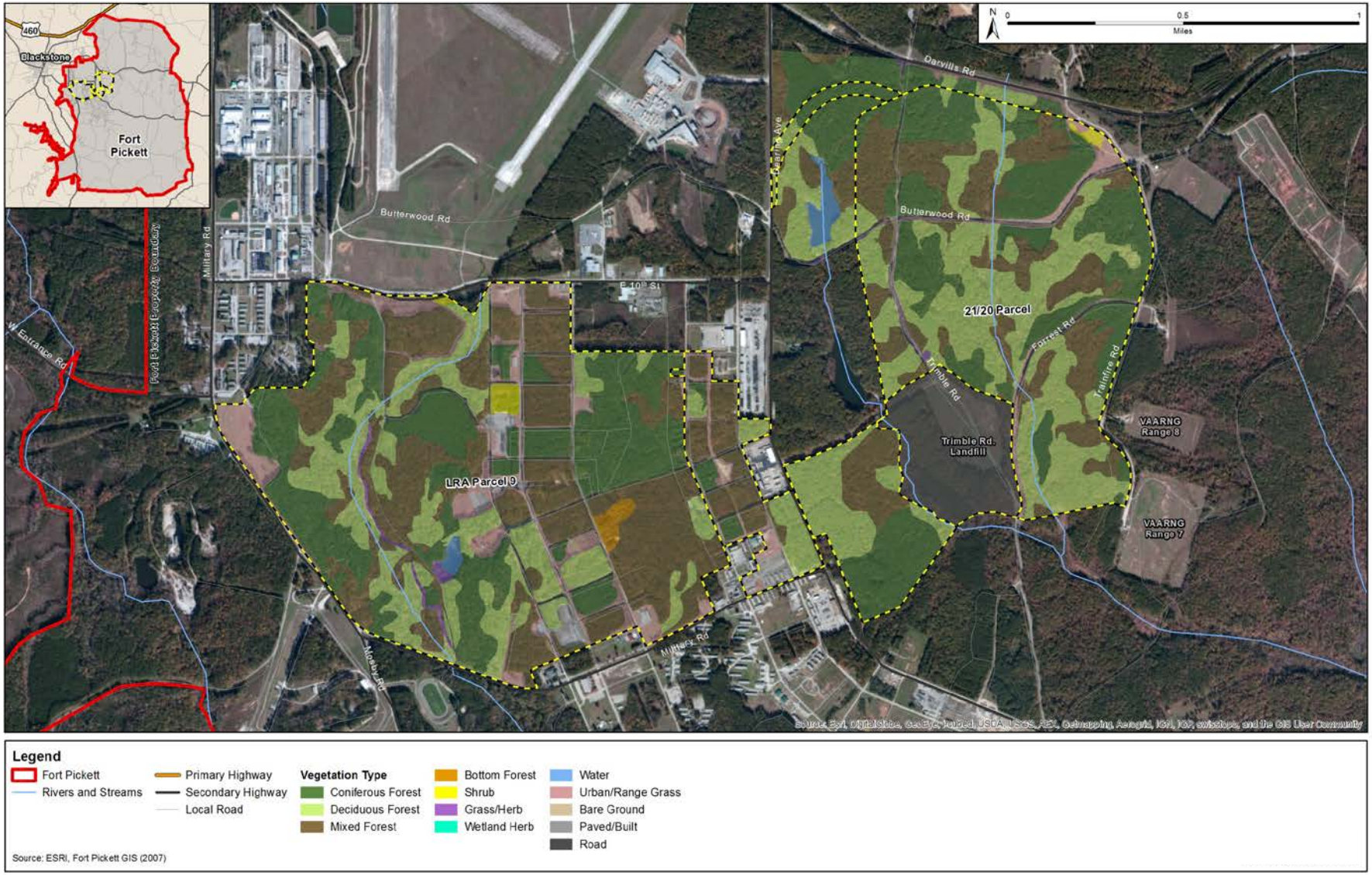

Figure 3-2. Vegetation Types within the Proposed FASTC Construction Footprint

Coniferous forest habitat within Parcel 21/20 consists of both planted and natural stands of loblolly pine (*Pinus taeda*), shortleaf pine (*Pinus echinata*) and to a lesser extent Virginia pine (*Pinus virginiana*) (VaARNG 2007).

Hardwoods are present but do not exceed 20% of the overstory. Loblolly pine is the most common species and occurs throughout the parcel on all types of soil and in mixed and pure stands. Loblolly pine is adaptable to all sites, but occurs at the greatest density on upper slopes and ridges where it was likely planted as a silvicultural practice. Shortleaf pine and Virginia pine are interspersed with the loblolly pines throughout the site. Shortleaf is present on the upper and lower slopes while Virginia pine is observed on upper slopes and ridges and on poor soils (VaARNG 2007).

Mixed forest habitat on Parcel 21/20 contains hardwood species such as southern red oak, white oak, black oak (*Quercus velutina*), sweetgum, and tulip poplar, which typically comprise 20% to 80% of the overstory basal area. The remainder of the overstory is composed of a mixture of coniferous species. Loblolly pine, shortleaf pine and Virginia pine are commonly found mixed with upland. It is probable many of these mixed forests were previously fields that were abandoned and have since turned into advanced old-field successional communities (VaARNG 2007).

Grassland habitat on Parcel 21/20 is limited and primarily restricted to roadside areas and tank trail edges. Annual mowing of these areas has effectively stalled succession of the habitat. These areas are dominated primarily by broomsedge (*Andropogon virginicus*), little bluestem (*Schizachyrium scoparium*), autumn olive (*Elaeagnus umbellata*), staghorn sumac (*Rhus typhina*), panicums, golden rods (*Solidago spp.*), and asters (*Aster* spp.). Herbaceous vegetation documented in the vicinity of Range 8 is typified by barnyard grass (*Echinochloa crus-galli*), white throughwort (*Eupatorium album*), trumpet creeper (*Campsis radicans*) roundleaf greenbrier (*Smilax rotundifolia*), poorjoe (*Diodia teres*), and Carolina elephantsfoot (*Elephantopus carolinianus*) (VaARNG 2007).

3.1.1.2 Grid Parcel

Vegetation and habitat on the Grid Parcel consists of stands of early successional deciduous, coniferous and mixed forests similar to those described for Parcel 21/20, but more highly fragmented by roads and utility easements. Roadsides and utility easements on the parcel are maintained by frequent mowing and are dominated by invasive and pioneer species such as Autumn olive, spear thistle *(Cirsium vulgare),* Nepalese browntop *(Microstegium vimineum),* Eastern red cedar (*Juniperus virginiana),* Johnsongrass (*Sorghum halepense),* bushy bluestem *(Andropogon glomerata),* European privet *(Ligustrum vulgare),* japanese honeysuckle *(Lonicera japonica),* sweetgum, Chinese bushclover *(Lespedeza cuneata),* and poison ivy *(Toxicodendron radicans)*. Based on historic aerial photography, most of the forests are less than 20 years old, and based on visual observation the majority are densely covered with loblolly pine, white oak, red maple, sweetgum, mockernut hickory, northern red oak, southern red oak (*Quercus falcate),* and common persimmon *(Diospyrus virginiana)* (VaARNG 2007).

3.1.1.3 LRA Parcel 9

The vegetation and habitat on LRA Parcel 9 is dominated by early successional deciduous, coniferous, and mixed forests similar to those described for Parcel 21/20, although it is more highly fragmented by existing roads, buildings, and utility corridors (Figure 3-2). There are also tracts of forest on the parcel that appear to be in the early successional stage as a result of demolition activities. Early successional forests are also found along maintained areas such as roadsides and utility easements. Although maintained on a less frequent interval than the roadsides, the utility easements are dominated by invasive and pioneer species similar to those described for the Grid Parcel (VaARNG 2007).

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4.0 DESCRIPTION OF PROPOSED SPECIES THAT MAY BE AFFECTED

A site-specific species list for the action area was obtained from the USFWS using the Information, Planning and Conservation System. The list contained three ESA-listed species: Michaux's sumac, dwarf wedgemussel, and Roanoke logperch. However, as stated in Section 1.3.1.3, suitable habitat for these species does not occur within the action area and none of these species is known to occur within the action area. Therefore, they are not addressed further. The NLEB is currently proposed for listing as endangered under the ESA, is known to occur on Fort Pickett, and is therefore addressed in the analysis below.

4.1 NORTHERN LONG-EARED BAT

4.1.1 Species Description

The NLEB is a medium-sized bat (body is 3 – 3.7 inches, wingspan is 9 – 10 inches) that has a dark brown back and tawny to pale-brown underside. It is distinguished from other bats of the same genus by its relatively long ears (USFWS 2013a).

4.1.2 Listing Status

The NLEB was proposed to be federally listed as an endangered species under the ESA on October 2, 2013 (USFWS 2013b).

4.1.3 Threats

White-nose Syndrome (WNS). Currently the greatest threat to NLEB populations is the WNS disease. Without the emergence of WNS, the NLEB would not likely be declining at such a drastic rate. Since symptoms were first observed in 2006, WNS has spread rapidly and has resulted in the decline of NLEB in the Northeast by 99%, which is considered the core of the species' range, along with Canada. It is expected to spread throughout the U.S. (USFWS 2013b). The declines in NLEB populations resulting from WNS can make those populations more vulnerable to the threats listed below.

Loss or Degradation of Winter Habitat. Passages and entrances to NLEB winter habitat, or hibernacula (see Ecology below) that become obstructed (i.e., gates) can restrict bat movement and affect airflow, and consequently hibernacula temperature and humidity. Minor changes can make suitable winter habitat unsuitable for NLEB hibernation. If disturbed (e.g., by human activity) during hibernation, NLEB may use up their energy stores, causing them to not survive the winter or, in the case of females, not successfully produce offspring (USFWS 2013b).

Loss or Degradation of Summer Habitat. Development and clear-cutting for timber operations that permanently remove NLEB summer habitat (see Ecology below) threatens the NLEB populations already suffering dramatic declines due to WNS (USFWS 2013b). Aerial application of pesticides and herbicides at night may also impact NLEB habitat or reduce their prey. Impacts to clean water sources through reduced water quality from pollutants and runoff also reduce NLEB summer habitat and prey (USFWS 2014d).

Wind Farm Operations. While wind farms have only been documented to kill a small number of NLEB to date, wind farms are prevalent within the NLEB range, with many more planned (USFWS 2013b).

4.1.4 Ecology

Feeding Habits. NLEB emerge at dusk to feed on insects which they find by using echolocation. Primary prey consists of moths, flies, leafhoppers, caddisflies, and beetles in the understory of forested hillsides and ridges. NLEB also eat insects found on water surfaces and vegetation (USFWS 2013a).

Winter Habitat. The NLEB hibernates during the winter months in caves, mines, and railroad tunnels, called hibernacula. These caves or mines are typically large with big passages and entrances, constant temperatures (0 to 9° Celsius), and high humidity with minimal to no air currents. Features associated with caves may also be winter habitat including sinkholes, fissures, and other karst features. Abandoned structures may also serve as winter habitat for hibernation. Within hibernacula, NLEB are often found within small crevices or cracks. NLEB utilize winter habitat from mid-fall through mid-spring each year (USFWS 2013a; 2014d).

Summer Habitat. In the summer, NLEB select roosts based on suitability of the tree (space underneath bark, in cavities, and/or in crevices) rather than the species or health of the tree. NLEB roost singly or in small colonies in both live and dead trees (greater than 3 inches diameter at breast height). Isolated trees fitting the above criteria are considered suitable habitat when they are less than 1,000 ft from the next nearest suitable roost tree within a woodlot, or wooded fencerow (USFWS 2014d). Males and non-reproductive females may also roost in cooler places, like caves and mines, or more rarely, barns and sheds (USFWS 2013a).

Suitable summer habitat for NLEB consists of a wide variety of forested/wooded habitats meeting the criteria described above where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. Summer habitat is utilized by NLEB from approximately April 15 through September 15 each year (USFWS 2014d).

Life Cycle. NLEB utilize delayed fertilization to produce offspring. Males swarm within 5 miles of hibernacula in the late summer and early fall to begin breeding. This occurs within forested patches as well as linear features such as fencerows, riparian forests, and other wooded corridors. Females store sperm during hibernation until spring, when they emerge from their hibernacula, ovulate, and the stored sperm fertilizes an egg. After fertilization, pregnant females migrate to summer areas where they roost in small colonies and give birth to a single pup. These are called maternity colonies, and consist of 30-60 bats, although larger maternity colonies have been observed (USFWS 2013a). NLEB maternity colonies preferentially use suppressed, mid-story sassafras (*Sassafras albidum*) and black locust (*Pseudoacacia robinia*) with cavities that occur in clumped abundance in mature forest stands on mid- to upper-exposed slopes (St. Germain 2014). NLEB maternity colonies form distinct multi-node social networks of many trees and linked individuals in the forested landscape. These day roosts originated from what were either oldfield succession processes or stand-replacing regeneration events. NLEB networks are tolerant of prescribed fire, readily use stands where fire decreases canopy cover and increases snag density, and are tolerant of intermediate and mid-rotation disturbance (i.e., thinning or fire). During the months of May, June, and July, the bats within a maternity colony often give birth at around the same time. The young bats can fly 18-21 days after birth (USFWS 2013a).

Maternity, foraging, roosting, and commuting habitat within NLEB home ranges typically occur within 3 miles of a documented capture record or a positive identification of NLEB from properly deployed

acoustic devices, or within 1.5 miles of a known suitable roost tree. Limited migration (generally under 50 miles) occurs as NLEB move between their winter hibernacula and summer habitat. The spring migration generally occurs from mid-march to mid-May and the fall migration between mid-August and mid-October (USFWS 2014d).

4.1.5 Historical and Current Distribution

The NLEB is found in the eastern and north central United States, all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory, and eastern British Columbia. It is found in 35 states from Maine to North Carolina on the Atlantic Coast, westward to eastern Oklahoma and north through the Dakotas, extending southward to parts of southern states from Georgia to Louisiana, and reaching into eastern Montana and Wyoming. In Canada it is found from the Atlantic Coast westward to the southern Yukon Territory and eastern British Columbia. Historically, the NLEB has been found in greater abundance in the northeast and portions of the Midwest and Southeast, with more limited occurrence along the western edge of the range (USFWS 2014d).

4.1.6 Status of Species within the Action Area

This species has previously been documented within the Fort Pickett installation during 2007 and 2014 surveys (St. Germain 2008, 2014). However, current regional NLEB distribution information outside the proposed FASTC project area is lacking (St. Germain 2014).

In accordance with the survey protocols within the *Northern Long-eared Bat Interim Conference and Planning Guidance* (USFWS 2014d) Phase 2 Summer Presence/Absence surveys were conducted within the approved sampling period between August 1 and August 15. Acoustic sampling was conducted in suitable NLEB habitat identified within each project parcel. The total amount of suitable summer habitat was estimated using available aerial photography and/or initial site visits. Efforts were focused in the areas where bat activity would likely be highest typically including flight corridors created by perennial road ruts and old logging trails, creeks, ponds, or other waterways, as well as potential foraging areas (e.g. forest clearings) (St. Germain 2014). In addition, Phase 3 mist net capture surveys were also conducted for NLEB. This process followed the processes outlined in USFWS (2014d). The survey report was submitted to USFWS and cooperating agencies, and is included in Appendix A. The results of this survey are summarized below.

A total of 29 sites were surveyed with acoustical detectors August 1-5, 2014 for 4 consecutive nights and 5 additional sites were surveyed August 5-8, 2014 for 3 consecutive nights. This resulted in a total of 34 sites with 131 detector nights (~1,310 detector hours) of Phase 2 survey. A total of 35,596 acoustic files were collected and analyzed. Using Kaleidoscope Pro v2.0.7, Bats of North America v2.0.5, default filters, and sensitivity/accuracy settings, 12,621 calls were identified to the species level. These represented 9 species: Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), little brown bat (*Myotis lucifugus*), NLEB, Indiana bat (inconclusive), evening bat (*Nycticeius humeralis*), and eastern pipistrelle (*Perimyotis subflavus*).

The presence of NLEB was confirmed via acoustic detections and captures on Parcel 21/20 and LRA Parcel 9. Analyzing the probability of correct classification at 99% ($p \leq 0.01$) resulted in 11 sites where the NLEB was identified (Figure 4-1). Figure 4-2 depicts NLEB detections in relation to the Proposed Action and vegetation communities. NLEB were not acoustically detected or captured in the Grid Parcel, but

they are assumed to occur in this area because the Grid Parcel is located between Parcel 21/20 and LRA Parcel 9 (St. Germain 2014).

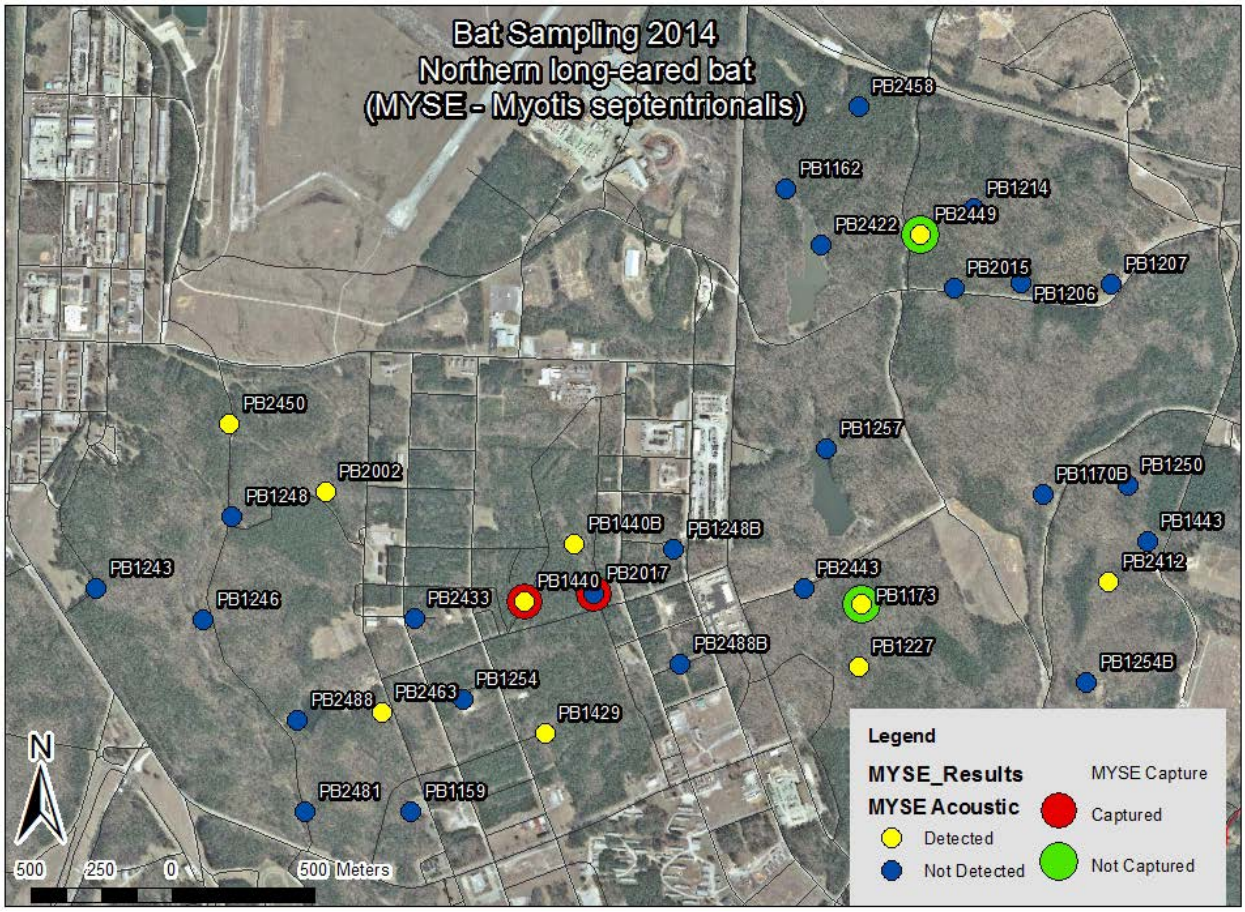

Figure 4-1. NLEB Acoustic Detections and Captures on the Proposed FASTC Parcels, Fort Pickett, VA (August 2014)

The forest stand characteristics of the proposed FASTC parcels and surrounding area are indicative of an intermediate, mid-rotation, and fire-maintained disturbance (St. Germain 2014). While not specifically quantified, appropriate NLEB roosting habitat occurs within the proposed FASTC project area and the surrounding area of Fort Pickett. The time of evening/night of the acoustical detections and captures were not conclusive in terms of a roost tree (majority of calls typically occur right at dusk) or maternity roost. Only adult males were captured during this survey, but the abundance of acoustical detections of NLEB in addition to those captures could indicate a maternity colony (or presence of a post-maternity colony of volant juveniles and post-lactating adult females) in the vicinity of the action area.

Winter Hibernacula. As stated above, the NLEB hibernates during the winter months in caves, mines, and railroad tunnels, as well as sinkholes, fissures, and other karst features and abandoned structures. No caves or mines exist within the action area and the action area is not within a region containing karst features or formations. The Virginia Department of Game and Inland Fisheries (VDGIF) and Virginia Department of Conservation and Recreation (VDCR) Natural Heritage lists known hibernacula in Virginia; none of the listed hibernacula are in Nottoway County (VDGIF and VDCR Natural Heritage Program 2011). Under the Proposed Action, there would be no demolition of abandoned structures.

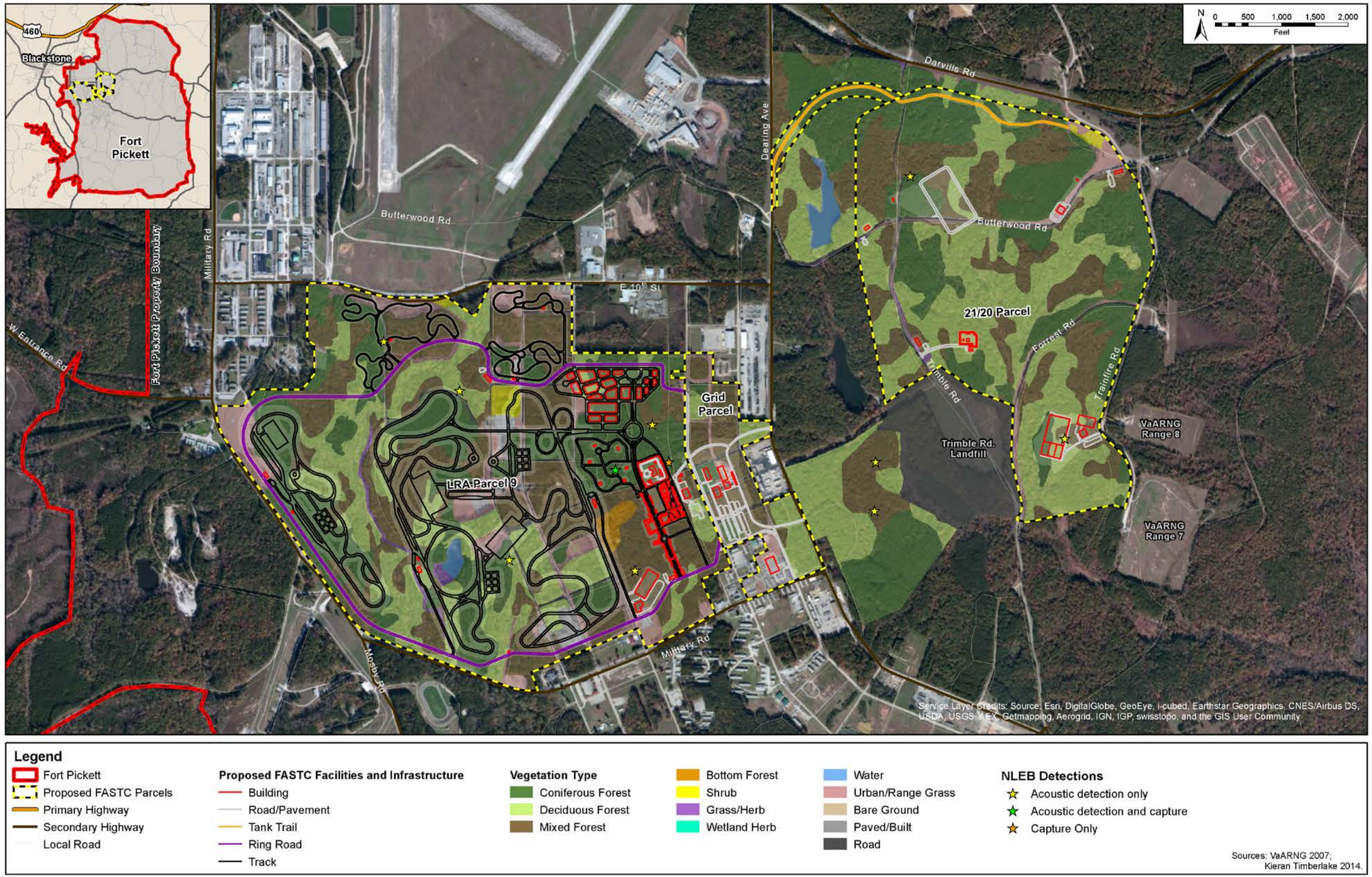

Figure 4-2. NLEB Acoustic Detections and Captures on the Proposed FASTC Parcels in Relation to the Proposed Action and Vegetation Types

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5.0 ANALYSIS OF POTENTIAL EFFECTS TO PROPOSED LISTED SPECIES

5.1 APPROACH TO ANALYSIS

This chapter presents an analysis of potential direct and indirect effects on the ESA-proposed endangered NLEB from implementation of the construction and operational activities of the Proposed Action. Direct effects are the direct or immediate effects of the project on the species or its habitat. Direct effects result from the Proposed Action including the effects of interrelated actions and interdependent actions. Indirect effects are those that are caused by the Proposed Action and are later in time, but still are reasonably certain to occur (e.g., attraction of predators due to development and human presence). All direct and indirect project effects on listed species have been further classified and evaluated based on their anticipated longevity (i.e., temporary or permanent effects). Effects of the action under consultation are analyzed together with the effects of other activities that are interrelated to, and interdependent with, that action. Interrelated actions are those that are part of a larger action and depend on the larger action for its justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Under this Proposed Action, there are no interrelated or interdependent actions.

As they relate to the NLEB considered in this BA, direct and indirect effects from proposed activities within the action area have been evaluated herein based upon: (1) an understanding of the methods and equipment that would be used during construction and operations within the proposed action area, (2) knowledge of the potential for such methods and equipment to disturb the natural resources on which the subject species depend, and (3) awareness of the types of effects that have resulted from similar actions in the past.

5.1.1 Stressors and Threats Included for Analysis

The GSA identified threats to the NLEB associated with the proposed FASTC construction and operational activities based on previous consultations as well as review of the Federal Register notice for the proposed listing of NLEB as endangered and the NLEB Interim Conference and Planning Guidance (USFWS 2013b, 2014d). Six stressors to NLEB have been identified (Table 5-1).

Table 5-1. Potential Effects on NLEB Based on Stressors Associated with the Proposed Action

Stressor	*Potential Effect on NLEB (Direct or Indirect)*
Habitat Loss	Direct loss of habitat reduces species' ability to reproduce, find food, find shelter, and survive. (Direct)
Noise	Disturbance to species from noise depends on the type of noise generated, the proximity to the noise source, duration of the sound, frequency of events, and the past history of exposure to noise events by individuals of a species. (Direct and indirect)
Increased Human Presence	Increased human presence could cause wildlife to avoid the area. (Direct and indirect)
Collisions with Vehicles	Direct mortality due to vehicle strikes during FASTC training
Invasive Species Introductions	Construction activities could potentially increase the potential for the introduction of invasive species from equipment or fill material. These introductions can degrade habitats by altering native species composition and structure. (Indirect)
Gas, Fuel, Oil, or Solvent Spills	During construction and operation, there is the potential for spills of gas, fuel, oil, or solvents. (Indirect)
Inappropriate Night Lighting	Inappropriate lighting may result in abandonment of nesting and roosting areas by bats. (Direct and indirect)

5.2 EFFECTS ANALYSIS AND DETERMINATION FOR THE NLEB

5.2.1 Impacts to NLEB Habitat

5.2.1.1 Summer Habitat

Under the Proposed Action, approximately 406 acres of potential NLEB foraging and roosting habitat would be lost due to site clearing for proposed FASTC facilities and infrastructure (Table 5-2). Approximately 365 acres of forest habitat (61 acres of deciduous forest, 154 acres of coniferous forest, and 148 acres of mixed forest [deciduous and coniferous]) and approximately 5 acres of wetlands would be removed (Figures 5-1, 5-2, and 5-3). Additional opportunities for avoidance and minimization of wetland impacts will be explored during project design. The re-vegetation strategies outlined in Section 2.2, *Proposed Conservation Measures*, would reduce impacts to NLEB habitat by preserving forest block connectivity to the extent practicable. The preservation of these corridors would provide for movement between forested areas and would minimize impacts to NLEB by providing linkages between the larger forest blocks in the area. Although there would be a loss of habitat within the FASTC footprint, insects that NLEB forage on would still occur within the FASTC areas and proposed daytime construction and operational activities would not preclude use of the area by NLEBs foraging at night. NLEBs commonly forage over open areas as these areas often attract insects or provide corridors for insect travel between vegetation types.

Table 5-2. Potential Direct Impacts to Vegetation under the Proposed Action

	Vegetation Type (acres)							
Area	*DF*	*MF*	*CF*	*S*	*U/RG*	*G/H*	*BF*	***Total***
Pkg 1	1.1	6.9	1.1	0	1.6	0	0	**10.7**
Pkg 2	5.7	4.1	4.2	0	0	0	0	**14.0**
Pkg 3	40.5	113.0	87.2	1.8	29.2	1.9	2.2	**275.8**
Pkg 4	13.3	23.3	61.1	0	5.7	0.3	0	**103.7**
Pkg 5	0.8	0.4	0	0	0.3	0.1	0	**1.6**
Total	**61.4**	**147.7**	**153.5**	**1.9**	**36.8**	**2.3**	**2.2**	**405.8**

Notes: BF = bottom forest, CF = coniferous forest, DF = deciduous forest, G/H = grass/herb, MF = mixed forest, S = shrub, U/RG = urban/range grass.

As stated in Section 2.2, to avoid direct impacts to NLEBs that may potentially use the FASTC areas during the summer season, vegetation clearing for construction of Pkgs 2-5 would occur from October 1 thru March 31 when NLEB are not present within the action area. Although summer roost trees have not be identified on Fort Pickett, the clearing of forest during these months would avoid any direct impacts to NLEBs that may potentially roost within the area during the summer.

Project facilities associated with Pkg 1 include facilities T02a, T03, T05, T04, E02 and R03b (refer to Figures 2-3 and 2-4). Under Pkg 1, clearing of approximately 9 acres of forest (1 acre of deciduous forest, 1 acre of coniferous forest, and 7 acres of mixed forest) would occur during the summer months when NLEB are present within the action area (Table 5-3). However, areas proposed for clearing associated with E02 and R03b are small isolated tracts of previously disturbed forest, 1.6 and 0.4 acres, respectively, adjacent to currently cleared areas. It is expected that the clearing of these small areas of potential NLEB foraging and roosting habitat would not result in adverse effects to NLEB due to the limited area of clearing of previously disturbed forest and that there were no detections of NLEB within both of these areas during surveys in August 2014 (see Section 4.1.6).

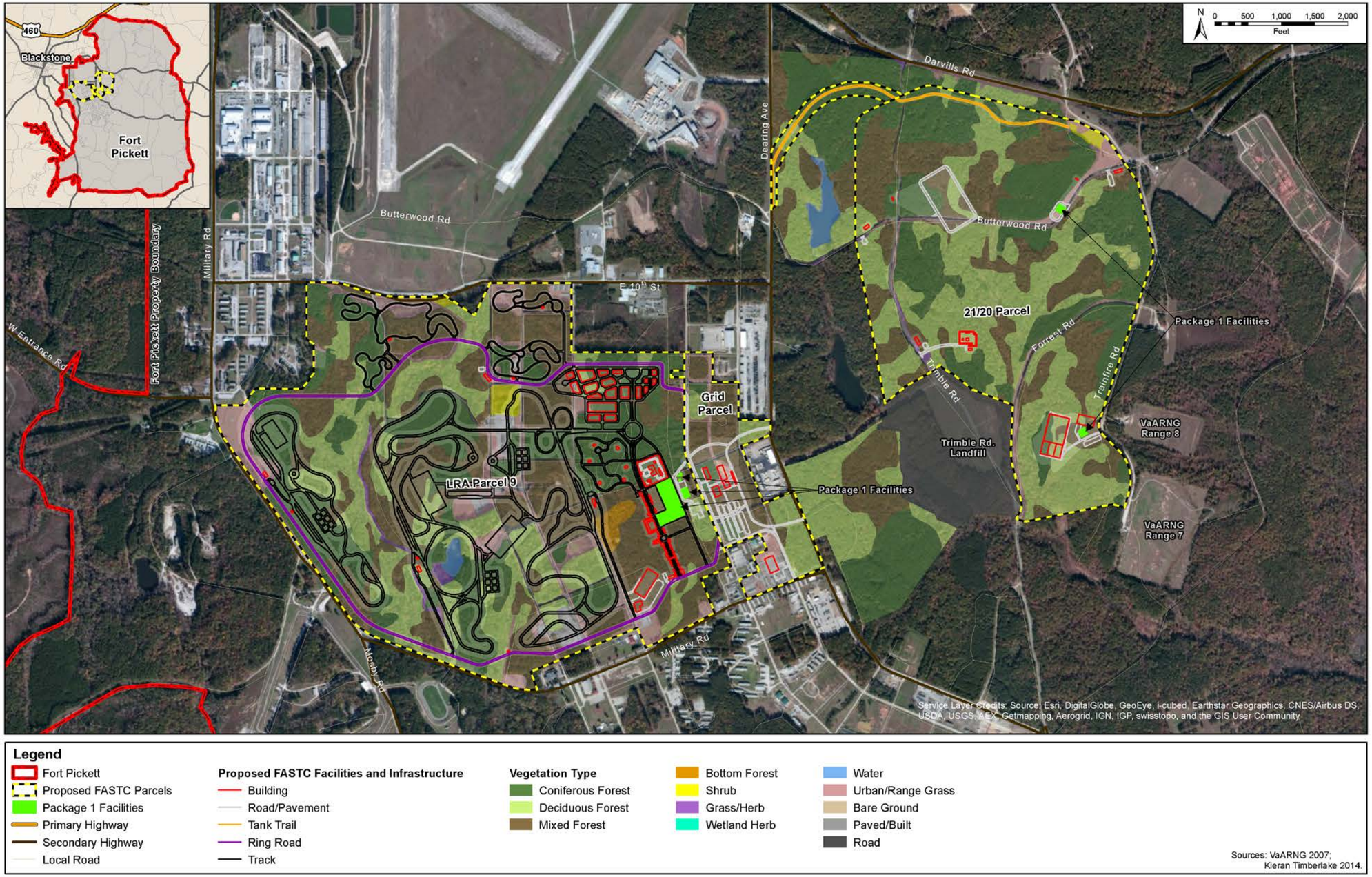

Figure 5-1. Impacts to Vegetation under the Proposed Action

Figure 5-2. Impacts to Wetlands within LRA Parcel 9 and the Grid Parcel under the Proposed Action

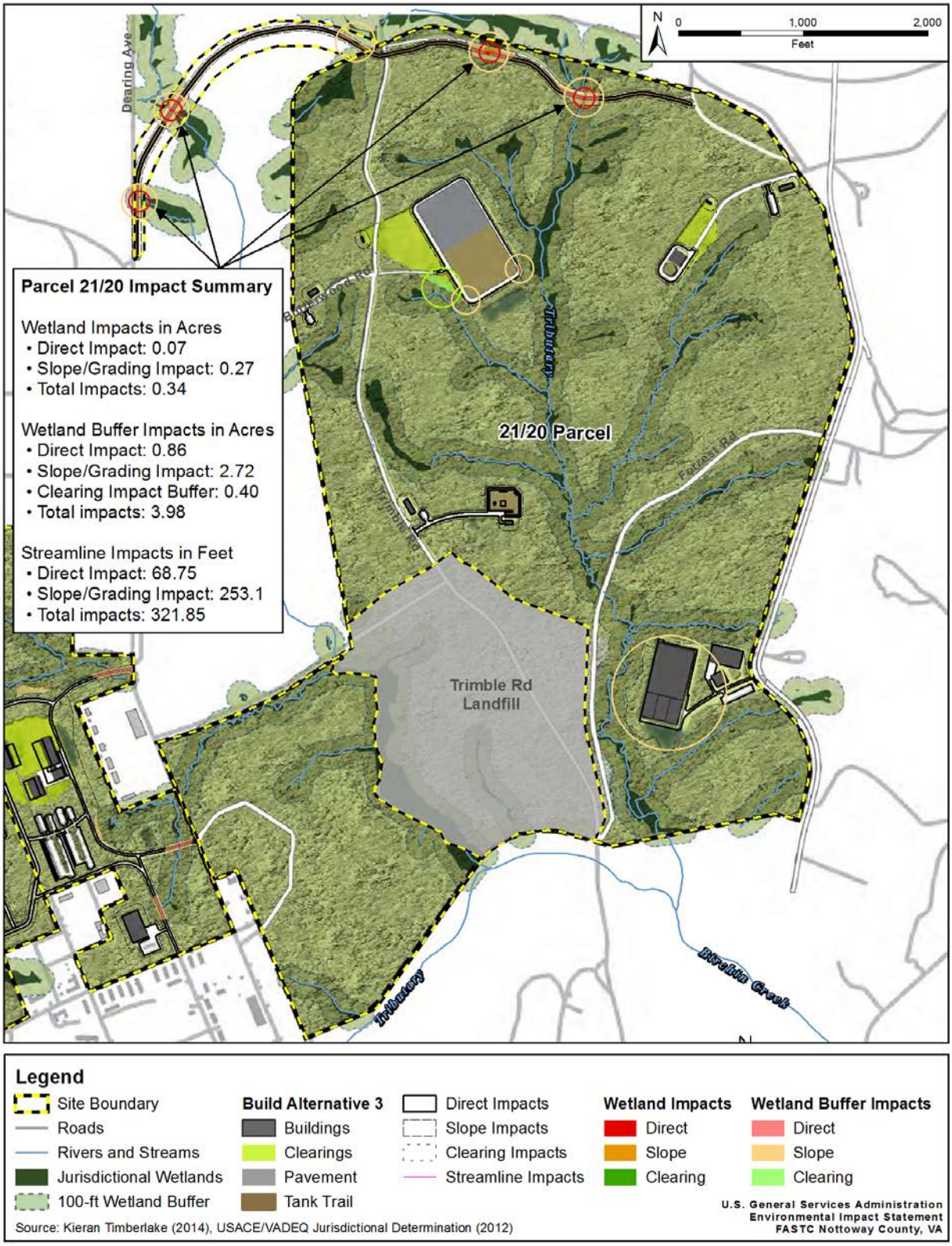

Figure 5-3. Impacts to Wetlands within the 21/20 Parcel under the Proposed Action

Table 5-3. Potential Direct Impacts to Vegetation under Pkg 1

Facility	*Vegetation Type (acres)*							
	DF	*MF*	*CF*	*S*	*U/RG*	*G/H*	*BF*	***Total***
E02	0.1	0.4	1.1	0	1.6	0	0	**3.2**
R03b	0	0.4	0	0	0	0	0	**0.4**
T02a, T03, T04, T05	1.0	6.0	0	0	0	0	0	**7.0**
Total	**1.1**	**6.8**	**1.1**	**0**	**1.6**	**0**	**0**	**10.6**

Notes: BF = bottom forest, CF = coniferous forest, DF = deciduous forest, G/H = grass/herb, MF = mixed forest, S = shrub, U/RG = urban/range grass.

Under Pkg 1, 7 acres of forest habitat (1 acre of deciduous forest and 6 acres of mixed forest) associated with proposed facilities T02a, T03, T04, and T05 would be cleared between mid-July and mid-September. During August 2014 surveys, there were three acoustic detections of NLEBs within approximately 200-250 m of these proposed facilities and one capture immediately to the north of the proposed facilities (Figure 5-4). Only adult males were captured during these surveys, but the abundance of acoustical detections of NLEB in addition to those captures could indicate a maternity colony (or presence of a post-maternity colony of volant juveniles and post-lactating adult females) in the vicinity of the action area. Therefore, it is conservatively assumed that the 7 acres of proposed forest clearing associated with proposed facilities T02a, T03, T04, and T05 contains suitable NLEB foraging and roosting habitat.

Indirect effects to NLEBs may occur if summer maternity roost trees are cleared during the fall swarming or winter hibernation period. Removal of maternity roost trees during the winter season renders them unavailable to pregnant bats that exhibit maternity area and/or maternity roost tree fidelity following migration in the spring. If no adequate primary and alternate maternity roosts remain adjacent to the area of impact, indirect effects would be expected to occur as pregnant females search potentially unfamiliar habitat for new roosting and foraging areas the following year. Resulting indirect effects from the loss of maternity trees may include increases in energetic demands, exposure to inter- and intra-specific competition, and decreases in the long-term reproductive success and viability of the colony in the area. Although NLEBs exhibit fidelity to maternity roost areas, they appear to use networks of roosts arranged around a central node roost tree and frequently switch between roosts within a network during the summer (Johnson et al. 2012). Given the ephemeral nature of roosts and the apparent relationship between roost network structure and roosting area, it seems likely that roosting areas could shift with roost loss (Silvis et al. 2014).

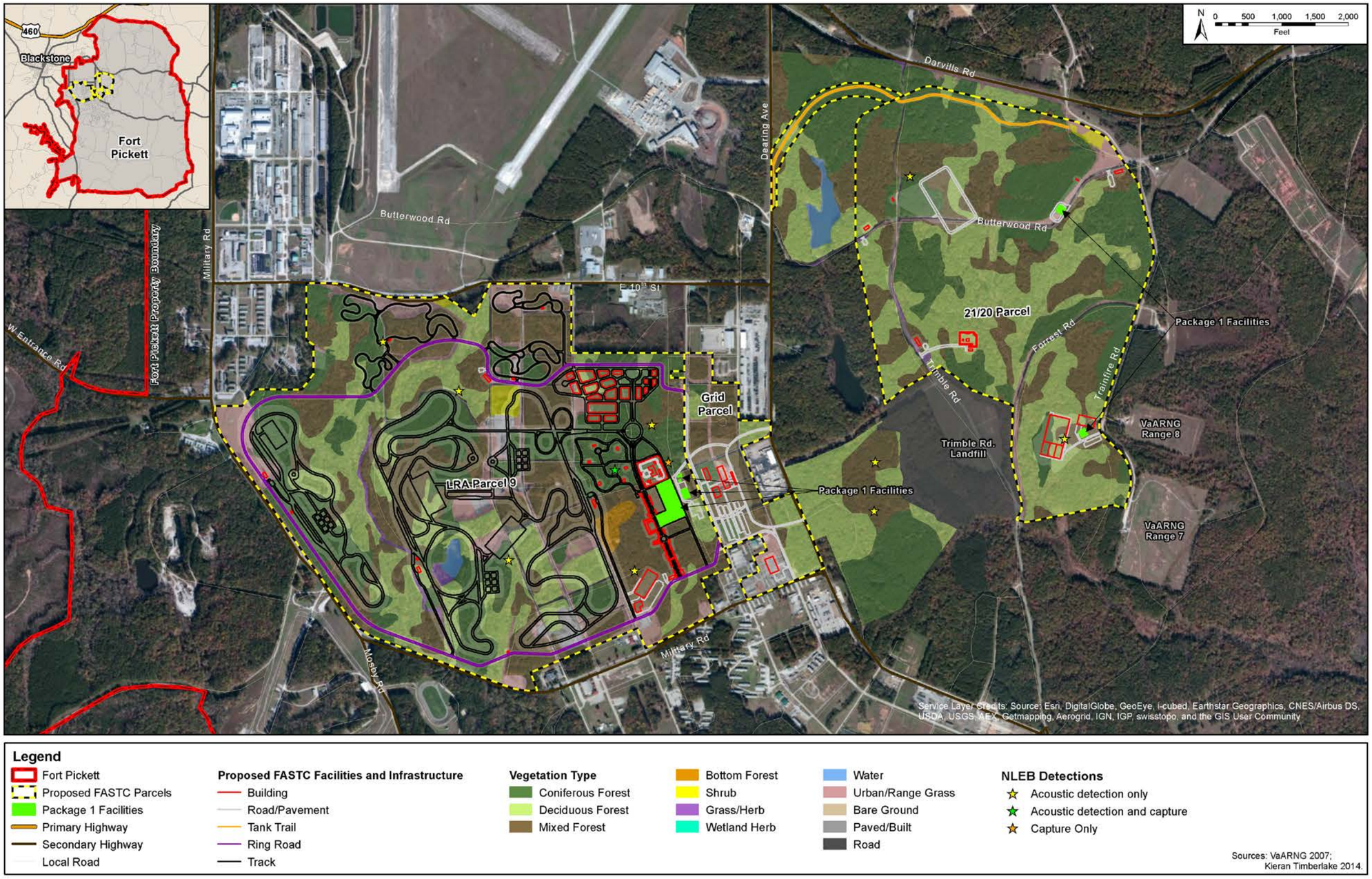

Figure 5-4. Acoustic Detections and Captures within the FASTC Action Area

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Under the Proposed Action, existing vegetation would be preserved wherever possible. Areas that have been cleared under the Proposed Action, and need to be landscaped after construction of proposed facilities, would be planted with native plant communities indigenous to the central Piedmont and woodland-edge vegetation (e.g., early successional trees, shrubs, and grasses) would be planted along disturbed edges. The re-established plant communities would be tailored to the programmatic requirements of the training mission. These plantings would re-establish a natural edge to the forest, create corridors for wildlife movement, and prevent invasive species from establishing along disturbed edges. Approximately 180 acres of vegetation would be re-established under the Proposed Action, of which approximately 87 acres would be forest. Approximately 10 acres of vegetation would be re-established on Parcel 21/20 and 170 acres would be re-established on LRA Parcel 9. Figure 5-5 depicts the proposed revegetation plan for the project area after construction of all facilities. As part of the revegetation plan, known preferred NLEB roost tree species would be planted.

All impacts to NLEB bat habitat are expected to occur during construction. Clearing of vegetation during construction could lead to increased soil erosion, or the spread of invasive or non-native plant species. Clearing and construction activities could also result in soil compaction, which could interfere with revegetation success. GSA has proposed Conservation Measures 4, 5, 6, and 7 to minimize these impacts.

Vegetation clearing of approximately 406 acres of potential roosting and foraging habitat that is known to support NLEBs, may result in substantial loss/degradation of habitat quantity or quality. Degradation of remaining habitat on LRA Parcel 9 is also likely to occur from increased fragmentation. NLEBs at all life stages (juveniles and adults) may be affected by impairment of behavioral patterns, including breeding, feeding, or sheltering. Based on the above analysis and with implementation of proposed conservation measures (see Section 2.2), potential impacts to NLEB summer habitat from proposed FASTC construction activities may affect, is likely to adversely affect the NLEB.

5.2.1.2 Winter Habitat

Impacts to NLEB during winter and spring and fall swarming periods are not anticipated because there are no winter hibernacula within the action area or within 5 miles. Virginia Department of Game and Inland Fisheries and DCR Natural Heritage lists known hibernacula in Virginia, and no hibernacula are listed in Nottoway County.

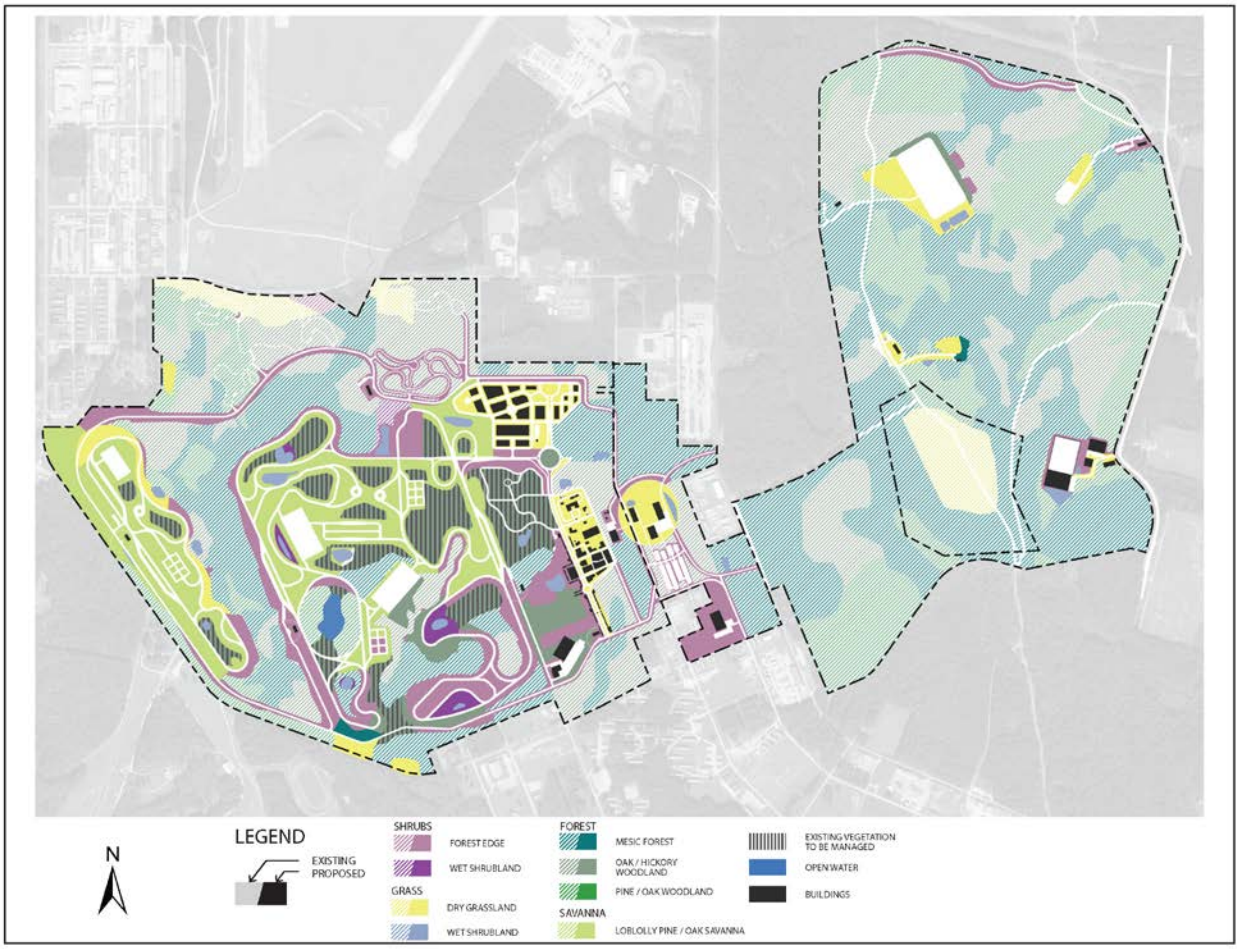

Figure 5-5. Proposed Revegetation Plan for the Proposed FASTC

5.2.2 Noise Impacts

Noise is discussed in terms of its effect on the environment. For purposes of this BA, the action area for noise is the area that would be affected by noise generated by FASTC training activities. Potential increases in noise energy are predicted using specialized computer models that quantify noise impacts using standardized units of measure or metrics, which are defined below.

5.2.2.1 Introduction to Noise

Noise is considered unwanted or annoying sound that interferes with or disrupts normal human activities. Although exposure to very high noise levels can cause hearing loss, the principal human response to noise is annoyance. The response of different individuals to similar noise events is diverse and is influenced by the type of noise, perceived importance of the noise, its appropriateness in the setting, time of day, type of activity during which the noise occurs, and sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound is all around us. The perception and evaluation of sound involves three basic physical characteristics:

- Duration – the length of time the sound can be detected
- Magnitude – the acoustic energy, which is expressed in terms of sound pressure, in decibels (dB)
- Frequency – the number of cycles per second the air vibrates, in Hertz (Hz)

The duration of a noise source can be continuous (constant), transient (short-duration), or impulsive (typically less than 1 second). Transient sounds are typically associated with a sound source that moves such an aircraft overflight (U.S. Army Center for Health Promotion and Preventive Medicine [USACHPPM] 2005).

The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. This vast range means that using a linear scale to represent sound level is not feasible. The decibel (dB) is a logarithmic unit used to represent the magnitude of a sound, also referred to as the sound level. All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second or hertz (Hz).

5.2.2.2 Noise Metrics

A metric is a system for measuring or quantifying a particular characteristic of a subject. Since noise is a complex physical phenomenon, different noise metrics help to quantify the noise environment and describe impacts from noise. The selection of particular metrics for noise analysis is based on the nature of the noise event and who or what is affected by the sound. For example, different noise metrics are used to evaluate the highest sound level occurring during a single event than those used for evaluating long-term average sound levels.

Wildlife perceive and react differently to impulsive and non-impulsive or continuous noise events depending on the level as measured in dB, frequency, and duration of the event. Because of the difference in response to these types of noise events, noise is assessed using several different noise metrics. Following are the noise metrics used in this analysis:

C-weighted dB (dBC) - sounds that are impulsive and contain significant low frequency energy, such as large caliber weapon firings or explosive detonations use a C-weighted scale that includes more of the low frequencies.

Day-Night Average Sound Level (DNL) – DNL is a federally recommended noise measure used for assessing cumulative sound levels that account for the exposure of all noise events in a 24-hour period. DNL is an average sound level, expressed in dB. DNL is related to compatible/incompatible land uses and does not directly relate to any singular sound event a person or animal may hear; it includes a 10-dB penalty for nighttime noise events. For the purpose of this analysis, daytime is defined as 7:00 a.m. to 10:00 p.m., and nighttime is 10:00 p.m. to 7:00 a.m. The 10-dB penalty accounts for the generally lower background sound levels and greater community sensitivity to noise during nighttime hours.

CDNL – For impulsive sounds, such as large caliber weapon firings or explosive detonations, that are measured using C-weighting, DNL is calculated using C-weighting and is expressed as CDNL. CDNL noise levels are shown as lines or contours on a map. The noise contours define noise level zones emanating from the noise source outward.

Peak 15 (meteorological) or Pk15(met) – Small caliber activity is addressed via peak noise levels for individual rounds (U.S. Army 2007). The metric Pk 15(met) is the single event peak level that is likely to

be exceeded only 15% of the time (i.e., 85% certainty the noise will be within this range). This metric accounts for statistical variation in received single event peak noise level that is due to weather or meteorological conditions. It is the calculated without frequency weighting (i.e., unweighted as opposed to A- or C-weighted).

For additional details on noise modeling methodology and computerized noise exposure models used in this analysis, please refer to the technical report, *Environmental Noise Assessment*, provided in the Supplemental Draft EIS.

5.2.2.3 Fort Pickett Baseline Noise Environment

The existing noise environment at Fort Pickett is dominated by impulsive noise events ranging from demolition/explosives testing, simulators, large caliber weapons firing, and small arms firing, and to a lesser extent, by non-impulsive noise including aircraft operations and vehicular traffic.

Some of the loudest munitions used by Fort Pickett include mortars (up to 120-mm high explosive) and Howitzer firings (up to 155-mm high explosive). Existing 105-mm Howitzer firings occur 565 times per year during the daytime and 63 times per year during nighttime hours at just one firing site. Fort Pickett conducts a high number of firings by multiple high caliber weapons. Details of Fort Pickett operations are provided in the *Environmental Noise Assessment* in the Supplemental Draft EIS.

The Fort Pickett baseline noise environment was based on the noise analysis conducted by the U.S. Army Public Health Command (USAPHC) (USAPHC 2011).

<u>Demolition and Large Caliber Weapons</u>

The baseline noise contours for demolition and large caliber weapons operations at Fort Pickett are shown in Figure 5-6.

<u>Firing Ranges (Small Caliber Weapons)</u>

All existing firing ranges at Fort Pickett are outdoor ranges. The contours are based on peak levels rather than a cumulative or average level; therefore, the number of rounds fired does not affect the noise level. The baseline noise contours for small caliber weapons operations at Fort Pickett are shown in Figure 5-7.

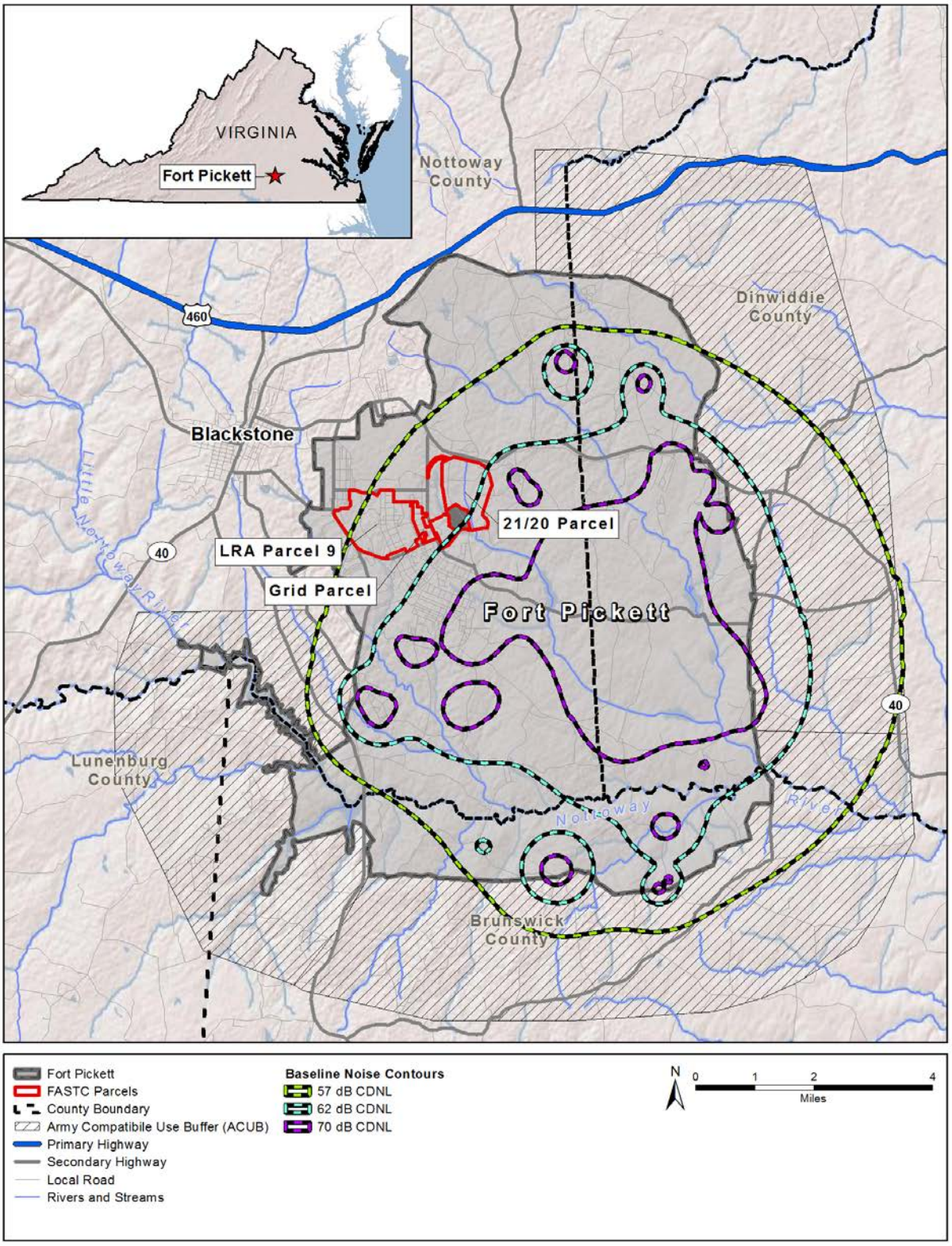

Figure 5-6. Baseline Demolition and Large Caliber Operations Noise Contours

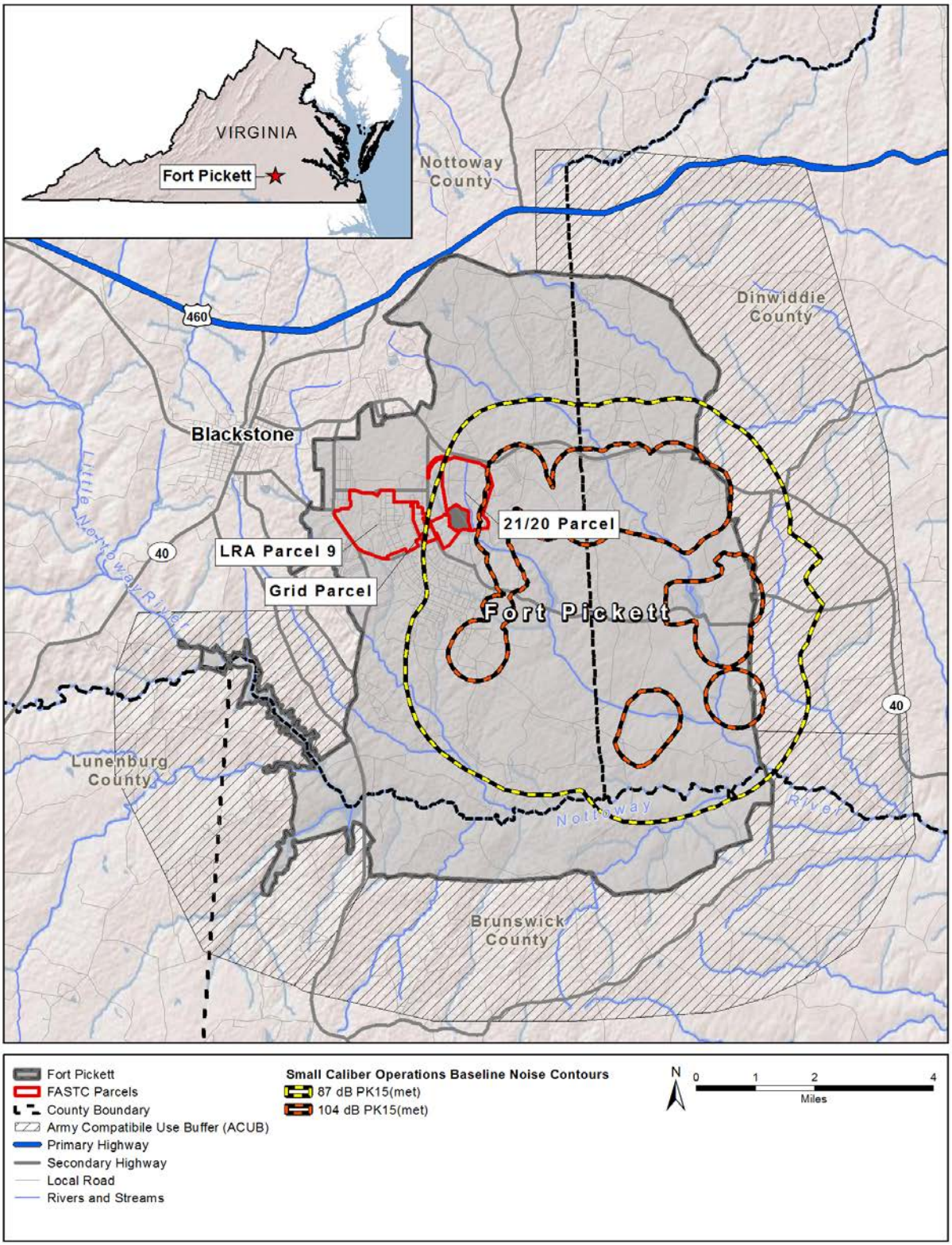

Figure 5-7. Baseline Small Caliber Operations Noise Contours

5.2.2.4 Proposed Action Noise Impacts

The Proposed Action assessed in this BA includes all of the same noise producing operations that were analyzed in the 2012 Draft EIS. All noise producing operations presented for the Proposed Action are the same types, numbers, and frequency as those originally modeled. The only changes in the firearms training range are the consolidation of firing ranges and a slight shift in some of the buildings. Because this analysis was conducted using peak sound levels, this shift does not alter the noise footprint. Therefore, the 2012 noise analysis represents the noise effects from the Proposed Action.

Construction

Construction of the proposed FASTC training facilities would occur between 2015 and 2020 and would generate noise impacts in the vicinity of the study area and along U.S. 460, Cox Road, and Military Road where construction vehicles would travel to/from the site. Construction activity would occur from 7 am to 5 pm, Monday-Friday.

Information regarding impacts of noise to NLEB is limited, so a brief discussion of potential impacts to wildlife resulting from construction noise is provided below. Increased vehicular traffic and human presence, as well as noise from construction, may temporarily displace wildlife species, causing them to expend additional energy. Construction activities that would temporarily increase noise levels within the project area include construction equipment operating at the sites and construction/delivery vehicles traveling to and from the sites. The reaction of a particular wildlife species to noise impacts could range from mild annoyance to panic and escape behavior. Behavioral responses to noise impacts also vary between species and between individuals due to a variety of factors such as age, sex, prior exposure, season, hearing sensitivity, reproductive status and season, time of day, behavior during the noise event, and the individual's location relative to the noise source. Other factors that influence an animal's response to noise include noise level and frequency, distance and event duration, equipment type and condition, frequency of events over time, slope, topography, and weather conditions (Delaney and Grubb 2003). In mammalian species, startle or fright is the immediate behavioral reaction to transient, unexpected, or unpleasant noise. Other mammalian behavioral reactions to noise include altered migration patterns, changes in the home range, and disruptions in mating behaviors. Even if proven significant, most of the effects of noise are mild enough that they may never be detectable as changes in population size or population growth against the background of normal variation (Bowles 1995). Many other environmental variables (e.g., predators, weather, changing prey base, ground based human disturbance) may influence reproductive success and confound the ability to tease out the ultimate factor in limiting productivity of a certain nest, area, or region (Smith et al. 1988). In contrast, the effects of other human intrusions near nests, foraging areas, dens, etc. (e.g., hiking, bird watching, timber harvesting, boating) are readily detected and substantial (US Forest Service 1992).

NLEB appear to be primarily impacted by noise while hibernating (USFWS 2013a, 2014d). The action area does not contain any known hibernacula. Therefore, noise impacts to hibernating NLEB as a result of construction activities for the Proposed Action are not anticipated.

The temporary increase in noise levels from construction-related activities may cause NLEB to avoid the area for day roosting in the vicinity of the construction activities. Testing of sounds for the Fort Leonard Wood training BA determined that sounds from operation of heavy equipment (bulldozers and earth movers) generated frequencies up to 20 kHz, with peak frequencies less than 0.125 kHz (3D/I, 1996).

Although bats may hear sounds generated from equipment and vehicles, peak sound energy is likely to be well below frequencies audible to bats (Montgomery Watson and 3D/I, 1998). However, suitable habitat adjacent to the area is abundant and impacts to NLEB as a result of this avoidance of the area are subsequently expected to be minimal.

Based on the above analysis and with implementation of proposed conservation measures (see Section 2.2), potential impacts to NLEB from noise associated with proposed FASTC construction activities may affect, but would not adversely affect the NLEB.

Operations – Explosives and Large Caliber Weapons

Where applicable, the noise results from proposed FASTC operations were compared (and combined) with the existing Fort Pickett baseline noise environment (USAPHC 2011). The results are combined because under the Proposed Action, the resulting noise environment would be both FASTC and Fort Pickett operations occurring simultaneously. To compare the results and determine the overall noise environment for the Proposed Action (Fort Pickett baseline + Proposed Action), the FASTC analysis uses noise assessment methodologies identical to those used by the USAPHC. There are no aircraft operations proposed for FASTC; therefore, aircraft noise was not analyzed and is considered only as part of the existing noise environment.

The study results show that the proposed FASTC training operations would not appreciably change the existing noise environment at Fort Pickett. There would be an increase in the overall number of explosive events heard, but the frequency of these additional events would be only approximately 1.2 additional explosive events per week. The second noticeable difference would be that peak noise levels would increase in the immediate vicinity of the northwest boundary of Fort Pickett (Figure 5-8). This is predicted to occur because the FASTC explosive pads would be located closer to the western boundary of Fort Pickett than the existing operations, even though the FASTC operations have a lower noise level compared to most of the high caliber Fort Pickett weapons.

The projected noise levels from proposed operations at the explosive ranges are mainly dominated by the higher yield FASTC demolition operations using 2-3 pound NEW charges. Day-to-day operations include 2,783 smaller (4.5 grams to 1½ pound) detonations that would occur annually, but noise levels due to these events would be limited to the local area and would not exceed current baseline noise levels. The use of 3-pound NEW demolition charges is expected to occur a total of only 18 times per year during the daytime, and the 2.23-pound NEW charges are expected to occur 36 times per year during the daytime. Therefore, the analysis presented below for peak noise reflects the *maximum scenario*, and day to day operations would, in actuality, generate much lower peak noise levels than represented in the following analysis. In addition, demolition charges generating the peak noise levels would be expected to occur a total of 42 times per year during the daytime, and day-to-day operations would normally generate lower peak levels than indicated. A complete list of operations proposed for the explosives ranges is provided in the Supplemental Draft EIS.

NLEB appear to be primarily impacted by noise while hibernating (USFWS 2013a, 2014d). The action area does not contain any known hibernacula. Therefore, there would be no impacts to hibernating NLEB as a result of the proposed demolition noise levels.

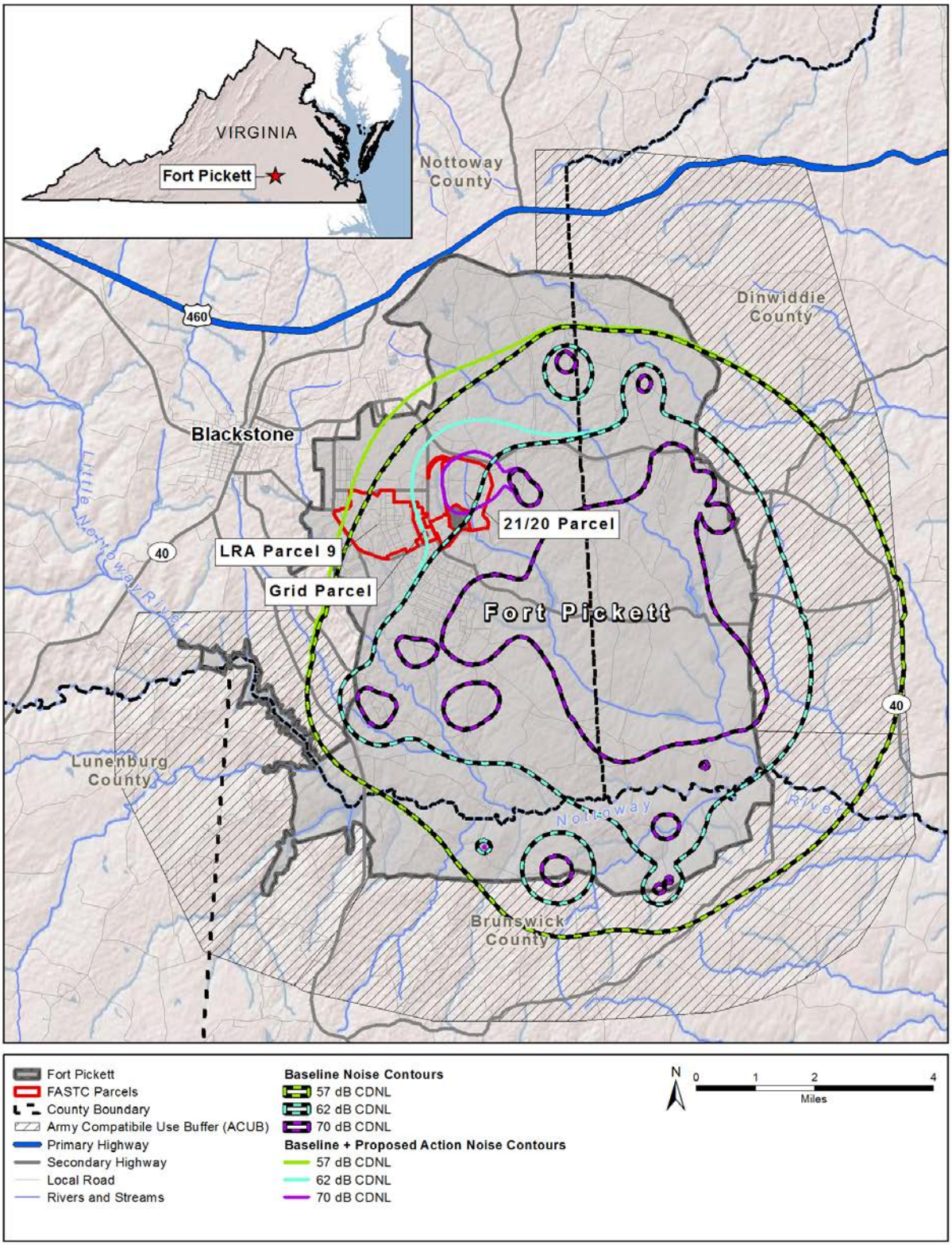

Figure 5-8. Baseline and Proposed Demolition and Large Caliber Operations Noise Contours

Operations – Firing Ranges (Small Caliber Weapons)

Under the Proposed Action there would be three small arms ranges, which include one existing outdoor range, proposed to be collocated on the existing Fort Pickett Range 8, one indoor/outdoor range, and one indoor range. These ranges accommodate small-caliber weapons such as shotguns, rifles, and pistols and would operate during the daytime only.

Small caliber weapons noise was evaluated for outdoor and indoor ranges separately using peak sound levels. The 300 meter outdoor firing range proposed for FASTC operations at existing Fort Pickett Range 8 would use a similar mix of weapons as are currently being used; therefore, peak noise levels would not change from the existing baseline conditions.

The firing ranges include several different types of structures. For the purpose of this analysis, it was assumed that the building construction of each range would be of the brick and mortar type. This type of building has a noise level reduction value of 25 dB provided on the exterior of the building. The noise level reduction value of the baffled indoor-outdoor range would be less.

Based on the noise modeling, proposed small-caliber weapons use under the Proposed Action would not change the existing noise environment at Fort Pickett. Estimated sound levels from proposed firing ranges would be similar to and contained within the existing noise contours at Fort Pickett.

5.2.2.5 NLEB Response to Military Operational Noise

Although the effects of military operational noise (e.g., explosions, weapons firing) has not been specifically assessed for the NLEB or specific to Fort Pickett, it has been studied for similar bat species at other installations, as summarized below.

- Results of investigation of the effects of sound at Fort Leonard Wood, Missouri suggest that sound generated by training events (simulated artillery and small-arms fire) do not startle, frighten, or cause bats to flee the area. Radiotelemetric monitoring of Indiana bats near active night training ranges at the Missouri facility indicates that bats do not avoid active ranges or alter foraging behavior during night-time maneuvers (USFWS 1998).
- Another radiotelemetry study at Fort Campbell, Kentucky observed a bat foraging and night-roosting in the same location near an Impact Area for three nights during low-altitude helicopter flights and artillery firing with no apparent behavior difference from nights with little or no military training (BHE Environmental, Inc. 2002).
- A Programmatic Biological Opinion refers to another investigation of the effects of sound at Fort Leonard Wood (USFWS 2010). This study found that military training event noise generated from simulated artillery and small-arms fire did not startle, frighten, or cause bats to flee the area. Also, it was found that that bats in areas repeatedly exposed to predictable loud noises eventually habituate to these stimuli over time.

Based on these studies, given the current noise within the action area and noise associated with the proposed FASTC training operations will not expose NLEBs to significantly greater type, intensity, or duration of sound than that of past or on-going training events on Fort Pickett, NLEB present in the action area have likely habituated to operational training noise. Therefore, based on the above analysis, potential impacts to NLEB from noise associated with proposed FASTC operations may affect, but would not adversely affect the NLEB.

5.2.3 Impacts from Increased Human Presence

The studies cited above in Section 5.4.2, *Noise Impacts*, suggest NLEB would habituate to any consistent impacts from increased human presence due to the proposed FASTC. The threat identified for NLEB in relation to human disturbance occurs if NLEB are disturbed during hibernation, because they may then use up their energy stores, causing them to not survive the winter or, in the case of females, not successfully produce offspring (USFWS 2013b). However, winter habitat has not been identified within the action area. Therefore, impacts to NLEB due to increased human presence would not be significant.

5.2.4 Collisions with Vehicles

While much documentation of road-kill mortality has focused on terrestrial mammals, birds, reptiles and amphibians, the impact of highways on bat populations has also been identified (Lesinski 2007; López et al. 2007; Russell et al. 2009; Lesinski et al. 2011). The percentage of bats in the sample of vertebrates killed on roads has varied between studies, but is generally been found to be less than 1% (Seibert and Conover 1991; Slater 2002; Smith and Dodd 2003; Glista and De Vault 2008; Gryz and Krauze 2008). Some studies indicate an underestimation of the number of recorded kills due to problems with searcher efficiency and carcass removal by scavengers (Slater 2002; Kunz et al. 2007; Arnett et al. 2008), which result in gross underestimates of mortality. *Myotis* species are small and carcasses may travel some distance when hit or may travel off site on the vehicle. If thrown into roadside vegetation, carcasses could be difficult to find and may be removed by scavengers.

Although the proposed FASTC includes a number of training venues for driver training on paved and unimproved roads, including off-road, the majority of these proposed training operations would not occur during the primary foraging period for NLEBs (dusk, night, dawn). Driver training operations would typically occur year round from 7 am to 10 pm; however, most operations would occur during daylight hours. The summer maternity season (April 15 – September 15) is the only period where there is a higher potential for bats to be present within the driver training areas, and therefore potentially susceptible to collisions with vehicles. Given the majority of driver training operations would occur outside the primary foraging time period, the potential for bat vehicle collisions is considered discountable.

5.2.5 Impacts from Introduction of Invasive Species

The movement and spread of invasive plant and animal species within the project areas would degrade habitat and potentially directly impact NLEB with implementation of the Proposed Action. Invasive species might be accidentally introduced to the area through construction of the facilities or shipment of supplies and equipment to the proposed facilities. Species that might be introduced or spread include various plants (i.e., Autumn olive, spear thistle, Nepalese browntop, Eastern red cedar, Johnsongrass, bushy bluestem, European privet, Japanese honeysuckle, sweetgum, Chinese bushclover, and posion ivy) that can degrade habitat by displacing native species and ultimately reducing food or important roosting habitat. To prevent potentially invasive species from being introduced into the area or spreading, all vehicles and other items during construction and operational phases of the Proposed Action would be inspected by the contractor prior to arriving on site. Fill material may be required to elevate various components of the project areas and would be sourced from onsite whenever possible. However, clean fill material could be sourced from the local region if needed. The successful implementation of specific invasive species control procedures would restrict the movement of invasive

species within the action area. Therefore, there would be no effect to NLEB due to the potential introduction of invasive species.

5.2.6 Gas, Fuel, Oil, or Solvent Spill Impacts

5.2.6.1 Hazardous Materials - Construction

Construction activities would require the use of hazardous materials. The majority of the hazardous materials expected to be used are common to construction activities and include diesel fuel, gasoline, and propane to fuel the construction equipment; hydraulic fluids, oils, and lubricants; welding gases; paints; solvents; adhesives; and batteries. The transport and use of hazardous materials has the potential to result in accidental spills that could adversely impact soil, surface, and groundwater adjacent to transportation routes or downgradient from the construction areas. Soils adversely affected by spills would be treated on-site or would be removed and disposed of in accordance with applicable Federal and State regulations. With the implementation of appropriate handling and management procedures, hazardous materials required for construction activities would have no significant impacts to the environment.

In accordance with the CWA, a construction stormwater discharge permit would be obtained and a SWPPP would be prepared and implemented prior to the commencement of construction activities. Every outdoor storage area where hazardous materials are proposed to be stored or staged during construction would be identified in the SWPPP and inspected on a recurring basis during the construction phase and until the permit is terminated.

Hazardous materials associated with construction activities would be delivered and stored in a manner that would prevent these materials from leaking, spilling, and potentially polluting soils, ground and surface waters and in accordance with applicable Federal, state, and local environmental and public and occupational health and safety regulations. Public transportation routes would be utilized for the conveyance of hazardous materials during construction. Transportation of all materials would be conducted in compliance with DOT regulations.

Hazardous materials would be stored in their original containers with their original product labels and would not be stored directly on the ground. These materials would be stored on pallets under cover and with secondary containment. Incompatible materials would not be stored together, and sufficient space would be provided between stored containers to allow for spill cleanup and emergency response access. Storage units would meet building and fire code requirements and would be located away from vehicle traffic. Storage instructions would be posted and construction employees would be trained in proper receiving, handling, and storage procedures. Material Safety Data Sheets for all materials stored on the site would be provided and available to all site personnel.

Hazardous waste would be generated during construction activities. Hazardous waste generated during construction activities would be expected to include empty containers, spent solvents, paints, sealants, adhesives, waste oil, spill cleanup materials (if used), lead-acid batteries from construction equipment, and various universal wastes (e.g., fluorescent bulbs, batteries). Other hazardous materials such as welding gases are expected to be consumed in their entirety and the empty gas cylinders returned to the suppliers. Construction contractors would be responsible for safely removing these construction-generated wastes from the FASTC areas and for arranging for recycling or disposal in accordance with applicable regulations.

The construction contractor would be (contractually) responsible for determining their regulatory status regarding hazardous waste generation (during construction, and obtaining and maintaining compliance) in accordance with Federal and state law and complying with the applicable regulations. With the implementation of appropriate handling and management procedures, hazardous wastes generated during the construction of the FASTC would have no significant impacts to the environment.

The storage and transport of hazardous waste has the potential to result in accidental spills that could adversely impact soil, surface, and groundwater adjacent to transportation routes or downgradient from the construction areas. Soils adversely affected by spills would be treated on site or would be removed and disposed of in accordance with applicable Federal and State regulations. Hazardous wastes associated with construction activities would be stored in a manner (per applicable regulations) that would prevent these materials from polluting soils, ground and surface waters and in accordance with applicable federal, state, and local environmental and public and occupational health and safety regulations. Individual contractors would be responsible for the safe and compliant collection, management and transport of their hazardous wastes to an offsite permitted Treatment, Storage, and Disposal facilities.

5.2.6.2 Hazardous Materials and Hazardous Materials Management - Operations

An increase in the use, generation, and storage of hazardous materials would be anticipated as a result of the operation of the proposed FASTC facility. The operation of the Parcel 21/20 FASTC facilities would require the use and storage of hazardous materials for training activities as well as for routine maintenance. The use of explosives has the potential to indirectly introduce residual contaminants, primarily nitroamines, to soil and groundwater where they may be toxic. The proposed explosives pads would be constructed with a sifted sand base, and there is potential for residual explosive compounds to travel off the pad with runoff or to infiltrate into groundwater (Kalderis et al. 2011). Plastic explosives such as C2, C4 and C6 would be detonated at the blast pads. The explosive component in these materials is cyclotrimethylene-trinitramine ($C_3H_6N_6O_6$), commonly called RDX or, less commonly, pentaerythritol tetranitrate (PETN). After detonation, residual particles of these substances may remain in the soils and dissolve slowly over time, resulting in a constant release of explosive compounds to groundwater and subsurface soil that could have adverse effects on the ecosystem (Kalderis et al. 2011). Potential impact minimization measures that would be considered include stormwater detention basins, manufactured BMPs, and the use of chemical amendments, such as lime, to increase the pH of the soil, which degrades the explosive compound and minimizes harmful effects (Kalderis et al. 2011).

FASTC operations would use products containing hazardous materials, including paints, solvents, oils, lubricants, acids, batteries, and cleaning compounds. Hazardous materials would be transported to the FASTC facility in accordance with U.S. Department of Transportation regulations for interstate and intrastate shipment of hazardous materials, as applicable, and would be managed in accordance with applicable Resource Conservation and Recovery Act and Occupational Safety and Health Administration regulations. Specific materials management plans would be developed to include strategies and procedures for storing, handling, and transporting hazardous materials in addition to responding to on-site or off-site spills. In addition, a Spill Prevention and Countermeasure Plan would be prepared in accordance with the Clean Water Act (CWA) and would outline proper management and spill response procedures for the oils and fuels stored at the facility. With the implementation of appropriate handling

and management procedures, hazardous materials required for operation of the FASTC facility would have no significant direct or indirect impacts to the environment or to NLEB.

5.2.6.3 Hazardous Waste and Hazardous Waste Management

An increase in the use, generation, and storage of hazardous wastes would be anticipated as a result of the operation of the proposed FASTC facility. Training vehicle maintenance, fuel storage and dispensing, and facility and grounds maintenance are among those activities that may generate hazardous wastes as a result of FASTC operations. The sources of hazardous waste include waste fuel, waste oils, spent solvents, paint waste, spill response materials, and used batteries. Hazardous wastes would be managed on-site in accordance with applicable federal, state and local regulations. Hazardous wastes would be prepared for transport in accordance with U.S. Department of Transportation regulations. Wastes would be disposed of at approved treatment, storage and disposal facilities and would be transported using appropriately licensed contractors. With the implementation of appropriate handling and management procedures, hazardous wastes generated by the operation of the FASTC facility would have no significant direct or indirect impacts to the environment or to NLEB.

Potential impact minimization measures that would be considered at the explosives ranges include the use of detention basins and manufactured BMPs (i.e., filtration systems) for stormwater control and treatment and/or chemical amendments, such as lime, to increase the pH of the soil, which would degrade harmful residual explosive compounds and minimize any potential harmful effects.

With implementation of all the above-listed measures for hazardous material and waste management, there would be no effects to NLEB due to hazardous materials and waste.

5.2.7 Night Lighting Impacts

As stated in Section 2.2, to maintain and blend with the character of the surrounding rural environment, site lighting will be designed to meet local or federal “Dark Sky” guidelines limiting nighttime light pollution and glare. Hooded lights will be used to the maximum extent practicable at all new roads and facilities within and adjacent to forest habitat. Therefore, with implementation of these night lighting procedures, impacts to NLEB would be avoided and minimized.

6.0 CUMULATIVE EFFECTS ANALYSIS

"Cumulative effects" under the ESA are those effects of *future* State, tribal, local, or private actions, *not* involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation (50 CFR 402.02). Most cumulative projects, as defined under the ESA, are presumed to impact NLEB if there is ground disturbance in or near the FASTC action area. However, cumulative effects can also be associated with noise from construction activities and operations and the time frame of habitat clearing.

Table 6-1 provides a list of relevant cumulative projects with construction areas and estimated forest impacts. Projects with limited available information were included to the extent practicable. In depth information was not reasonably available for all of the identified projects. Detailed descriptions of cumulative projects are found under Chapter 5, *Cumulative Effects*, in the Supplemental Draft EIS for FASTC.

Table 6-1. Relevant Cumulative Projects with Construction Areas and Estimated Forest Impacts

Project (Estimated Completion Date)[1]	*Site Development (acres)*	*Previously Disturbed*[2]	*Forested*	*Forest Impact (acres)*
Regional Training Institute Complex (2008-2011)	5	yes	no	0
Wonju Maneuver Corridor Expansion (2014)	138	partially	yes	138
Virginia State Police Driver Training and Target Practice Range Complex (2013-2015)	680	yes	partially	60
Switchgrass Biofuel Plant (2012)	1	unknown	unknown	1
Subtotal	**819**	**-**	**-**	**199**
FASTC Proposed Action (2015-2020)	468	partially	partially	365
Total Cumulative	**1,292**	**-**	**-**	**564**

Sources: VaARNG 2010, 2011; Nottoway County 2012; Virginia State Police 2012; Virginia Tech 2014.
Notes: 1. Cumulative projects under ESA include future State, tribal, local, or private actions, not involving federal activities.
2. Disturbed sites are those sites that have been previously developed. These sites may currently contain secondary growth forest and/or grassy areas. Undisturbed areas are predominantly forested.

When considered together, the cumulative projects when combined with the proposed FASTC would result in the development of approximately 1,292 acres of previously disturbed and undisturbed land in Nottoway County. According to a 2011 forest survey conducted by the U.S. Department of Agriculture Forest Service, there are approximately 146,581 acres of forested land in Nottoway County (Rose 2013). The cumulative loss of approximately 564 acres of forest would constitute a loss of less than 0.5% of forested land in Nottoway County. The majority of the development projects are located in previously developed areas or adjacent to currently developed areas. As a result, forest fragmentation would be minimized.

Permanent impacts to NLEB would result from habitat loss due to cumulative development of the area. Approximately 564 acres of forest habitat would be removed from the area and would no longer be available to NLEB. The re-vegetation strategies outlined in Section 2.2, *Proposed Conservation Measures to Avoid, Minimize and Compensate for Potential Effects to Listed Species*, would reduce cumulative impacts to NLEB habitat by preserving forest block connectivity to the extent practicable. The

preservation of these corridors would provide for movement between forested areas and would minimize impacts to NLEB by providing linkages between the larger forest blocks in the area.

Temporary impacts to NLEB could result from noise associated with construction and operational activities. The Regional Training Institute Complex, Wonju Maneuver Corridor Expansion, and Virginia State Police Driver Training and Target Practice Range Complex have already been constructed. The Switchgrass Biofuel Plant is currently under construction. Construction of the proposed FASTC training facilities would occur between 2015 and 2020 and would generate noise impacts in the vicinity of the study area and along U.S. 460, Cox Road, and Military Road where construction vehicles would travel to/from the site. Proposed FASTC training operations are predicted to generate limited additional noise exposure in the surrounding community beyond the existing noise from Fort Pickett operations. There would be an increase in the overall number of explosive events heard. But the frequency of these additional events would be only approximately 1.2 additional explosive events per week. Peak noise levels would increase in the immediate vicinity of the northwest boundary of Fort Pickett. This is predicted to occur because the FASTC explosive pads would be located closer to the western boundary of Fort Pickett than the existing operations, even though the FASTC operations have a lower noise level compared to most of the high caliber Fort Pickett weapons.

7.0 CONCLUSION

Based on the evaluation presented above, GSA has made the following determination of effects on ESA-listed and proposed species from implementation of the Proposed Action within the action area (Table 7-1). This BA is intended to support conferencing between GSA and the USFWS as required by 50 CFR 402.14(c) and section 7 of the ESA regarding the likelihood of an adverse effect ("take") of any proposed species.

Table 7-1. Summary of Findings for ESA-listed and Proposed Species under Jurisdiction of the USFWS

Common Name (Scientific Name)	*Status**	*Effects Determination*
Michaux's sumac	Endangered	No effect
Dwarf wedgemussel	Endangered	No effect
Roanoke logperch	Endangered	No effect
Northern long-eared bat	Proposed Endangered	May affect, is likely to adversely affect; will not result in jeopardy.

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APPENDIX A
Bat Acoustic and Mist Netting Surveys for the Proposed U.S. Department of State Foreign Affairs Security Training Center, Nottoway County, Virginia

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Bat Acoustic and Mist Netting Surveys for the Proposed U.S. Department of State Foreign Affairs Security Training Center Nottoway County, Virginia

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Adult male northern long-eared bat (*Myotis septentrionalis*)

Suggested citation:

St. Germain, M.J. 2014. Bat Acoustic and Mist Netting Surveys for the Proposed U.S. Department of State Foreign Affairs Security Training Center, Nottoway County, Virginia. Prepared by Conservation Management Institute, College of Natural Resources and Environment, Virginia Polytechnic Institute and State University, Blacksburg, VA for Cardno, Middletown, CT. October 31.

INTRODUCTION

The presence of federally threatened or endangered bat species within the action area of a proposed project can mean heightened regulatory scrutiny on resource utilization and development with the need for consultation with the U.S. Fish and Wildlife Service (USFWS) under section 7 of the Endangered Species Act (ESA). Additional population declines associated with white-nose syndrome (WNS) have heightened conservation concern for Indiana bats (*Myotis sodalis*) and other bat species in the U.S. (Ford et al. 2011; Francl et al. 2012). For example, due to the precipitous drop in northern long-eared bat (*Myotis septentrionalis*) (NLEB) numbers as a result of WNS, the USFWS has proposed to list the species as endangered under the ESA (USFWS 2013).

As bat population declines associated with WNS result in decreasing detection probabilities associated with traditional mist-net surveys, acoustical survey methods are moving to the forefront for initial bat surveys in terms of establishing species presence (e.g., the revised USFWS Indiana Bat monitoring guidance [USFWS 2014a]). Almost two decades of research has shown that acoustic sampling of bats can provide insights into species-specific broad-scale habitat associations including linkages to forest management activities as well as to fine scale micro-habitat correlates (i.e., canopy cover and riparian zone width) (Ford et al. 2005; Johnson et al. 2010a). These can be used for creating predictive models of bat species presence and relative abundance (as measured by echolocation activity) across the landscape (Ford et al. 2006; Johnson et al. 2010c). Using acoustic detection as the initial survey method will provide non-invasive insight into distribution and habitat utilization of bat species across the landscape.

Although acoustic surveys can provide much of the bat monitoring data needed by resource managers (Coleman et al. 2014), recording Indiana bat and now NLEB in the post-WNS landscape can still trigger the need for follow-up mist-net surveys. If either species is present, determination of day-roost characteristics such as tree and snag species, surrounding forest stand establishment history, structural condition, and disturbance history is warranted.

With the need for up to date species distribution information, the Conservation Management Institute (CMI) at Virginia Polytechnic Institute and State University (Virginia Tech) responded to a request for proposal provided by Cardno Government Services Division to conduct acoustical surveys for the NLEB at Fort Pickett and adjacent parcels in Blackstone, Virginia. Although surveys focused on the NLEB based on existing bat species distribution information (St. Germain 2008, 2012), and the presence of the Indiana bat is highly unlikely at Fort Pickett and Nottoway County, Virginia, it's occurrence is not wholly discountable.

The survey area was determined based on the project area as defined in the in-progress Supplemental Draft Environmental Impact Statement for the proposed Foreign Affairs Security Training Center (FASTC) at Fort Pickett and Nottoway County properties in Blackstone, Virginia. The project area is approximately 1,370 acres consisting of three parcels: Fort Pickett Parcels 21/20 and Grid, and Nottoway County LRA Parcel 9. The survey area also included the area of a proposed Tank Trail northwest of Parcel 21/20 and Fort Pickett Range 8 southeast of Parcel 21/20 (Figure 1).

METHODS

Survey protocols followed the *Northern Long-eared Bat Interim Conference and Planning Guidance* (USFWS 2014b), which references the *Range-wide Indiana Bat Summer Survey Guidelines* (USFWS 2014a) for sampling protocols. This approach utilizes acoustic techniques for the Phase 2 Summer Presence/Absence surveys. All survey activities were completed within the approved sampling period between August 1 and August 15 (USFWS 2014b).

Acoustic sampling was conducted in suitable NLEB habitat identified within each project parcel. The total amount of suitable summer habitat was estimated using available aerial photography and/or initial site visits. Efforts were focused in the areas where bat activity would likely be highest typically including flight corridors created by perennial road ruts and old logging trails, creeks, ponds, or other waterways, as well as potential foraging areas (e.g. forest clearings) (Kunz and Kurta 1988; Murray et al. 1999). Minimum spacing between sampling locations was 200 meters (m) (Figure 2.).

Acoustic sampling effort followed the guidelines for non-linear projects which require a minimum of 4 detector nights per 123 acres (0.5 square kilometers [km^2]) of suitable summer habitat (USFWS 2014a). Each sampling location consisted of one AnaBat detector (Titley Electronics, New South Wales, Australia). This unit was deployed in the field to collect bat calls for a minimum of 3-4 consecutive calendar nights at each location.

Acoustic analysis consisted of course screening for high frequency (≥35 kilohertz [kHz]) and *Myotis* calls through specific filters developed on Fort Pickett during previous studies (St. Germain 2008, 2012) within the AnalookW software (Corben 2012). Additional qualitative analysis was conducted using and Kaleidoscope Pro v2.0.7 (Wildlife Acoustics 2014), Bat Call Identification BCID v2.5c (Allen 2013, 2014), and Echoclass v3 (Britzke 2014) identification software.

Phase 3 mist net capture surveys were also conducted for NLEB. This process followed the processes outlined in USFWS (2014b). A minimum of 2 net arrays with varying lengths (6-12 m) and heights (single to triple high) were deployed. Acoustic and mist net surveys were conducted only under favorable weather conditions. Surveys were not conducted when ambient temperatures were below 50º Fahrenheit (F) (10º Celsius [C]) or during periods of sustained moderate or heavy winds (i.e., greater than 3 on the Beaufort Scale). Nets were opened at civil twilight and remained open for a minimum of 5 hours and checked continuously every 10 to 15 minutes (Gannon et al. 2007).

All bats captured were positively identified to species (Harvey et al. 1999) and assessed for signs of WNS by documenting soft-tissue damage, and/or wing damage using a wing damage index (Reichard 2010). Time of capture, age class (via wing-joint ossification and/or tooth wear), sex, reproductive condition, body mass (to the nearest 0.1 gram [g]), and the length of the forearm (in millimeters [mm]) were also recorded. Captured NLEB were fitted with a Virginia Department of Game and Inland Fisheries 2.9-mm aluminum forearm band.

Phase 4 radio tracking for captured NLEB was also conducted (USFWS 2014b). Individuals were fitted with a LB-2x (0.27 gram) radio transmitter for bats (Holohil Systems Ltd.) and released. Researchers attempted to relocate the radio-tagged individual the following day and record location information of roost trees identified (USFWS 2014a: Appendix D).

All captured animals were handled according to guidelines provided by the American Society of Mammalogists (Gannon et al. 2007). In addition, all survey protocols, handling methods, and qualifications of personnel have been reviewed and approved by the Virginia Tech Institutional Animal Care and Use Committee (IACUC #14-014 FWC) to insure compliance with applicable state and federal regulations, guidelines, and policies.

RESULTS

Phase 2 Presence/Absence Acoustic Surveys

Field surveys were conducted between August 1- 15, 2014. A total of 29 sites were surveyed with acoustical detectors August 1-5, 2014 for 4 consecutive nights and 5 additional sites were surveyed

August 5-8, 2014 for 3 consecutive nights. This resulted in a total of 34 sites with 131 detector nights (~1,310 detector hours) of Phase 2 survey (Table 1, Figure 2). A total of 35,596 acoustic files were collected and analyzed. Using Kaleidoscope Pro v2.0.7, Bats of North America v2.0.5, default filters, and sensitivity/accuracy settings, 12,621 calls were identified to the species level. These represented 9 species: Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), little brown bat (*Myotis lucifugus*), NLEB, Indiana bat (inconclusive), evening bat (*Nycticeius humeralis*), and eastern pipistrelle (*Perimyotis subflavus*) (Table 2). The NLEB was identified in 849 files across 30 sites. Analyzing the probability correct classification at 99% ($p \leq 0.01$) resulted in 10 sites where the NLEB was identified (Figure 3). The percent of NLEB acoustic calls identified by time of night is depicted in Figure 4.

At site PB1173, 75 acoustic call files were collected. Of these calls, 6 were indicative of Indiana bat (Kaleidocsope Pro 2.0.7 [p=2.5E-0.6]). All the collected call sequences were then reexamined from site PB1173 through Bat Call Identification (BCID) v2.5c, which identified 12 Indiana bat sequences and then through Echoclass v3, which identified 1 sequence. This might suggest possible presence but it is inconclusive at this time.

Phase 3 Presence/Absence Mist-net Surveys

On August 14, 2014, Phase 3 capture surveys were initiated at sites PB1440 and PB1173. At PB1140, 1 adult male NLEB was captured and banded on August 15 at 12:34 am (band #A56101; Figure 5) in addition to 4 eastern red bats and 4 big brown bats. No bats were captured at PB1173. Acoustic data were collected at this trap location concurrent with trapping. There were no Indiana bat calls collected during this time (results from all 3 programs).

Additional mist netting was conducted at site PB2017 on August 19, 2014 where 1 adult male NLEB was captured and banded on August 20 at 1:15 am (band #A56102; Figure 6) along with 7 eastern red bats, 5 big brown bats, and 1 evening bat. Neither of the captured NLEB had visible signs of WNS wing scarring.

On August 20, 2014, mist netting was conducted at site PB2449 with no captures (Table 3, Figure 3).

The NLEB captured at PB2017 was fitted with a radio transmitter and released. Although attempts were made to radiotrack the radio-tagged NLEB over the entire project site on August 20, 2014, no signals were picked up for 3 hours. On August 21, the search area was increased to include several adjacent training areas and the controlled access area, but no signals were picked up.

DISCUSSION

Indiana Bat

During acoustic surveys, between 1 to 12 calls were tagged as Indiana bat using the 3 USFWS-approved analysis programs. The use of automated programs for identifying large numbers of bat calls greatly reduces the amount of processing time compared to identifying each call manually and allows for standardization of acoustic identification. However, it must be noted that there is still an error rate associated with identification, especially, with the *Myotis* groups, where species call signatures are quite similar (Britzke et al. 2002). The maximum likelihood estimator statistic is not recommended to be used exclusively for the purpose of determining presence/absence of a species (Allen 2013):

> "These programs should not be considered 100% accurate. Using a maximum likelihood estimator, they produce a prediction of analyzed call files based on weighted call

> characteristics, each individual pulse within the files, characteristics of entire call sequences, and pairwise discrimination using Mahalanobis distance. The overall analysis is then used to determine the most likely bat that would produce the call sequence." (Allen 2013)

Bats can also produce different echolocation calls in different situations and habitats (Siemers 2002; Szewczak 2002). For example, the eastern pipistrelle can produce a call very similar to an Indiana bat when flying close to water (Allen 2013). Echolocation calls can change depending on how far a bat is flying from other objects in its vicinity, or how cluttered the environment is (Corben 2002).

This potential Indiana bat detection is derived from a small number of calls collected from a very cluttered sampling site. Though vegetative structure was not measured, based on a visual assessment of site PB1173, it is one of the most enclosed and cluttered sites sampled during the survey. This particular site is the remnants of an old tank trail through a closed canopy mature forest that consists of overgrown mid-story vegetation which is not passable by vehicles.

The Indiana bat has not been documented during previous studies on Fort Pickett (St. Germain 2008, 2012). In addition, Nottoway county Virginia is outside the known range for this species (Virginia Fish and Wildlife Information Service [VAFWIS] 2014). Caution must be warranted to guard against a false positive identification through acoustics alone.

<u>Northern Long-eared Bat</u>

The presence of NLEB has been documented acoustically and by physical capture within the project area. Identified call signatures were collected at several locations across the proposed project sites. In 2008, prior to the introduction of WNS in Virginia, the NLEB was widespread on Fort Pickett (St. Germain 2012). Current information regarding the species regional distribution outside the proposed FASTC project area is lacking.

The summer roosting ecology of *Myotis* utilizing forest habitats tends to show sexual segregation of male bachelor colonies and female maternity colonies (Menzel et al. 2001). Although the capture of a lactating female or juvenile NLEB within the project area in early August would indicate the potential presence of a maternity colony, neither female nor juvenile NLEB were captured during the current survey effort. Although two healthy adult male NLEB were captured on site, the presence of adult males does not necessarily indicate the presence of a maternity colony. Nonetheless, the relative abundance of acoustical detections of NLEB coupled with the captures might suggest the potential presence of a maternity colony (or presence of a post-maternity colony of volant juveniles and post-lactating adult females). A large proportion of calls collected at a site closer to dusk may indicate a close proximity to a roost tree. Roughly 10% of acoustic calls were collected were right at dusk, however, the majority were between 12 am and 3 am. This acoustic activity corresponds with timing of both our captures. It is difficult to draw conclusions regarding roosts from this data set. Therefore, the presence or absence of a NLEB maternity colony on the proposed project site is uncertain at this time.

NLEB maternity colonies preferentially use suppressed, mid-story sassafras (*Sassafras albidum*) and black locust (*Pseudoacacia robinia*) with cavities that occur in clumped abundance in mature forest stands on mid- to upper exposed slopes (Menzel et al. 2002; Silvis et al. 2012). Day roosts do not occur in isolation. Rather, NLEB maternity colonies form distinct multi-node social networks of many trees and linked individuals in the forested landscape (Silvis et al. 2014). These day roosts originated from what were either oldfield succession processes or stand-replacing regeneration events. Similar to Indiana bats, NLEB networks are tolerant of prescribed fire, readily use stands where fire decreases canopy cover and

increases snag density, and are tolerant of intermediate and mid-rotation disturbance (i.e., thinning or fire) (Johnson et al. 2009, 2010b, 2012). Recognition that NLEB (and Indiana bats) do not occur in single-tree colonies but in larger multi-tree aggregates will require species management approaches at the stand to multiple-stand level.

The forest stand characteristics of the proposed FASTC site and surrounding area are indicative of an intermediate, mid-rotation, and fire-maintained disturbance (Army National Guard-Mission Training Complex [ARNG-MTC] Fort Pickett 2014). While not specifically quantified, appropriate NLEB roosting habitat occurs within the proposed FASTC project area and the surrounding area of Fort Pickett. Although the occurrence of potential maternity roost sites would not likely be a limiting resource for NLEB within the FASTC project area, their occurrence may result in the need for conservation measures or mitigation to minimize potential impacts to NLEB populations.

ACKNOWLEDGEMENTS

I would like to thank Dr. W. Mark Ford, USGS Virginia Cooperative Fish and Wildlife Research Unit for assistance with analysis and comments on this report; Scott Klopfer, CMI at Virginia Tech, and Rick Spaulding, Cardno for manuscript edits; Rebecca Murray-Schneider, Eric Wolf and Caitlin Carey, CMI at Virginia Tech for assistance with data collection; Don Knight and William Ford, Fort Pickett Range Operations for coordination with site access; and Kathleen Hall, Cardno for project establishment.

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Table 1. Bat Sampling Location Characteristics and Effort on the FASTC Study Site, Blackstone, VA, August 2014

	Site	*Physiognomic Type*	*Micro Site*	*Date Set*	*Number of Nights Sampled*
	PB1159	Deciduous Forest edge	Behind building 100	8/1/2014	4
	PB1162	Forested Wetland	Stream	8/1/2014	4
	PB1170B	Deciduous Forest	Stream	8/5/2014	3
	PB1173	Deciduous Forest	Trail	8/1/2014	4
	PB1206	Forested Wetland	Emergent grasses	8/1/2014	4
	PB1207	Coniferous Forest edge	Road	8/1/2014	4
	PB1214	Deciduous Forest	Dry creek bed	8/1/2014	4
	PB1227	Mixed Forest	Interior	8/1/2014	4
	PB1243	Deciduous Forest edge	Open	8/1/2014	4
	PB1246	Deciduous Forest	Gas line	8/1/2014	4
	PB1248	Forested Wetland	Stream	8/1/2014	4
	PB1248B	Deciduous Forest edge	Open	8/5/2014	3
	PB1250	Deciduous Forest	Forest gap	8/1/2014	4
	PB1254	Grassland/Shrubland	Open	8/1/2014	4
	PB1254B	Forested Wetland	Stream	8/5/2014	3
	PB1257	Open Water	Dearing Pond	8/1/2014	4
	PB1429	Deciduous Forest	Trail	8/1/2014	4
	PB1440	Deciduous Forest	Trail	8/1/2014	4
	PB1440B	Deciduous Forest	Trail with rut	8/5/2014	3
	PB1443	Forested Wetland	dry creek bed	8/1/2014	4
	PB2002	Deciduous Forest	Trail	8/1/2014	4
	PB2015	Coniferous Forest	Road	8/1/2014	4
	PB2017	Deciduous Forest	Trail with rut	8/1/2014	4
	PB2412	Deciduous Forest	Trail	8/1/2014	4
	PB2422	Open Water	Butterwood pond	8/1/2014	4
	PB2433	Deciduous Forest edge	Road	8/1/2014	4
	PB2443	Deciduous Forest	Stream	8/1/2014	4
	PB2449	Mixed Forest	Trail	8/1/2014	4
	PB2450	Deciduous Forest	Trail with rut	8/1/2014	4
	PB2458	Coniferous Forest	Forest gap	8/1/2014	4
	PB2463	Deciduous Forest	Gas line	8/1/2014	4
	PB2481	Deciduous Forest	Trail	8/1/2014	4
	PB2488	Open Water	Compass Pond	8/1/2014	4
	PB2488B	Deciduous Forest edge	Road and power line	8/5/2014	3
Total	**34**				**131**

Table 2. Bat Species Acoustic Detections on the FASTC Study Site, Blackstone, VA, August 2014

Notes: Identifications provided through Kaleidoscope Pro v. 2.0.7, Bats of North America 2.0.5, default filters and sensitivity/accuracy settings and probability of misidentification at <99% ($p \leq 0.01$);
1= species was detected, 0 = not detected.

	Species								
Site	*Rafinesque's Big-eared Bat*	*Big Brown Bat*	*Eastern Red Bat*	*Hoary Bat*	*Little Brown Bat*	*Northern Long-eared Bat*	*Indiana Bat**	*Evening Bat*	*Eastern Pipistrelle*
PB1159	0	1	0	0	1	0	0	1	1
PB1162	0	0	1	0	1	0	0	0	1
PB1173	0	0	0	0	0	1	1*	0	0
PB1206	0	1	0	0	0	0	0	1	1
PB1207	0	1	0	1	0	0	0	1	1
PB1214	0	0	1	0	0	0	0	0	0
PB1227	0	1	0	1	1	1	0	0	1
PB1243	1	1	1	0	0	0	0	1	1
PB1246	1	0	0	0	0	0	0	0	0
PB1248	0	0	0	1	1	0	0	0	1
PB1248B	0	1	1	0	0	0	0	1	0
PB1250	0	0	0	0	0	0	0	0	1
PB1254	0	1	1	0	0	0	0	1	1
PB1254B	0	0	1	0	1	0	0	0	1
PB1257	0	1	1	0	0	0	0	1	1
PB1429	0	1	0	0	0	1	0	0	1
PB1440	0	0	1	0	1	1	0	0	1
PB1440B	1	1	1	0	1	1	0	0	1
PB2002	1	1	1	0	0	1	0	1	1
PB2015	1	1	1	0	0	0	0	1	1
PB2017	0	0	1	0	1	0	0	0	1
PB2412	1	0	0	0	0	1	0	0	0
PB2422	0	1	1	0	1	0	0	1	1
PB2433	0	1	1	0	1	0	0	1	1
PB2443	0	0	0	0	0	0	0	0	0
PB2449	1	1	1	0	0	1	0	1	1
PB2450	1	1	1	0	1	1	0	0	1
PB2458	0	1	0	0	1	0	0	1	1
PB2463	0	0	0	0	1	1	0	0	1
PB2488	0	0	0	0	0	0	0	1	1
PB2488B	0	1	0	0	0	0	0	1	1
Total Site Detections	**8**	**18**	**16**	**3**	**13**	**10**	**1***	**15**	**25**

Note: *Although occurrence of Indiana bat is highly unlikely, confirmation of this species is inconclusive; see *Discussion*.

Table 3. Bat Species Detections through Mist-net/Capture Sampling on the FASTC Study Site, Blackstone, VA, August 2014

		Species				
Site ID	*Date*	*Big Brown Bat*	*Eastern Red Bat*	*Northern Long-eared Bat*	*Evening Bat*	***Total Captures***
PB1440	8/14/2014	4	4	1	0	**9**
PB1173	8/14/2014	0	0	0	0	**0**
PB2017	8/19/2014	5	7	1	1	**14**
PB2449	8/20/2014	0	0	0	0	**0**
	Total Captures	**9**	**11**	**2**	**1**	**23**

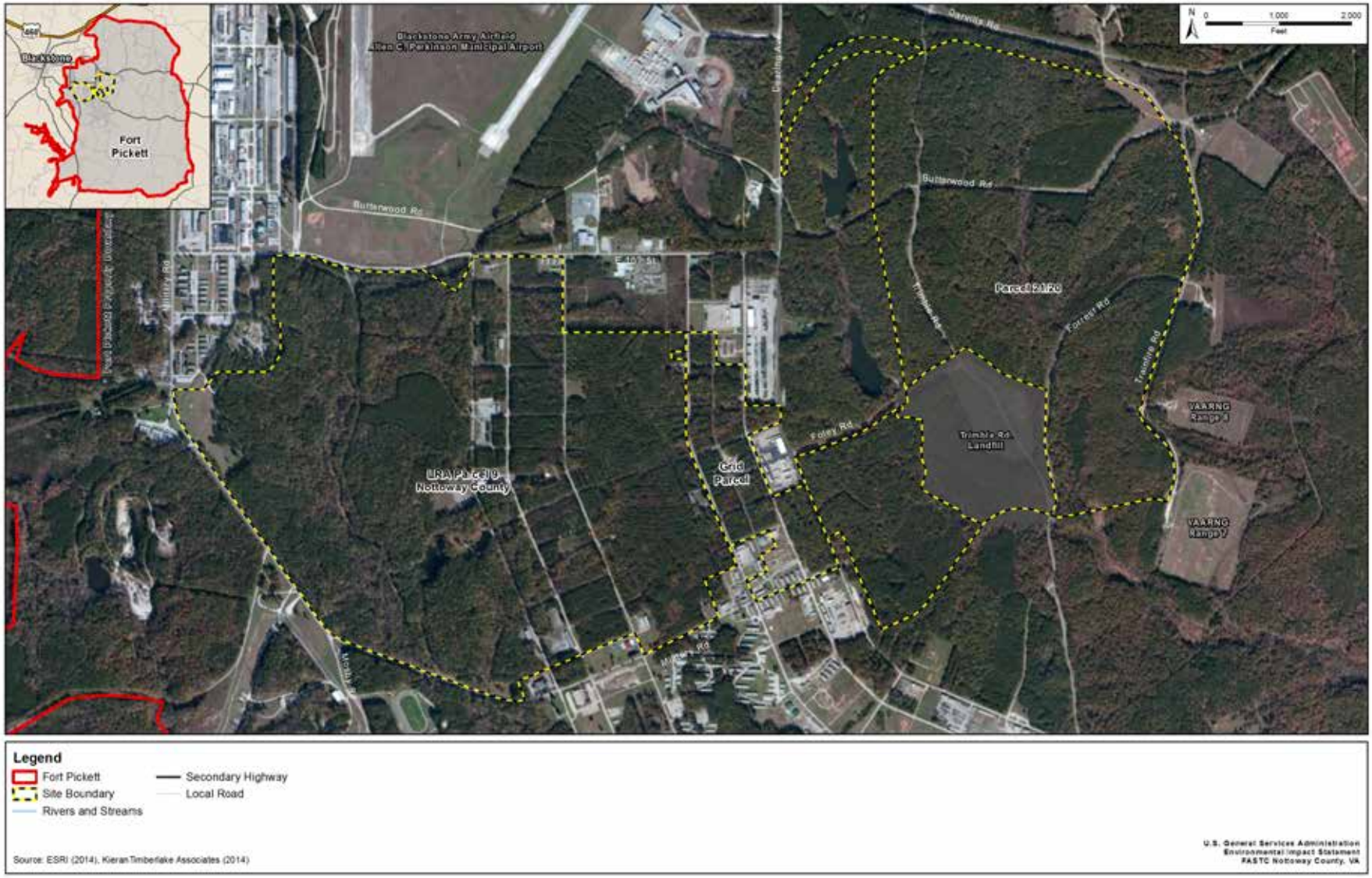

Figure 1.
Project Area and Bat Survey Area for the Proposed FASTC on Fort Pickett and Nottoway County Properties, Blackstone, VA

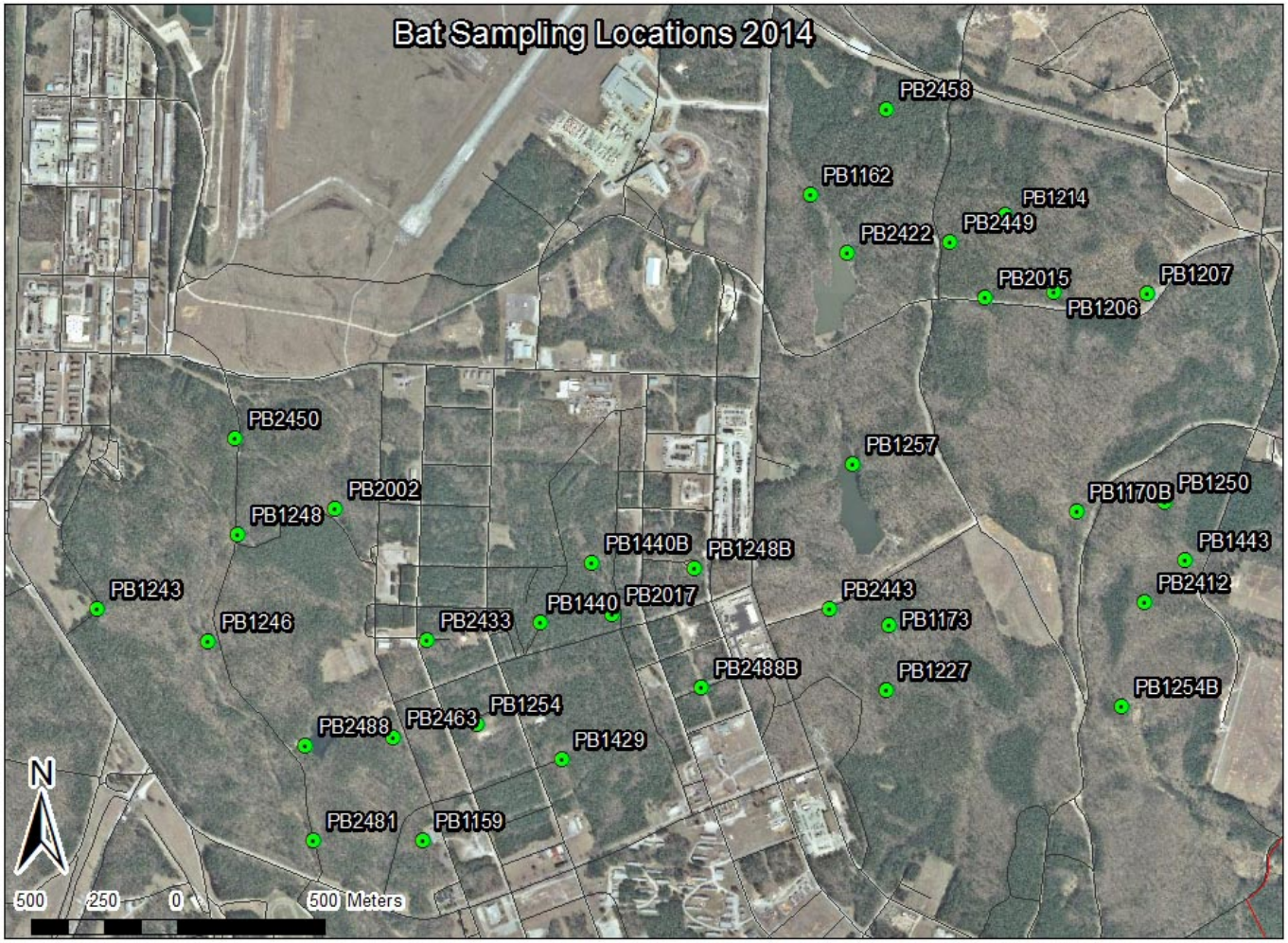

Figure 2.
Bat Sampling Locations for the Proposed FASTC on Fort Pickett and Nottoway County Properties, Blackstone, VA, August 2014

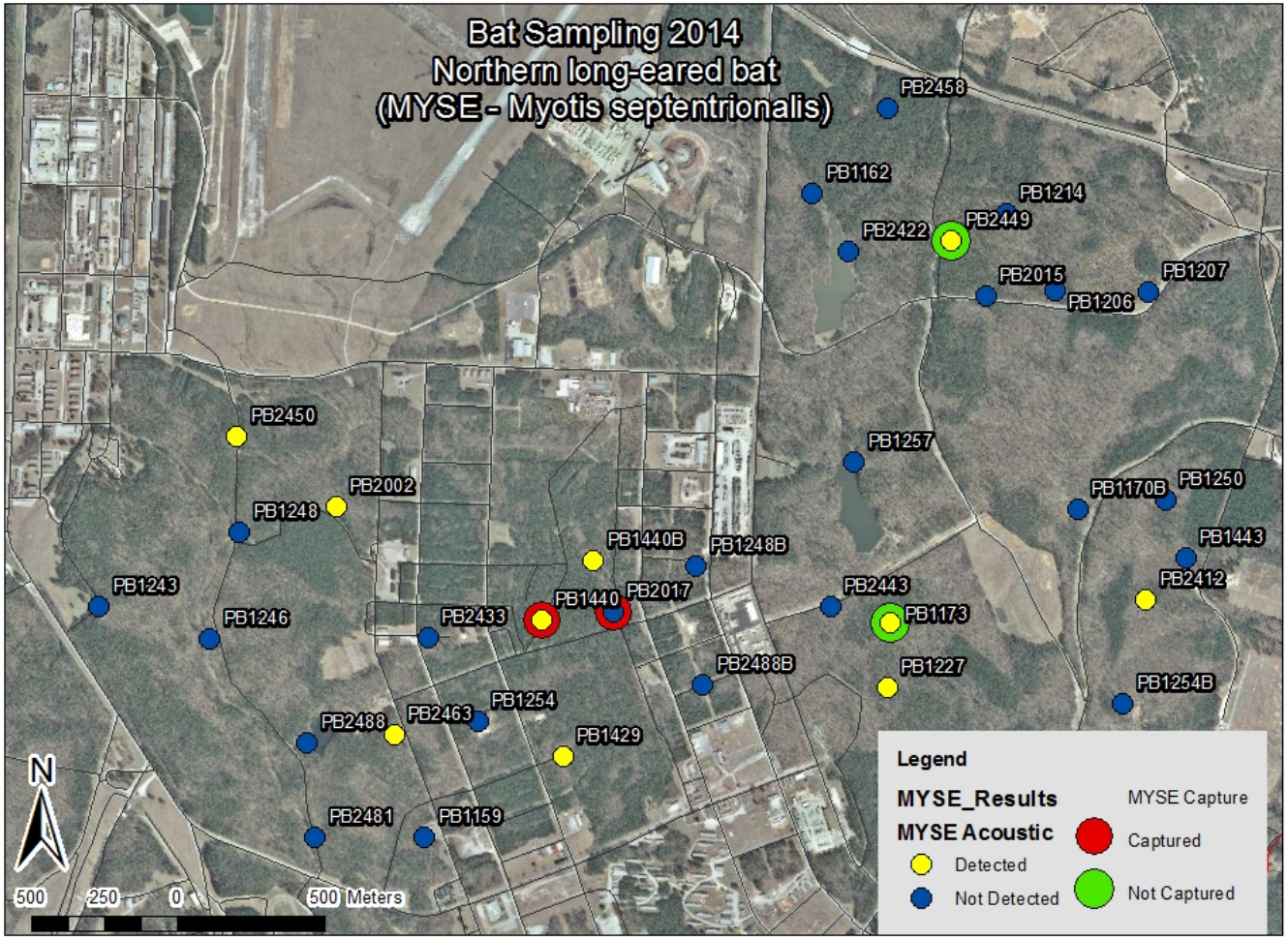

Figure 3.
Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*) (MYSE) Acoustic Detections and Captures on the Proposed FASTC on Fort Pickett and Nottoway County Properties, Blackstone, VA, August 2014

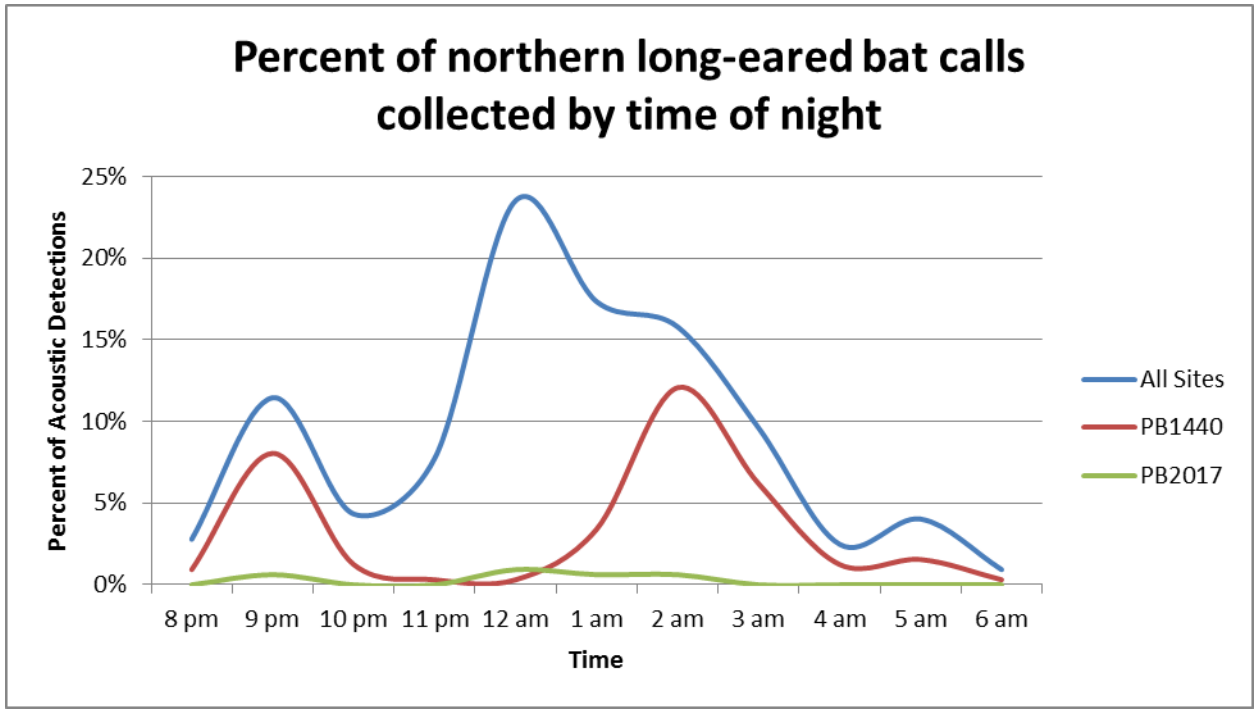

Figure 4.
Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*) (MYSE) Acoustic Detections by Time of Night on the Proposed FASTC on Fort Pickett and Nottoway County Properties, Blackstone, VA, August 2014.

Figure 5.
Male northern long-eared bat (NLEB) (*Myotis septentrionalis*){Tag# A56101} captured at the proposed FASTC on Fort Pickett and Nottoway County Properties in Blackstone, VA

Photo 1. Facial characteristics; Photo 2. Backlit wing showing age (adult) and lack of wing scarring; Photo 3. Side profile showing VDGIF aluminum forearm band; Photo 4 showing sex (male). The capture occurred at 00:34 am on August 15, 2014; the camera date time stamp was off by 1 hour thereby listing August 14 as the date.

Figure 6.
Male Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*){Tag# A56102} captured at the proposed FASTC on Fort Pickett and Nottoway County Properties in Blackstone, VA
Photo 1. Facial characteristics; Photo 2. Shows the affixed radio transmitter; Photo 3. Side profile showing VDGIF aluminum forearm band.

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APPENDIX B
Photographs of Sites with Acoustic Detections and/or Captures of NLEBs during August 2014 Surveys in Support of the Proposed FASTC Project

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Photographs of Sites with Acoustic Detections and/or Captures of NLEBs during August 2014 Surveys in Support of the Proposed FASTC Project

(Acoustic Detection)

(Acoustic Detection)

(Acoustic Detection)

(Acoustic Detection and Mist Net Capture)

(Acoustic Detection)

(Acoustic Detection)

(Acoustic Detection)

(Acoustic Detection)

(Acoustic Detection)

(Acoustic Detection)

(Mist Net Capture)

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

February 20, 2015

Mr. Myles Vaughan
NEPA Program Manager
U.S. General Services Administration
20 North 8th Street
Philadelphia, PA 19107-3191

Re: Foreign Affairs Security Training Center, Nottoway County, VA, Project # 2015-F-0446

Dear Mr. Vaughan:

This letter acknowledges the U.S. Fish and Wildlife Service's receipt of your December 23, 2014 letter requesting initiation of formal section 7 conference under the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended. The referenced action involves constructing a Foreign Affairs Security Training Center. The Northern long-eared bat (*Myotis septentrionalis*) is proposed for Federal listing as endangered and is likely to be adversely affected by the proposed action.

The construction will require clearing 406 acres of potential Northern long-eared bat roosting and foraging habitat. Approximately 393 acres of habitat will be cleared from October 1 through March 31, when the bats are not likely to be present. Approximately 9 acres of habitat will be cleared during summer months, when the bats will be present. All information required to initiate a conference was either included with your letter and Biological Assessment or is otherwise accessible for our consideration and reference.

Section 7 implementing regulations (50 CFR 402.14) provide the U.S. Fish and Wildlife Service up to 90 days to conclude formal conference and an additional 45 days to prepare our conference opinion, unless we mutually agree to an extension. Per previous conversations, the General Services Administration will be providing a draft conference opinion for our review and incorporation into a final U.S. Fish and Wildlife Service conference opinion. We anticipate the need for 5 business days to review the first submittal and an additional 15 business days to

incorporate the updated version into a final version. The final conference opinion shall be completed on or before May 5, 2015.

As a reminder, the Endangered Species Act requires that after initiation of formal conference, the Federal action agency shall make no irreversible or irretrievable commitment of resources that limits future options. This practice ensures agency actions do not preclude the formulation or implementation of avoidance and minimization measures or development of reasonable and prudent alternatives that avoid jeopardizing the continued existence of any proposed endangered or threatened species and/or destroying or adversely modifying proposed critical habitat.

If you have any questions, please contact Sumalee Hoskin of this office at (804) 824-2414, or via email at sumalee_hoskin@fws.gov.

Sincerely,

Cindy Schulz
Field Supervisor
Virginia Ecological Services

cc: VDGIF, Richmond, VA (Attn: Ernie Aschenbach)
VDNH, Richmond, VA (Attn: Rene Hypes)