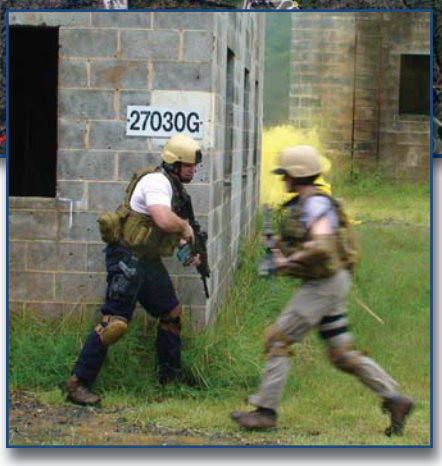
FOREIGN AFFAIRS SECURITY TRAINING CENTER
[FASTC]
An American Recovery and Reinvestment Act of 2009 Project

Supplemental Draft Environmental Impact Statement for U.S. Department of State Foreign Affairs Security Training Center Nottoway County, Virginia

January 2015



Prepared by: United States General Services Administration

In cooperation with:
United States Department of State
United States Army Corps of Engineers
United States Environmental Protection Agency
United States National Guard Bureau

Volume I of II

SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR FOREIGN AFFAIRS SECURITY TRAINING CENTER NOTTOWAY COUNTY, VIRGINIA

JANUARY 2015

Lead Agency:	U.S. General Services Administration (GSA)
Cooperating Agencies:	U.S. Department of State (DOS), U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and National Guard Bureau
Title of Proposed Action:	DOS Bureau of Diplomatic Security (DS), Foreign Affairs Security Training Center (FASTC) in Nottoway County, Virginia
Point of Contact:	Ms. Abigail Low, GSA Project Manager, 20 N. Eighth Street, Philadelphia, PA 19107 or FASTC.info@gsa.gov

Abstract

GSA has prepared this Supplemental Draft Environmental Impact Statement (EIS) to evaluate the environmental impacts of site acquisition and development of the DOS, Bureau of Diplomatic Security, FASTC at the Army National Guard Maneuver Training Center at Fort Pickett and Nottoway County's Local Redevelopment Authority area in Nottoway County, Virginia. The Supplemental Draft EIS incorporates by reference and builds upon the analyses presented in the published 2012 Draft EIS. The Supplemental Draft EIS addresses substantial changes to the proposed action that are relevant to environmental concerns and assesses any new circumstances or information relevant to potential environmental impacts. To achieve cost savings, DOS decided to reduce the scope of the program to include only "hard skills" training venues, which consist of high speed driving tracks, weapons firing ranges, mock urban environments, explosives ranges, and associated classrooms and administrative support functions. 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. The proposed FASTC is needed to improve training efficiency and provide priority access to training venues to meet increased demand for well-trained personnel. The Supplemental Draft EIS analyzes the direct, indirect, and cumulative impacts of the No Action Alternative and Build Alternative 3 with regard to climate, topography, geology, soils, water, biological and cultural resources, air quality, noise, land use and zoning, socioeconomics, traffic and transportation, recreation, utilities, public health and safety, visual resources, and hazardous substances. Build Alternative 3 was developed based on a 2014 Master Plan Update that incorporates the adjustments in the FASTC program and is the Preferred Alternative.

Comments on this Supplemental Draft EIS are due by: February 23, 2015, and may be submitted via the FASTC email address: FASTC.info@gsa.gov or mailed to: Ms. Abigail Low, GSA Project Manager, 20 N 8th Street, Philadelphia, PA 19107.

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EXECUTIVE SUMMARY

The United States (U.S.) General Services Administration (GSA) has prepared this document to supplement the *Draft Environmental Impact Statement (EIS) for Foreign Affairs Security Training Center, Nottoway County, Virginia, October 2012*. The 2012 Draft EIS analyzed the environmental consequences of two alternatives for acquiring land and developing a U.S. Department of State (DOS), Bureau of Diplomatic Security (DS) Foreign Affairs Security Training Center (FASTC) in Nottoway County, Virginia. The proposed location for FASTC, evaluated in the 2012 Draft EIS, is near the town of Blackstone in Nottoway County, Virginia. The proposed site is within the Army National Guard (ARNG) Maneuver Training Center Fort Pickett (Fort Pickett), which is operated by the Virginia Army National Guard (VaARNG), and in Nottoway County's Local Redevelopment Authority (LRA) area at Fort Pickett.

In early 2013, all efforts and work on the proposed site at Fort Pickett and Nottoway County's LRA area was put on hold pending additional due diligence and reviews at an existing federal training site in Georgia. As part of this due diligence effort, DOS conducted site visits to the Federal Law Enforcement Training Center in Glynco, Georgia. During this time period, DOS also assessed the scope and size of the FASTC project and determined a smaller platform was more fiscally prudent.

In April 2014, the earlier DOS selection of the proposed site for FASTC at Fort Pickett and Nottoway County was reaffirmed. Planning for the site resumed based on a reduced scope of requirements compared with the 2012 plan. The project would now proceed as a "hard skills" only facility, which consists of high speed driving tracks, weapons firing ranges, mock urban environments, explosives ranges, and associated classrooms and administrative support functions. Several hard skills training venues have been consolidated and reduced. Soft skills training, such as for technical security programs and information assurance programs, and life support functions, such as dormitories and dining facilities, have been eliminated from the program.

How has the project changed since 2012?

- Reduced scope to hard skills training only
- Site reduced from 4 parcels to 3 parcels
- Dormitories, dining facilities, and emergency services eliminated; services would be sought in local/regional area
- Venues consolidated or reduced in size
- Total building space reduced from 2.5 to 0.7 million square feet
- Staff reduced from 1,070 to 339
- Approximately 8,000 to 10,000 trainees annually remains the same

Based on adjustments made to the proposed FASTC scope of requirements, DOS prepared a Master Plan Update in 2014 that modifies the previous build alternatives evaluated in the 2012 Draft EIS. The Master Plan Update reduces the previous project development site from four parcels to three parcels: ARNG Parcels 21/20 and Grid Parcel, and Nottoway County LRA Parcel 9.

This Supplemental Draft EIS was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality (CEQ) regulations implementing

NEPA[1], the National Historic Preservation Act (NHPA) of 1966, as amended, and GSA's Public Building Service NEPA Desk Guide. NEPA requires supplements to environmental documents when "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns or if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."[2] This Supplemental Draft EIS incorporates by reference and builds upon the analyses presented in the 2012 Draft EIS[3], while focusing on new information about the proposed project.

GSA, as the lead agency, has prepared this Supplemental Draft EIS in conjunction with the following cooperating agencies: DOS, U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA), and the National Guard Bureau (NGB). The focus of this Supplemental Draft EIS is to analyze and assess the potential impacts of the updated FASTC proposal on the human and natural environment.

ES.1 Purpose and Need

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.

The proposed FASTC would fill a critical need, identified in the 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.

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.

The consolidated center would provide training for a diverse student population including personnel of foreign affairs agencies, DS special agents, Foreign Service officers, and select foreign law enforcement personnel. The proposed FASTC would provide training for approximately 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 (POR) and 2014 POR update, and to establish appropriate safety buffers and security perimeters. In addition to acquiring a property large enough to accommodate the full complement of required training elements, DOS also requires

[1] 40 Code of Federal Regulations (CFR) 1500-1508 (1986)
[2] 40 CFR 1502.9
[3] 40 CFR 1502.21

proximity to Washington, D.C., specifically a site within a four 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, avoid an official style, and respond positively to national urban and environmental policies. Private-sector professionals reviewed progress drafts of the Master Plan Update, participated in design review meetings throughout the planning process, and contributed recommendations for achieving Design Excellence guiding principles.

In addition to GSA design excellence, and in concert with design criteria for the proposed FASTC facilities, DOS developed the following six guiding principles for the Master Plan Update: quickly establish operational presence of hard skills training at Fort Pickett; facilitate the maximum utilization of available American Recovery and Reinvestment Act (ARRA) funding prior to the projected expiration date of September 30, 2015; support the transfer of complete courses; facilitate the reduction of the training footprint at existing leased facilities; during initial construction, enable training that supports DS's unique mission of conducting security operations in high-threat environments; and support limited Foreign Affairs Counter Threat (FACT) training in the first year of operation (2018).

ES.2 PUBLIC INVOLVEMENT

GSA published its Notice of Intent to prepare a Supplemental Draft EIS in the *Federal Register* on September 3, 2014. The notice was also published in six newspapers serving Blackstone and other communities in the vicinity of Fort Pickett.

GSA and DOS have and will continue to provide opportunities for the public to provide input about the proposed project. The first opportunity for formal public comment in the EIS process was during the 30-day public scoping period from October 4, 2011 to November 3, 2011 and at the public scoping meeting for the Draft EIS in October 2011. Comments received during the public scoping period for the 2012 Draft EIS were considered in the identification of key issues requiring analysis.

The second opportunity for formal public comment was the 45-day public comment period for the Draft EIS from October to December 2012. A public open house meeting was held in Blackstone, Virginia on November 7, 2012. All comments received during the Draft EIS comment period between October 26, 2012 and December 10, 2012 were addressed after the comment period and, if needed to respond to these comments, additional analysis was undertaken and revisions were made in this Supplemental Draft EIS. Comments were received from 6 individuals, 17 federal and state agencies, 2 Native American tribes, and 6 local and regional officials. The majority of comments received at the public meeting and submitted during the comment period focused on the beneficial effects the project would have on the community. State and federal agencies commented on environmental concerns, including groundwater, surface water, threatened and endangered species, noise, hazardous waste, vegetation, wetlands, wetland impact mitigation, stormwater management, and environmental justice. All comments on the 2012 Draft EIS, and GSA's responses to those comments, are provided in **Appendix K** of this Supplemental Draft EIS.

The third opportunity for public comment was the 30-day comment period following the September 3, 2014 publication of the Notice of Intent for the Supplemental Draft EIS. While there was no formal scoping meeting held for this Supplemental Draft EIS, GSA and DOS conducted outreach to update the public through community meetings and sent written notifications to individuals and groups previously expressing interest in the project. The fourth opportunity for formal public comment on the proposed action is during the 45-day comment period for this Supplemental Draft EIS. There is also a 30-day public review period following release of the Final EIS, estimated for spring 2015, and before the Record of Decision is signed and published. All comments on this Supplemental Draft EIS, as well as GSA's responses to the comments, will be incorporated into the Final EIS.

GSA and DOS have also worked closely with the local community and the Commonwealth of Virginia during various outreach meetings held between 2011 and 2015. GSA and DOS will continue to reach out to the public to ensure all interested persons are engaged throughout the EIS process. The public is encouraged to provide comments at any time through the project email: FASTC.info@gsa.gov.

ES.3 Proposed Action

The Proposed Action is the acquisition of land and the development of a consolidated DOS FASTC at Fort Pickett and LRA land in Nottoway County, Virginia. 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 VaARNG. LRA Parcel 9 would be purchased from Nottoway County.

Fort Pickett Parcels 21/20 and the Grid Parcel comprise approximately 549 acres and 74 acres, respectively. Nottoway County LRA Parcel 9 is 727 acres. The site also includes 12 acres between Parcel 21/20 and Dearing Avenue for the proposed relocation of an existing tank trail, and scheduled use of 19 acres at Fort Pickett Range 8. In total, the three parcels comprise 1,350 acres with an additional usage of 31 acres for a total project site of 1,381 acres contained within the boundaries of Fort Pickett. 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.

What does the Proposed Action include?

- Hard skills training
  - Driving Tracks
  - Mock urban environment
  - Indoor/outdoor firearms training
  - Weapons/explosives training
  - Simulation
  - Classrooms
  - Fitness Center
- Administrative Offices
- Emergency Response
- Federal facility design, construction, and security standards
- Certification through LEED Program

The proposed FASTC would be designed, built, and secured to federal standards, and the largest buildings would be certified through the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program through the incorporation of energy efficiency and reduction of waste, pollution, and environmental impacts. FASTC would train primarily DOS employees and other U.S. government employees. These individuals would include professional DS special agents, other DOS personnel, and the wider corps of U.S. diplomats and their families. A limited number of police and security professionals from countries in partnership with the

U.S. would also receive training at the proposed FASTC. FASTC would be a consolidated tactical training center for a rotating student population of approximately 8,000–10,000 annually. FASTC would be staffed, managed, and maintained by a total of 339 employees. 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, seven days a week, year round. An approximate 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. Student housing would not be included in the FASTC facility, and students would be transported by shuttles to and from hotels/motels in the local or regional area.

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.

What is the proposed project schedule?

- **2015 to 2020 – Construction**
- **2016 – Training 10% operational**
- **2018 – Training 90% operational**
- **2020 – Construction complete and FASTC fully operational**

Due to the size of the entire project, FASTC would be designed in five separate packages and constructed in three to five phases, depending on funding, over a five-year period. Construction of Package 1 would begin in the summer of 2015, prior to the expiration of ARRA funding in September 2015, and would consist of venues essential to the operation of 10% of the FASTC training program. Package 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. Construction of Packages 2 and 3 would begin in fall/winter of 2015/2016 and construction of Packages 4 and 5 would begin in fall/winter of 2016/2017. Construction of all phases would be complete and FASTC would be fully operational in 2020.

ES.4 Development of Alternatives

ES.4.1 Site Selection Process

Over a number of years, GSA and DOS have undertaken an extensive process in the search for a possible site for the proposed FASTC. Site alternative searches were undertaken in 1993, 2009, and 2010. Since 2010, site searches focused on federally owned or publically held lands in accordance with President Obama's 2010 directive that federal agencies try to use existing land and resources rather than purchasing or leasing new property. More than 70 alternative sites/locations were evaluated for their potential to meet the needs of the DS training program, while having the least impact on the environment. As a result of the evaluation process, GSA and DOS determined that only one site in Nottoway County, Virginia met the FASTC program requirements.

The build alternatives development process consisted of the following steps described in the sections below:

1. 2011 Range of alternative layouts on the Fort Pickett/Nottoway County site
2. 2012 GSA Design Excellence process and impact minimization
3. 2012 Build Alternative 1 and Build Alternative 2 evaluated in the Draft EIS
4. 2014 Build Alternative 3 evaluated in this Supplemental Draft EIS

ES.4.2 Alternatives Evaluated in the 2012 Draft EIS

During the development of alternatives, GSA and DOS developed approximately 14 alternative layouts or configurations of the project venues on the Fort Pickett/Nottoway County site that had potential to be functional according to the needs of the FASTC program and that would minimize potential impacts on natural resources and the built environment. The analysis culminated in two build alternatives that were presented to the public during the scoping period in October 2011.

In 2012, the GSA Design Excellence review process vetted the alternative layouts and resulted in revised alternatives including the addition of the Grid Parcel and LRA Parcel 10 to the proposed site. After technical studies were conducted for the EIS analysis, the range of alternative layouts was further developed to avoid impacts, including to wetlands and cultural resources. This process resulted in Build Alternative 1 and Build Alternative 2, which were evaluated in the 2012 Draft EIS. The 2012 Draft EIS also evaluated the alternative for taking no action on the project (No Action Alternative).

The 2012 build alternatives are summarized below**.** Build Alternatives 1 and 2 are no longer feasible because of the reduced scope of the Master Plan Update, and are eliminated from further evaluation in this Supplemental Draft EIS.

ES.4.2.1 2012 Draft EIS Build Alternative 1

Under Build Alternative 1, training would have occurred on Parcel 21/20 and LRA Parcel 9. A Main Campus (including dormitories and dining facilities), Firearms Training Ranges, and Explosives Ranges were proposed for Parcel 21/20. The location of the Explosive Ranges required the relocation of two existing primary tank routes, essential for maneuver training at Fort Pickett, to maintain the connection between Dearing Avenue and Trainfire Road. A Mock Urban Environment Area, High Speed Driving Tracks, Off-Road and Unimproved Road Driving Courses, and Emergency Services were proposed for LRA Parcel 9.

ES.4.2.2 2012 Draft EIS Build Alternative 2

Build Alternative 2 included two additional parcels as compared to Build Alternative 1: the Grid Parcel and LRA Parcel 10.

Build Alternative 2 was the preferred alternative in the 2012 Draft EIS and included all the FASTC program elements that were included in Build Alternative 1. The FASTC High Speed Driving Track and Off-Road/Unimproved Driving Course Areas, Firing Range Area, and Explosives Range Area were generally proposed to be located on the same sites as Build Alternative 1. The Main Campus was proposed for LRA Parcel 10, located west of LRA Parcel 9 on West Entrance Road. The Mock Urban

Environment Area would have been located on LRA Parcel 9 and the Grid Parcel. Several facilities associated with the High Speed Driving Tracks would have been located on the Grid Parcel.

ES.4.3 Alternatives Evaluated in this Supplemental Draft EIS

The alternatives evaluated in this Supplemental Draft EIS include the No Action Alternative and Build Alternative 3. Build Alternative 3 is generally based on 2012 Build Alternatives 1 and 2, with modifications developed in the 2014 Master Plan Update. Site layout alternatives for the proposed FASTC facilities were considered throughout the process of development of Build Alternative 3. Build Alternative 3 meets DS hard skills program requirements and represents the best layout for avoidance of environmental impacts. Build Alternative 3 is the Preferred Alternative of this Supplemental Draft EIS.

ES.4.3.1 No Action Alternative

The option of GSA taking no action to develop the proposed FASTC in Nottoway County or other locations is considered in the Supplemental Draft EIS. Under the No Action Alternative, the proposed FASTC would not be established and DOS would continue training operations at existing dispersed contracted and leased training facilities. The parcels of land at Fort Pickett and Nottoway County being considered for the Proposed Action would not be developed by GSA and DOS, and the existing land uses would remain.

The No Action Alternative would not fulfill the project purpose and need to consolidate training functions into a single location that would establish a new facility to meet the increased demand for well-trained personnel. DS would continue training at multiple geographically separated facilities around the country that do not adequately meet its current or future training standards. As such, DS training courses would continue to present conflicts with the primary federal agency users of these dispersed facilities and thus be subject to postponement or cancellation. The No Action Alternative would not fulfill the goals of the Presidential Memorandum of June 2010, Disposing of Unneeded Federal Real Estate, which calls for the elimination of leased operations and the consolidation of facilities.

The training of personnel under the current condition would not adequately meet increased DOS personnel needs for domestic or overseas staff and the few commercially available, specialized training venues that accommodate the training needs of DS would continue to be used.

The No Action Alternative provides a baseline for understanding the impacts of the proposed FASTC by providing a means for comparison of the current and future environmental conditions with or without the development of FASTC.

ES.4.3.2 Build Alternative 3

Compared with build alternatives presented in the 2012 Draft EIS, Build Alternative 3 eliminates much of the previously proposed main campus and living facilities and reduces the total size of the venues, but still achieves the functionality of the FASTC Hard Skills Training Program. The major differences of Build Alternative 3, as compared with 2012 Build Alternatives 1 and 2, are the locations of the administrative area (Core Area) and the consolidation, reduction, or elimination of several training venues and support facilities. The Core Area would be located on the Grid Parcel. The FASTC High Speed Driving Track and Off-Road/Unimproved Driving Course Areas would be located on LRA Parcel 9, and the Explosives

Training Environment and Firearms Training Environment would be located on Parcel 21/20, generally on the same sites as 2012 Build Alternatives 1 and 2.

Build Alternative 3 would require the clearing of approximately 406 acres of forest, grass, and shrubland. Existing vegetation would be preserved wherever possible and cleared areas would be re-planted with native plant communities where feasible.

Build Alternative 3 would require utilities infrastructure improvements. Build Alternative 3 water and wastewater requirements would tie into the town of Blackstone's existing facilities, and additional water and sewer lines would be required for Parcel 21/20 and LRA Parcel 9. New electrical transmission lines would be required on Parcel 21/20 and LRA Parcel 9, and a new separate primary power delivery system would be developed. Existing telecommunications infrastructure on LRA Parcel 9 and the Grid Parcel, including fiber optic lines and a fiber optic node, would be relocated. Site lighting would be designed to meet local or federal "dark sky" guidelines limiting nighttime light pollution and glare.

Under Build Alternative 3, primary daily access to the FASTC Core Area by the majority of trainees and employees would be from U.S. Route 460 to Military Road. Two options for access to the Core Area are evaluated under Build Alternative 3. Under Option 1, personally operated vehicles and shuttle buses would proceed through the Fort Pickett Main Gate to East 10th Street, Dearing Avenue, and to the FASTC Core Area loop road off Dearing Avenue. Secondary access to the Core Area for a small percentage of vehicles would be from U.S. Route 460 to U.S. Route 460 Business (North Main Street) to downtown Blackstone to Virginia (VA) Route 40 (Darvills Road) and Military Road through the Fort Pickett Main Gate to the Core Area. Alternatively, secondary access may also be via North Main Street through downtown Blackstone to South Main Street to West Entrance Road, with entrance to Fort Pickett and Military Road at the West Gate. With Option 2, primary access would be from U.S. Route 460 and Military Road to VA Route 40 to Dearing Avenue to the Core Area access loop road. Under Option 2, the existing closed Dearing Gate would be reconstructed as a functional access point. Secondary access under Option 2 would be the same as described for Option 1. Internal circulation would be from the Core Area to the Ring Road for accessing venues to the west on LRA Parcel 9 or from the Core Area loop road to Dearing Avenue to the Explosives and Firearms Training Environments on Parcel 21/20 via Foley Road.

ES.5 Preferred Alternative

Build Alternative 3 would meet the purpose of the Proposed Action by consolidating existing dispersed training functions into a single suitable location. Build Alternative 3 satisfies the need to meet the increased demand for well-trained security personnel.

Build Alternative 3 includes three site parcels (Parcel 21/20, Grid Parcel, and LRA Parcel 9) and several areas to be shared with the ARNG. Build Alternative 3 meets the need for a large site with sufficient developable land to construct all the FASTC program facilities with adequate safety and security buffers. 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. The Build Alternative 3 site plan provides an opportunity to reduce impacts to wetlands and vegetation as compared with the 2012 alternatives, maximize the use of site topography, and enable reuse of the

existing street grid and stream crossings on the Grid Parcel. Build Alternative 3 would also have beneficial economic and fiscal impacts in the town of Blackstone, Nottoway County, and the adjacent counties in the region.

Alternatives were vetted through GSA's Design Excellence Program to ensure that the project would be consistent with the guiding principles for the development of federal facilities. Build Alternative 3 would provide a connection and adjacency between LRA Parcel 9 and Parcel 21/20 through the Grid Parcel; this would promote functional efficiency and ensure compatibility of adjacent land uses.

Based on the ability of Build Alternative 3 to best meet the purpose and need of the Proposed Action while avoiding environmental impacts to the maximum extent feasible, Build Alternative 3 is the Preferred Alternative of this Supplemental Draft EIS.

ES.6 Environmental Consequences

Table ES-1 provides a summary of potential environmental effects from the proposed implementation of Build Alternative 3 and the No Action Alternative.

Build Alternative 3 would have direct and indirect adverse impacts to wetlands, streams, and forest. Following substantial avoidance efforts, and with planning and design impact minimization and mitigation measures, these impacts would not be significant. GSA has made an Endangered Species Act determination that the Proposed Action may affect the northern long-eared bat. A Biological Assessment is being prepared to support conferencing between GSA and the U.S. Fish and Wildlife Service (USFWS) on the determination of effects and conservation measures for minimizing adverse effects. The conclusions of the USFWS conference will be included in the Final EIS. Build Alternative 3 would have no adverse effects on state or other federal threatened or endangered species or result in takes, as defined under the Bald and Golden Eagle Protection Act. With proposed impact minimization measures, impacts to threatened and endangered species would not be significant under Build Alternative 3.

Build Alternative 3 would have beneficial socioeconomic impacts in the eight-county study area, centered on Nottoway County and including seven other adjacent counties in the region. This would be greatest in Chesterfield County where most personnel are expected to reside and economic output is expected to be the highest. Results of project-specific economic modeling indicate that during the peak of construction and early operations activities, there would be an estimated 1,711 FASTC related jobs created in the region. This is projected to occur in 2016 when approximately 1,633 jobs would be generated during construction. Full time operations would commence in 2020 and for that year and beyond, an estimated 783 jobs in the study area would be associated with Build Alternative 3. For total economic output, it is estimated that the proposed FASTC project would generate annual total dollars to the study area of $202,122,642 (2014 dollars) during the peak of construction with start-up operations during the year 2016. For full operations beginning in 2020 and beyond, annual total economic output would be an estimated $97,177,007. Annual revenues to Nottoway County would begin in 2016 with an estimated $46,619 while Chesterfield County would accrue $446,783 in 2016. During full operations in 2020 and annually thereafter, it is estimated that $446,783 in annual revenue would be generated in Nottoway County and $1,319.766 in Chesterfield County. The economic analysis indicated that business

growth may be stimulated by Build Alternative 3, including hotels or motels and food services, in the study area, particularly in the commercially zoned areas in the town of Blackstone and Nottoway County in proximity to the primary access routes.

GSA has determined that Build Alternative 3 would have no adverse effect on historic properties protected under the National Historic Preservation Act (NHPA). GSA is consulting with the State Historic Preservation Officer (SHPO) at the Virginia Department of Historic Resources (VDHR). Section 106 will be complete prior to the issuance of the Final EIS and Record of Decision, and the results will be included in the Final EIS.

Impacts to air quality from fugitive dust would be minimized by implementing BMPs such as periodic wetting of soils and various other dust control measures during FASTC construction and operation. Build Alternative 3 would have minor noise impacts in the northwest portion of Fort Pickett as a result of a minor increase in the frequency of peak explosive noise events, most noticeably in the area northwest of the Fort Pickett boundary.

Build Alternative 3 would not have significant adverse traffic impacts and would not impact the capacity of the Fort Pickett Main Gate during the a.m. or p.m. peak periods. Under Build Alternative 3 Option A, the turning lane analysis determined that the additional project traffic would result in the existing turning lane storage being less than VDOT design standards at one intersection. Under Option B, the turning lane analysis determined that the additional project traffic would result in the existing turning lane storage being less than VDOT design standards at three intersections. To address VDOT turning lane storage criteria, additional study by VDOT of potential turning lane improvements would be warranted.

Regarding the implementation of improvements, should VDOT determine they are warranted, GSA and DOS have no authority to fund or implement roadway improvements outside property boundaries. Intersection improvements would be under the jurisdiction of VDOT. Funding and implementation of improvements would have to occur through the appropriate Commonwealth of Virginia transportation organizations. Accordingly, state and/or local governments would determine whether improvements identified would be implemented.

Build Alternative 3 would have an adverse impact to recreational hunting access during the training schedule. Build Alternative 3 would have a moderate impact on utilities. The town of Blackstone maintains a water and wastewater treatment capacity reserve in the event Fort Pickett becomes fully mobilized. Total demand for potable water is not estimated to exceed the existing permitted capacity of the town of Blackstone water treatment plant. However, the existing permitted capacity of the wastewater treatment plant would not be sufficient to handle the projected cumulative flows from Build Alternative 3 and other reasonably foreseeable future projects under a full mobilization scenario.

Under the No Action Alternative, the proposed FASTC would not be constructed and no environmental impacts would occur. The projected beneficial economic impacts associated with the proposed FASTC would not be realized. Under the No Action Alternative, the traffic turning lane analysis concluded that in 2018, without the proposed project, two intersections will have turning lane storage that does not meet VDOT design criteria.

Table ES-1. Summary of Environmental Impacts of the Alternatives

Resource	No Action Alternative	Build Alternative 3 (Preferred Alternative)
Climate	No impact	**No impact**
Topography	No impact	**No significant impact** Minor localized changes
Geology and Soils	No impact	**No significant impact** Soil disturbance 400 acres No significant impacts on prime farmland
Water Resources	No impact	**No significant impact** Wetland impacts 5.72 acres (4.86 direct fill/0.86 clearing) Stream impact 2,489 linear feet 100-foot wetland buffer impacts 48 acres Permitting and mitigation reduce impacts to less than significant Net increase in impervious surface 138 acres Compliance with policies and regulations minimize impacts Net increases in stormwater runoff offset by mitigation; maintains predevelopment site hydrology No impacts to groundwater or floodplains
Biological Resources	No impact	**No significant impact** Vegetation clearing 406 acres (365 forest; 41 shrub/grass); restoration of 180 acres (87 forest) Temporary and minor permanent wildlife habitat impacts May affect northern long-eared bat; conservation measures would be implemented. USFWS conference conclusions pending and will be included in the Final EIS. No effect on other threatened or endangered species; USFWS concurrence received No “takes” of bald or golden eagles; USFWS concurrence received
Cultural Resources/NHPA	No impact	**No significant impact** No direct or indirect adverse effects on NRHP-eligible historic properties Consultation with the SHPO is ongoing
Air Quality	No impact	**No significant impact** Temporary and long-term increases in emissions No direct or indirect significant impact on local/regional air quality
Noise	No impact	**No significant impact** Short-term construction noise Long-term, minor operations noise increase Long-term, minor increase in peak noise events northwest of Fort Pickett border
Land Use and Zoning	No impact	**No significant impact** Adverse impacts to recreational land use Change in land use on LRA Parcel 9 from industrial to federal Consistent with Nottoway County Comprehensive Plan and town of Blackstone zoning

Table ES-1. Summary of Environmental Impacts of the Alternatives

Resource	No Action Alternative	Build Alternative 3 (Preferred Alternative)
Socioeconomics	No impact; no beneficial socioeconomic impacts	**No significant adverse impact** Beneficial socioeconomic impacts Mitigated displacement impacts No disproportionate impacts to environmental justice populations No disproportionate impacts to the health and safety of children
Traffic and Transportation	Turning lane storage less than VDOT design criteria in 2018, without proposed project: • Cox Road/Military Road • Darvills Road/Military Road	**No significant impact** Turning lane storage less than VDOT design criteria: • U.S. Route 460/Cox Road (Option A or B) • Darvills Road/Military Road (Option B) • Darvills Road/Dearing Avenue (Option B) No adverse impacts at Fort Pickett Main Gate or the West Gate
Recreation	No impact	**No significant impact** Adverse impact to recreational hunting access during training schedule (1,210 acres of hunting rea and 36 bow hunting tree stands) Minor impacts to other recreational resources No impacts on fishing activities Minor noise and light impacts at RV campground
Utilities and Infrastructure	No impact	**No significant impact** Demand for water, wastewater treatment, telecommunication, and electricity would not exceed existing capacities; however, adverse effect to wastewater treatment capacity may occur in the event of full mobilization of Fort Pickett
Public Health and Safety	No impact	**No significant impact** No adverse impacts on the police department Moderate potential for direct adverse impacts to fire emergency response times Minimal potential for impacts to public safety from training operations No direct or indirect impacts to environmental health No risk of transmission of notifiable diseases
Aesthetic and Visual Resources	No impact	**No significant impact** Minor changes to aesthetics and visual resources. Impacts would be minimized with forest buffers
Hazardous Substances	No impact	**No significant impact** Procedures would be in place for safe handling, use, and disposal of existing or introduced hazardous substances and waste during demolition, construction, and operations
Cumulative Impacts	No impact	**No significant impact** No or minor cumulative impacts to climate, topography, geology and soils, biological resources, cultural resources, air quality, noise, land use and zoning, visual resources, or hazardous materials and waste Moderate cumulative impacts to water resources, recreation, utilities, and public health and safety (fire response) Cumulative short-term construction traffic impacts Beneficial cumulative economic impacts

ES.7 Impact Minimization and Potential Mitigation

Avoidance and minimization of adverse impacts to natural, cultural, and other environmental resources were integrated into the build alternative to the greatest extent possible and practicable. However, adverse impacts may not always be completely avoided and/or minimized for a few resources of the natural and human environment, including wetlands, vegetation, traffic, and recreation. Mitigation measures for these resources were identified during the development of this Supplemental Draft EIS, and GSA would consider these measures as part of the decision-making process. **Table ES-2** summarizes these mitigation measures.

Table ES-2. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Supplemental EIS	Regulatory Mitigation	Other Mitigation under Consideration
Climate	• LEED Silver design standards for A01 and T01 improve building energy efficiency reducing greenhouse gas emissions	• None	• None
Topography, Geology and Soils	• Minimize grading and filling to extent feasible • Water application and other dust control measures during construction and operations • Vegetation and BMPs to minimize erosion	• CWA Sections 319 and 401 • VA Erosion and Sediment Control Program • VA Stormwater Management Program • VA Permit for Discharges of Stormwater from Construction Activities • Stormwater Pollution Prevention Plan (SWPPP)	• None
Water Resources	• Perpendicular stream crossings • Suitably sized culverts to maintain efficient peak flow • LID measures and stormwater BMPs • 100-foot wetland/stream buffer avoidance wherever feasible	• Energy Independence and Security Act • Maintenance of current stormwater runoff rates and volumes • CWA Sections 319, 401, and 404 • VA Erosion and Sediment Control Program • VA Stormwater Management Program • VA Permit for Discharges of Stormwater from Construction Activities • SWPPP • Wetland and stream impacts mitigation to include purchase of mitigation credits from mitigation bank and/or in lieu fee payment	• None
Biological Resources	• Avoid disturbance whenever possible • Treat disturbed edges • Re-establish approximately 180 acres of native plant communities including 87 acres of forest • Connect plant communities across larger areas • Compliance with federal dark sky lighting guidelines and conducting most vegetation clearing from October to April to avoid adverse effects to NLEB under the Endangered Species Act.	• CWA Sections 319, 401, and 404 • VA Erosion and Sediment Control Program • VA Stormwater Management Program • Maintain 660 foot forest buffer around bald eagle nest	• Avoid tree clearing during migratory bird nesting season to the extent feasible
Cultural Resources	• Avoidance of potential National Register of Historic Places-eligible archaeological sites • Simulator operations would not occur within 656 feet of the Officers Club	• NHPA Section 106 compliance	• Additional Phase II if future project design results in potential impacts to Sites 44NT0210, 44NT0212, 44NT0219, 44NT0220, 44NT0221, or 44NT222
Air Quality	• Various dust control measures	• None; project area is in attainment	• None

Table ES-2. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Supplemental EIS	Regulatory Mitigation	Other Mitigation under Consideration
Noise	• Maintenance of vegetative buffers • Limit construction activity to daytime weekday hours to the extent feasible • Simulator operations would not occur within 656 feet of the Officers Club	• OSHA approved hearing protection	• Public notice prior to peak noise events
Land Use and Zoning	• Locate facilities to be compatible with adjacent land use • Limit dust and glare in airfield zones to avoid impacts to air navigation	• U.S. Army clear zone and accident potential zone compliance • Submit Form 7460 to FAA for formal determination of compatibility with air navigation	• None
Socioeconomics	• Security gates/Signage	• Uniform Relocation Assistance and Real Property Acquisition Policies Act	• Joint effort of GSA's Urban Development/Good Neighbor program and USEPA's Community Assistance and research expertise will coordinate with and assist local officials and planners in preparing for FASTC-related economic effects. • Notification of daycare center prior to peak noise events
Traffic and Transportation	• Use of shuttle buses to reduce vehicle trips	• Coordination with VDOT and Nottoway County in abandonment of existing roads on LRA Parcel 9 • An access permit from VDOT would be required for the establishment of the access gate on Dearing Avenue under Option B.	• Travel demand management to improve circulation at the Core Area • Turning lane storage improvements at 5 intersections by the jurisdictional authority if funding is available
Recreation	• Hunting open when no training occurring	• None	• None
Utilities and Infrastructure	• Construction in existing or proposed roadways and utility corridors • Water demand reduction techniques	• Pollution Prevention Act • Source reduction measures • Executive Order 13101 Greening the Government through Waste Prevention, Recycling, and Federal Acquisition • Recycling Policies	• None

Table ES-2. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Supplemental EIS	Regulatory Mitigation	Other Mitigation under Consideration
Public Health and Safety	• Gates and signage • GSA Facilities Standards for Public Buildings • U.S. Visa immunization and health requirements • Containment on site of all training – explosives, small arms munitions, and cars on driving tracks	• Oil Pollution Act • Spill Prevention, Control and Countermeasures Plan • Hazardous materials/waste management regulations (CERCLA, RCRA, TSCA, Oil Pollution Act, Pollution Prevention Act) • Compliance with Hazardous Materials Management Regulations • Compliance with Hazardous Waste Management Regulations • Adherence to Land Use Controls	• None
Aesthetic and Visual Resources	• Vegetative buffers	• None	• None
Hazardous Substances	• Disposal of existing or introduced hazardous substances and waste during demolition, construction, and operations in accordance with regulations • Address all known release areas or areas of potential environmental and/or human health risk requiring further investigation according to 2013 Phase III Risk Management and Remediation Plan and real estate agreements.	• Oil Pollution Act • Spill Prevention, Control and Countermeasures Plan • Hazardous materials/waste management regulations (CERCLA, RCRA, TSCA, Oil Pollution Act, Pollution Prevention Act) • Compliance with Hazardous Materials Management Regulations • Compliance with Hazardous Waste Management Regulations • Adherence to Land Use Controls	• Manufactured BMPs (filtration systems) • Soil amendments for leachate treatment
General Management	• Monitor mitigation measures to ensure benefits are realized • Monitor potential environmental impacts of final project design; perform additional impact analysis and NEPA documentation for any potentially significant impacts not included in Supplemental EIS		• Establish community liaison/outreach program

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ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ACMs	asbestos-containing materials
ACUB	Army Compatible Use Buffer program
APE	area of potential effects
APZ	accident potential zone
ARNG	Army National Guard
ARRA	American Recovery and Reinvestment Act
AST	above ground storage tank
BABS	Blackstone Area Bus System
BLS	Bureau of Labor Statistics
BMPs	best management practices
BRAC	Base Closure and Realignment
CAA	Clean Air Act
CDNL	C-weighted day-night average sound level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
CZ	clear zone
dB	decibels
dBA	A-weighted decibel scale
dBC	C-weighted decibel scale
dBP	peak sound pressure level
DCR	Virginia Department of Conservation and Recreation
DMM	discarded military munitions
DNL	day-night average sound level
DoD	U.S. Department of Defense
DOF	Virginia Department of Forestry
DOS	U.S. Department of State
DS	Bureau of Diplomatic Security
EA	Environmental Assessment
EBS	environmental baseline survey
EIS	Environmental Impact Statement
EO	Executive Order
ESA	environmental site assessment
ESQD	explosive safety quantity distance
°F	degrees Fahrenheit
FACT	Foreign Affairs Counter Threat
FASTC	Foreign Affairs Security Training Center
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
Fort Pickett	ARNG Maneuver Training Center Fort Pickett
FPPA	Farmland Protection Policy Act
FTE	full-time equivalent
FWPCA	Federal Water Pollution Control Act
GHG	greenhouse gases
gpd	gallons per day
GSA	U.S. General Services Administration
GWP	global warming potential
HAPs	hazardous air pollutants
HUC	hydrologic unit code
IED	improvised explosive device
IMPLAN	Impact Analysis for Planning
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
lf	linear feet
LID	low impact development
LOS	level of service

LRA	Local Redevelopment Authority
LUC	land use controls
LUPZ	land use planning zone
MBTA	Migratory Bird Treaty Act
mg/l	milligrams per liter
mg/m^3	milligrams per cubic meter
MOU	Memorandum of Understanding
MC	munitions constituents
mgd	million gallons per day
MMRP	Military Munitions Response Program
MPPEH	material potentially presenting an explosive hazard
MSATs	mobile source air toxics
MTBE	methyl tertiary butyl ether
NAAQS	National Ambient Air Quality Standards
N/A	not applicable
NEPA	National Environmental Policy Act
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NEW	net explosive weight
NGB	National Guard Bureau
NHPA	National Historic Preservation Act
NLEB	northern long-eared bat
NOI	Notice of Intent
NO_2	nitrogen dioxide
N_2O	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
pCi/L	picocuries per liter
PEM	palustrine emergent
PFO	palustrine forested
PK15(met)	peak noise exceeded 15% of time caused by weather
PK50(met)	peak noise exceeded 50% of time caused by weather
PM	particulate matter
$PM_{2.5}$	fine particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	suspended particulate matter less than or equal to 10 microns in diameter
POL	petroleum, oil, and lubricants
POR	Program of Requirements
ppm	parts per million
PSS	palustrine scrub-shrub
RCRA	Resource Conservation and Recovery Act
RSLs	regional screening levels
SARA	Superfund Amendments and Reauthorization Act
sf	square foot/feet
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SWPP	Stormwater Pollution Prevention Plan
TMDL	total maximum daily load
TPY	tons per year
TSCA	Toxic Substances Control Act
µg/L	micrograms per liter
µg/m3	micrograms per cubic meter
µg/sf	micrograms per square foot
U.S.	United States
USACE	U.S. Army Corps of Engineers
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAPHC	U.S. Army Public Health Command
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

USGS	U.S. Geological Survey
UST	underground storage tank
UXO	unexploded ordinance
VA	Commonwealth of Virginia
VaARNG	Virginia Army National Guard
VAC	Virginia Administrative Code
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VDHCD	Virginia Department of Housing and Community Development
VDHR	Virginia Department of Historic Resources
VDMA	Virginia Department of Military Affairs
VDOT	Virginia Department of Transportation
VOC	volatile organic compound
VSP	Virginia State Police
WWTP	wastewater treatment plant

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CHAPTER 1 PURPOSE AND NEED

1.1 INTRODUCTION

The United States (U.S.) General Services Administration (GSA) has prepared this document to supplement the *Draft Environmental Impact Statement (EIS) for Foreign Affairs Security Training Center, Nottoway County, Virginia,* dated October 2012. The 2012 Draft EIS analyzed the environmental consequences of two alternatives for acquiring land and developing a U.S. Department of State (DOS), Bureau of Diplomatic Security (DS) Foreign Affairs Security Training Center (FASTC) in Nottoway County, Virginia. The proposed location for FASTC, evaluated in the 2012 Draft EIS, is near the town of Blackstone in Nottoway County, Virginia. The proposed site is within the Army National Guard (ARNG) Maneuver Training Center Fort Pickett (Fort Pickett), which is operated by the Virginia Army National Guard (VaARNG), and Nottoway County's Local Redevelopment Authority (LRA) area at Fort Pickett (**Figure 1.1-1**).

What is GSA Proposing?

To acquire land and develop a DS Foreign Affairs Security Training Center that would establish a consolidated hard skills training center for DS law enforcement and security personnel.

In early 2013, all efforts and work on the proposed site at Fort Pickett and Nottoway County's LRA area was put on hold pending additional due diligence and reviews at an existing federal training site in Georgia. As part of this due diligence effort, DOS conducted two site visits to the Federal Law Enforcement Training Center in Glynco, Georgia. During this time period, DOS also assessed the scope and size of the FASTC project and determined a smaller platform was more fiscally prudent.

In April 2014, the earlier DOS selection of the proposed site for FASTC at Fort Pickett and Nottoway County was reaffirmed. Planning for the site resumed based on a reduced scope of requirements compared with the 2012 plan. The project would now proceed as a "hard skills" only facility, which consists of high speed driving tracks, weapons firing ranges, mock urban environments, explosives ranges, and associated classrooms and administrative support functions. Several hard skills training venues have been consolidated and reduced. "Soft skills" training, such as for technical security programs and information assurance programs, and life support functions, such as dormitories and dining facilities, have been eliminated from the program. Based on adjustments made to the proposed FASTC scope of requirements, DOS prepared a Master Plan Update in 2014 that modifies 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, shown in **Figure 1.1-2**: ARNG Parcels 21/20 and Grid Parcel, and Nottoway County LRA Parcel 9.

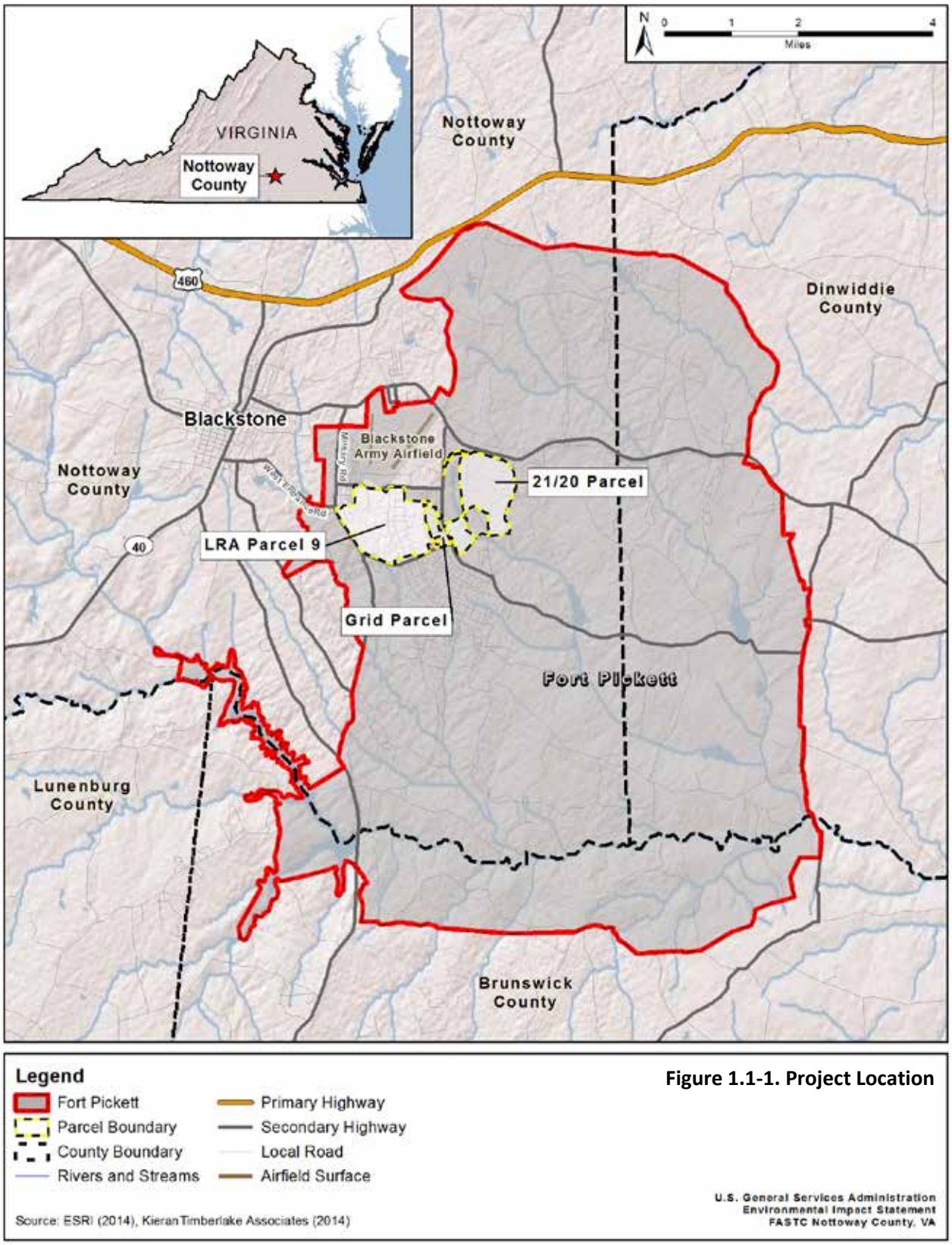
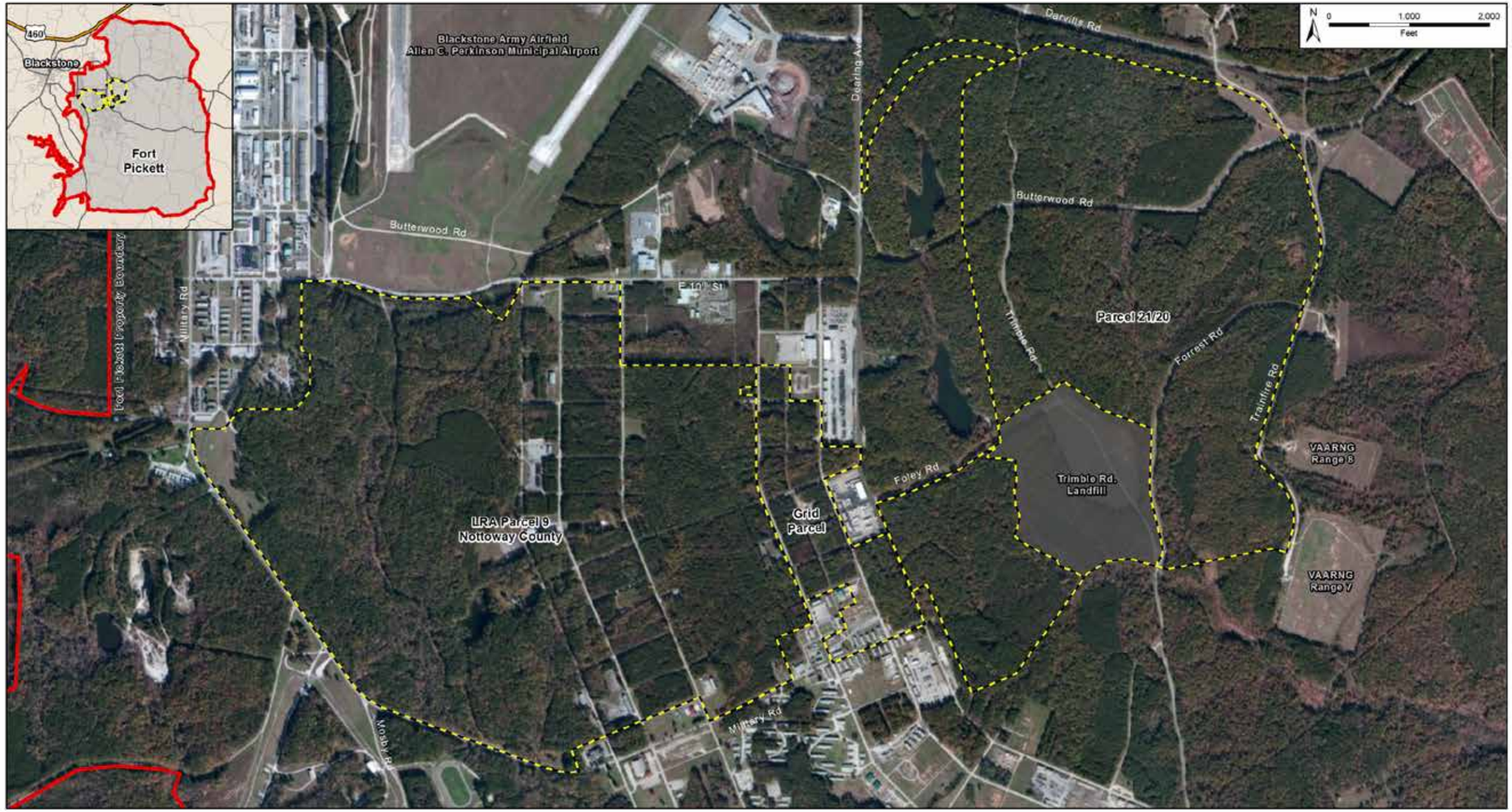


Figure 1.1-1. Project Location



Legend

- Fort Pickett
- Site Boundary
- Rivers and Streams
- Secondary Highway
- Local Road

Source: ESRI (2014), Kieran Timberlake Associates (2014)

Figure 1.1-2. Proposed Project Site

U.S. General Services Administration
Environmental Impact Statement
FASTC Nottoway County, VA

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This Supplemental Draft EIS was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality (CEQ) regulations implementing NEPA[4], the National Historic Preservation Act (NHPA) of 1966, as amended, and GSA's Public Building Service NEPA Desk Guide. NEPA requires supplements to environmental documents when "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns or if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."[5] This Supplemental Draft EIS incorporates by reference and builds upon the analyses presented in the 2012 Draft EIS[6], while focusing on new information about the proposed project.

Why a Supplemental Draft EIS?

NEPA regulations require federal agencies to supplement an EIS when there are substantial changes to a proposed action or significant new circumstances relative to environmental concerns.

GSA, as the lead agency, has prepared this Supplemental Draft EIS in conjunction with the following cooperating agencies: DOS, U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA), and the National Guard Bureau (NGB). The focus of this Supplemental Draft EIS is to analyze and assess the potential impacts of the updated FASTC proposal on the human and natural environment. Section 1.6 summarizes changes made since the Draft EIS and directs the reader to the updated sections in this Supplemental Draft EIS.

1.2 Project Background

In 2008, DOS transmitted a report to the U.S. Congress identifying a critical need for a consolidated training facility for U.S. government security personnel to improve training efficiency and provide priority access to training venues. The American Recovery and Reinvestment Act (ARRA) of 2009 included funding to DOS for site acquisition and the phased development of FASTC.

The mission of DS is "[t]o provide a safe and secure environment for the conduct of U.S. foreign policy." DS is responsible for the protection of people, information, and property at 285 DOS Foreign Missions and 122 domestic locations. DS is prepared to counter threats from terrorism, crime, espionage, visa and passport fraud, technological intrusions (cyber security), political violence, and weapons of mass destruction. DS provides protection to the Secretary of State, foreign dignitaries visiting the U.S., and other U.S. government officials. They protect U.S. athletes at international events such as the Olympic Games and the World Cup and ensure that physical security standards are met at the diplomatic missions overseas and other DOS domestic facilities. In addition, DS

What is the mission of Diplomatic Security?

DS is responsible for the protection of people, information, and property at DOS Foreign Missions and domestic locations. DS is prepared to counter threats to U.S. interests.

[4] 40 Code of Federal Regulations (CFR) 1500-1508 (1986)
[5] 40 CFR 1502.9
[6] 40 CFR 1502.21

is responsible for conducting investigations on passport fraud, both domestically and internationally, as well as other DOS matters. Domestically, DS has special agents and criminal investigators in field and resident offices across the U.S. These agents are responsible for investigating threats and suspicious activity against DOS personnel and facilities, and allegations of criminal and administrative misconduct among DOS personnel. Overseas, DS special agents work with law enforcement counterparts to pursue leads on U.S. fugitives wanted for crimes such as homicide and narcotics trafficking.

1.3 Purpose and Need for Proposed FASTC

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 the 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.

What is the purpose of FASTC?

To consolidate existing geographically separated training functions into a single suitable location to improve training efficiency and operations and ensure priority access to training venues that meet DS facility and training standards.

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. Consolidation would 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 (FACT) 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 personnel of foreign affairs agencies, DS special agents, Foreign Service officers, and select foreign law enforcement personnel. The proposed FASTC would provide training for approximately 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 (POR) 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, D.C., specifically a site within a four 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.
- 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 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 (FY 2018), must be capable of supporting limited Foreign Affairs Counter Threat (FACT) 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.

Private-sector professionals reviewed progress drafts of the Master Plan Update, participated in design review meetings throughout the planning process, and contributed recommendations for achieving Design Excellence guiding principles.

1.4 The Environmental Review Process

The environmental review process is conducted in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, the Council on Environmental Quality (CEQ) regulations implementing NEPA[7], the National Historic Preservation Act (NHPA) of 1966, as amended, and GSA's Public Building Service NEPA Desk Guide. The guidance for a supplemental environmental document is contained in 40 CFR 1502.9 and this Supplemental Draft EIS has been prepared consistent with this guidance. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions. The CEQ was established under NEPA for the purpose of implementing and overseeing federal policies as they relate to this process.

As a federal agency, GSA is required by law to consider the potential impacts of the proposed project on the natural and human environment before taking action. GSA, as the lead agency, prepared this Supplemental Draft EIS with the following cooperating agencies: DOS, USACE, USEPA, and NGB, to assess the impacts that may result from the proposed FASTC being located in Nottoway County, Virginia. This Supplemental Draft EIS evaluates potential beneficial or adverse impacts that may occur in Nottoway County or nearby surrounding counties. GSA's decision to implement the Proposed Action considers the EIS evaluation of impacts.

The analysis presented in this Supplemental Draft EIS is based on the 2014 FASTC Master Plan Update. In turn, the environmental review process has informed and improved the Master Plan Update, and would continue to do so during the design process. The final design of the project may vary in detail, but the potential environmental impacts of the project are not expected to be significantly different than presented in this Supplemental Draft EIS. Should substantial changes to the project design occur after completion of the EIS, GSA would conduct additional environmental analysis, in accordance with NEPA regulations, prior to the changes being implemented.

[7] 40 CFR 1500-1508 (1986)

1.4.1 Regulatory Overview

The government regulations and public agency guidance related to the proposed FASTC facility are described below. The content and approach of this Supplemental Draft EIS were shaped by adherence to this guidance.

The Supplemental Draft EIS for the proposed FASTC facility is a comprehensive environmental document, encompassing federal policies and requirements. The following laws, regulations, guidance, and executive orders (EO) are discussed in the Supplemental Draft EIS:

Federal laws include:

- NEPA of 1969 (42 U.S. Code [U.S.C.] 4321-4347)
- NHPA of 1966, as amended (16 U.S.C. 470 et seq.)
- Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 et seq.)
- ARRA of 2009 (Pub. L. 111-5)
- Clean Air Act of 1970, as amended (42 U.S.C. 7401 et seq.)
- Clean Water Act of 1977, as amended (33 U.S.C. 1251 et seq.)
- Endangered Species Act of 1973 (35 U.S.C. 1531-1544)
- Energy Independence and Security Act of 2007 (Section 438)
- Fish and Wildlife Coordination Act (16 U.S.C. 2901-2911; 94 Stat.1322)
- Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250)
- Farmland Protection Policy Act (7 U.S.C. 4201 et seq.)
- Noise Pollution Control Act (42 U.S.C. 4901 et seq.)
- Coastal Zone Management Act of 1972 (16 U.S.C. 1451-1456)

Federal regulations and guidance include:

- NEPA, CEQ Regulations (40 Code of Federal Regulation [CFR] 1500-1508)
- GSA Public Building Service NEPA Desk Guide (October 1999)

Executive Orders include:

- EO 11988 – Flood Plain Management
- EO 11990 – Protection of Wetlands
- EO 13514 – Federal Leadership in Environmental, Energy, and Economic Performance
- EO 13423 – Strengthening Federal Environmental, Energy, and Transportation Management
- EO 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13045 – Protection of Children from Environmental Health Risks and Safety Risks

State permits and plans include:

- Virginia Department of Transportation Road Design Manual
- Asbestos Permit Application And Notification For Demolition/Renovation

- Virginia Construction General Permit
- Virginia Erosion and Sediment Control Program
- Virginia Stormwater Management Program

Local plans and policies include:

- Nottoway County Zoning Regulations
- Nottoway Comprehensive Plan

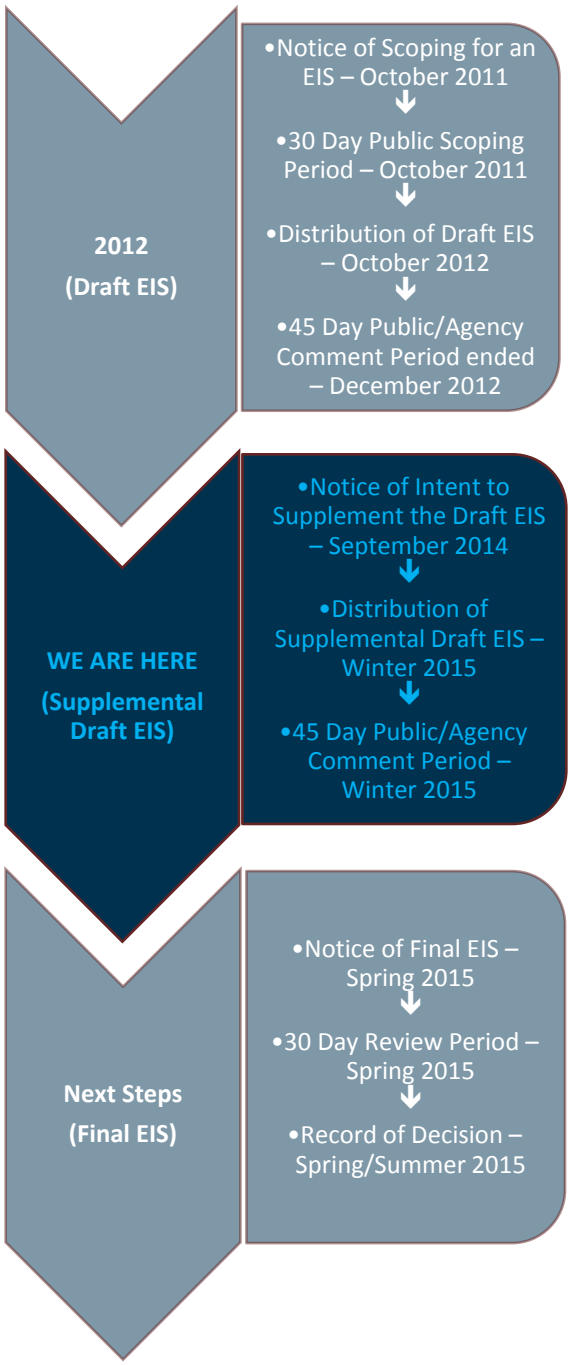
1.5 Public Involvement in this EIS Process

GSA published its Notice of Intent to prepare a Supplemental Draft EIS in the *Federal Register* on September 3, 2014. The notice was also published in area newspapers beginning on September 3, 2014: *Richmond Times Dispatch, Courier Record Blackstone, Crewe-Burkeville Journal, Dinwiddie Monitor, Kenbridge-Victoria Dispatch,* and the *Brunswick Times Gazette*. The notice and schedule of publications is provided in **Appendix A** *Public Involvement*.

GSA and DOS have and will continue to provide opportunities for the public to provide input about the proposed project. The first opportunity for formal public comment in the EIS process was during the public scoping period and at the public scoping meeting for the Draft EIS in October 2011. The public scoping activities are described in detail in **Appendix A**. Comments received during the public scoping period for the 2012 Draft EIS were considered in the identification of key issues requiring analysis.

The second opportunity for formal public comment was the 45-day public comment period for the Draft EIS from October to December 2012. A public open house meeting was held in Blackstone, Virginia on November 7, 2012. The public comment period and public open house meeting are described in detail in **Appendix A** *Public Involvement***.**

All comments received during the Draft EIS comment period between October 26, 2012 and December 10, 2012 were addressed after the comment period and, if needed to respond to these comments, additional analysis was undertaken and revisions were made in this Supplemental Draft EIS. Comments were received from 6 individuals, 17



federal and state agencies, 2 Native American tribes, and 6 local and regional officials. The majority of comments received at the public meeting and submitted during the comment period focused on the beneficial effects the project would have on the community. State and federal agencies commented on environmental concerns, including groundwater, surface water, threatened and endangered species, noise, hazardous waste, vegetation, wetlands, wetland impact mitigation, stormwater management, and environmental justice. The comments received are summarized in **Appendix A.** Copies of all written comments on the 2012 Draft EIS, and GSA's responses to those comments, are provided in **Appendix K** of this Supplemental Draft EIS.

The third opportunity for public comment was the 30-day comment period following the September 3, 2014 publication of the Notice of Intent for the Supplemental Draft EIS. There was no formal scoping meeting held for this Supplemental Draft EIS; however, GSA and DOS conducted outreach to update the public through community meetings and sent written notifications to individuals and groups previously expressing interest in the project. The fourth opportunity for formal public comment on the proposed action is during the 45-day comment period for this Supplemental Draft EIS. There is also a 30-day public review period following release of the Final EIS and before the Record of Decision is signed and published. All comments on this Supplemental Draft EIS, as well as GSA's responses to the comments, will be incorporated into the Final EIS.

GSA and DOS have also worked closely with the local community and the Commonwealth of Virginia during various outreach meetings held between 2011 and 2015. GSA and DOS will continue to reach out to the public to ensure all interested persons are engaged throughout the EIS process. The public is encouraged to provide comments at any time through the project email: FASTC.info@gsa.gov.

1.6 Changes Between the Draft EIS and Supplemental Draft EIS

Public comments were considered during the preparation of this Supplemental Draft EIS, and in some cases, prompted revisions or clarifications in the document. Other changes were made to the Supplemental Draft EIS to capture alterations to the proposed project as well as updates to the affected environment of the project area that have occurred since the time the Draft EIS was published. The changes made in each chapter of the Supplemental Draft EIS are listed below.

1.6.1 Executive Summary

- Executive Summary has been updated with changes made in the Supplemental Draft EIS sections.
- Table ES-2 – Mitigation measures have been added (also see Chapter 6)

1.6.2 Chapter 1 – Purpose and Need

- Section 1.1 Introduction – has been updated to cover the purpose and approach of this Supplemental Draft EIS.
- Figures 1.1-1 and 1.1-2 – were revised to show the updated project site with the removal of Parcel 10.

- Figures 1.1-1 and 1.1-2 – have also been modified with a revised boundary around the Trimble Road Landfill on Parcel 21/20. Note that this change applies to all figures in the Supplemental Draft EIS.
- Section 1.5 Public Involvement – information about the 2012 Draft EIS Public Meeting and Draft EIS Public Comments has been added.
- Section 1.5 has also been updated to expand upon the description of the EIS process.
- Section 1.6 Changes between the Draft EIS and Supplemental Draft EIS – section added listing changes from Draft EIS to Supplemental Draft EIS.

1.6.3 Chapter 2 – Proposed Action and Alternatives

- Section 2.1 Proposed Action – the Proposed Action description has been revised to describe the preferred alternative presented in this Supplemental Draft EIS, based on the 2014 Master Plan Update.
- Section 2.2 Development of Alternatives – the alternatives evaluated in this Supplemental Draft EIS have been updated to include the addition of Build Alternative 3 and an explanation of how alternatives considered in the 2012 Draft EIS have been eliminated from further study.
- Section 2.3 Preferred Alternative – Build Alternative 3 is defined as the Preferred Alternative of the Supplemental Draft EIS.

1.6.4 Chapter 3 – Affected Environment

- All sections – figures have been modified with a revised boundary around the Trimble Road Landfill on Parcel 21/20, and Parcel 10 has been removed from the project boundary.
- Section 3.2.1.1 Architectural Resources – Section updated to include additional consultation with Virginia State Historic Preservation Officer (SHPO).
- Section 3.1.4.3 Water Quality – section updated to clarify status of Virginia Department of Environmental Quality water quality assessments.
- Section 3.1.5.3 Threatened and Endangered Species – includes the addition of the proposed listed endangered northern long-eared bat (*Myotis septentrionalis*).
- Section 3.2.11 Hazardous Substances – has been updated throughout to include information from December 2012 environmental investigations.

1.6.5 Chapter 4 – Environmental Consequences

- Section 4.1.4 Water Resources – Groundwater – Text added indicating shared access by DOS and ARNG to Parcel 21/20 would be maintained for accessing FASTC facilities and for monitoring groundwater at the Trimble Road Landfill.
- Section 4.1.4 Water Resources – Wetlands – Figures have been added showing wetland impact areas by parcel with additional text explaining avoidance and minimization measures undertaken.

- Section 4.1.5.3 Biological Resources – Mitigation – The estimated acres of vegetation that would be re-established has been included in the mitigation measures.
- Section 4.2.2. Air Quality – Added statement that all feasible dust control measures would be undertaken during construction.
- Section 4.2.2.1 Air Quality – Construction – Text added to indicate that vegetative debris and/or demolition and construction materials would be disposed in accordance with all laws, regulations, and GSA standards.
- Section 4.2.3 Noise – A figure has been added showing sensitive land uses (e.g., residences) in proximity to peak noise zones.
- Section 4.2.3 Noise – Discussion of potential noise impacts from construction vehicles along access roads has been added. Impact minimization measures include limiting construction activity to daytime weekday hours to the extent feasible to minimize impacts in areas along the routes of construction vehicle travel.
- Section 4.2.4 Land Use – Airport Zones – Added minimization measure: dust and glare would be limited in airport zones to avoid impacts to air navigation.
- Section 4.2.5 Socioeconomics – Environmental Justice – A figure and a discussion of noise and traffic impacts in proximity to minority and low income areas adjacent to the peak noise impact zone and construction vehicle routes have been added.
- Section 4.2.5 Socioeconomics — A footnote has been added to Table 4.2-5 to indicate direct operations jobs include those directly related to FASTC and direct jobs from visitor spending, which is estimated through use of the project specific economic impact model.
- Section 4.2.6 Traffic – Temporary, minor impacts from construction vehicle traffic added.
- Section 4.2.6.4 - Traffic mitigation to be considered includes travel demand management measures or turning lane improvements performed by the transportation authority with jurisdiction, if funding is available.
- Section 4.2.8 Utilities - Communications with the town of Blackstone have been documented. Minimization measures now include reduction of water demand through the use of ultra-low flow fixtures, rain collection, use of grey water, native plant species for non-irrigated landscaping, and avoidance of permanent irrigation.
- Section 4.2.11 Hazardous Substances– Information has been updated throughout the section based on December 2012 environmental investigations.

1.6.6 Chapter 5 – Cumulative Impacts

- Section 4.2.5- Environmental Justice – Discussion added to reflect additions in Section 4.2.5.

1.6.7 Chapter 6 – Summary of Mitigation Measures for Preferred Alternative

The following minimization or mitigation measures have been added to Chapter 6 and Tables ES-2 and 6.16-1:

- Biological Resources: Re-establishment of native plant communities, compliance with federal dark sky lighting guidelines, and conducting most vegetation clearing from October to April to avoid adverse effects to NLEB under the Endangered Species Act.
- Air Quality: All feasible dust control measures would be undertaken during construction.
- Wetlands/streams: 100-foot wetland/stream buffer avoidance, where feasible.
- Noise: Limit construction noise to daytime weekday hours to the extent feasible; simulator (flash bang) operations would not occur within 656 feet of the Officers Club.
- Airfield Zones: Limit dust and glare in airfield zones to avoid impacts to air navigation.
- Airfield Zones: Submit Form 7460 to Federal Aviation Administration for formal determination on compatibility with air navigation.
- Utilities: Water demand reduction techniques - ultra-low flow fixtures, rain collection, use of grey water, native plant species for non-irrigated landscaping, and avoidance of permanent irrigation.
- Traffic: Recommend that VDOT study turning lane deficiencies and potential improvements to bring intersections up to VDOT design standards.

1.6.8 Appendices

- Appendix A Public Involvement – appendix has been renamed and includes public outreach that has occurred from 2011 to 2015.
- Appendix B Development of Alternatives – appendix has been renamed and includes the site selection process and development of the Draft EIS and Supplemental Draft EIS alternatives.
- Appendix C Correspondence – the organization of the appendix has been updated for easier reference. Documentation from Virginia Department of Environmental Quality has been added.
- Appendix D Species list has been updated.
- Appendix E NHPA Correspondence – additional correspondence has been added.
- Appendix F Cultural Resources Surveys – cultural resources survey reports have been updated.
- Appendix G Environmental Noise Assessment includes a preface and addendum regarding Build Alternative 3.
- Appendix H Traffic Impact Analysis has been updated.
- Appendix I Air Quality includes a preface regarding Build Alternative 3.
- Appendix J Economic and Fiscal Impacts Analysis has been updated.
- Appendix K Comments and Responses on the 2012 Draft EIS has been added.

1.6.9 Chapter 9 Agencies Contacted and Supplemental Draft EIS Distribution List

- Names of commenters on the 2012 Draft EIS and 2012 public meeting attendees have been added to the Supplemental Draft EIS distribution list.

1.7 Contents of this Supplemental Draft EIS

The following provides a description of the contents of the main sections of this Supplemental Draft EIS.

Executive Summary:

Provides a brief summary of the key issues and the results and conclusions of the environmental analysis.

Chapter 1 Purpose and Need for Proposed Action:

Provides background information relevant to the Proposed Action, and discusses its purpose and need. Includes discussion of public involvement and changes made from the Draft EIS to the Supplemental Draft EIS.

Chapter 2 Description of Proposed Action and Alternatives:

Describes the updated Proposed Action and the development of alternatives considered, including the No Action Alternative.

Chapter 3 Affected Environment:

Describes the existing conditions of the area that may be affected by the Proposed Action.

Chapter 4 Environmental Consequences:

Describes the potential environmental consequences to the resources described in Chapter 3 and provides an account of the consideration of other laws and policies that would be applicable to the Proposed Action.

Chapter 5 Cumulative Effects:

Describes potential cumulative impacts of the Proposed Action in conjunction with other actions to the resources described in Chapter 3.

Chapter 6 Summary of Mitigation Measures:

Provides a summary of the proposed mitigation measures.

Chapter 7 References:

Contains references cited in the Supplemental Draft EIS.

Chapter 8 List of Preparers:

Lists those primarily responsible for preparing the Supplemental Draft EIS.

Chapter 9 Agencies Contacted and Supplemental Draft EIS Distribution List:

Contains a list of agencies contacted regarding the Draft and Supplemental Draft EIS and all persons and organizations that received a copy of the Supplemental Draft EIS.

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CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

The Proposed Action is the acquisition of land and the development of a consolidated United States Department of State (DOS) Bureau of Diplomatic Security (DS) Foreign Affairs Security Training Center (FASTC) at Army National Guard (ARNG) Maneuver Training Center Fort Pickett (Fort Pickett) and Local Redevelopment Authority (LRA) land in Nottoway County, Virginia. 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 Virginia Army National Guard (VaARNG) for use of facilities to be shared with the VaARNG. LRA Parcel 9 would be purchased from Nottoway County.

The Proposed Action would consolidate hard skills tactical training functions currently taking place at various leased and contracted facilities at one center. The primary leased and contracted facilities currently supporting DS training functions include but are not limited to: Bill Scott Raceway in Summit Point, West Virginia; Panthera Training Center in Old Fields, West Virginia; and Academi in Moyock, North Carolina. These facilities would no longer be leased or contracted by DS after full implementation of the Proposed Action. FASTC would train primarily DOS employees and other United States (U.S.) government employees. These individuals would include professional DS special agents, other DOS personnel, and the wider corps of U.S. diplomats and their families. A limited number of police and security professionals from countries in partnership with the U.S. would also receive training at the proposed FASTC. Many of these police and security professionals have a vital role in providing protection to U.S. personnel and facilities overseas.

What does the Proposed Action include?

- Hard skills training
  - Driving Tracks
  - Mock urban environment
  - Indoor/outdoor firearms training
  - Weapons/explosives training
  - Simulation
  - Classrooms
  - Fitness Center
- Administrative Offices
- Emergency Response
- Federal facility design, construction, and security standards
- Certification through LEED Program

The facility security level for the proposed FASTC would be determined based on *The Risk Management Process for Federal Facilities - An Interagency Security Committee Standard August 2013 – 1st Edition* and GSA's *Facility Security Requirements for Explosives Devices Applicable to Facility Security Levels III and IV*. It is anticipated that most venues would be categorized as Level II with select venues categorized as Level III or IV. The largest of the proposed buildings for FASTC (A01 and T01, refer to **Section 2.1.1.1**) would be certified through the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program as LEED Silver through the incorporation of energy efficiency and reduction of waste, pollution, and environmental impacts.

After completion of construction, FASTC would be a consolidated tactical training center for a rotating student population of approximately 8,000–10,000 annually. 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, seven 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. Student housing would not be included in the FASTC facility, and students would be transported by shuttles to and from hotels/motels in the local or regional area.

There are no aircraft operations proposed for FASTC other than potential occasional helicopter transport of personnel to/from the Blackstone Army Airfield located north of LRA Parcel 9 (refer to **Figure 1.1-1**).

In December 2010, DOS finalized a Program of Requirements (POR) for the FASTC project. A POR update was completed in September 2014 to reflect the reduced scope and elimination of soft skills training. Prior to data collection, existing DS training sites were visited to investigate the types of facilities available, preferred types of facilities, and state-of-the-art facilities. In addition to these site visits, questionnaires were sent to FASTC user groups for input and interviews were conducted. The data gathered was then used to determine the requirements for FASTC. The POR stipulates the square footage of the buildings, parking requirements, and the land area needed to accommodate the facilities. In addition, for each building or training area the POR specifies the associated mechanical, electrical, plumbing, telecommunications, fire protection, audio-visual, and acoustical systems needed for those facilities. The POR involved the collection of statistical and quantitative data that included current and projected staffing. The FASTC facility design has continued to evolve as DOS identifies new or modified training requirements.

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.

2.1.1 Facility Areas of the Proposed FASTC Program

The proposed FASTC facilities, as identified in the 2014 POR, are grouped into eight areas described below in which the primary hard skills training and associated support activities would occur. Each facility has an identification number according to use.

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 would be LEED Silver certified and include 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. T01 would be LEED Silver certified. 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 approximately 600 simulator (flash bang pyrotechnics) operations annually. The following facilities along with associated surface parking would comprise this area:

- 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.

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 (7 a.m. to 10 p.m.) plus 8 operations during the nighttime hours (10 p.m. to 7 a.m.). 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 (D03), Explosives Simulation Alley (E04), and Mock Urban Tactical Training Area (T02), 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). The facility 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 (MOUT) and Mock Embassy – a compound of buildings that would be modeled on the U.S. Army's Military Operations on Urban Terrain facilities. Buildings would model banks, restaurants, theaters, and residences. Driver training would include 36 operations per day on mock urban streets. 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 T02 and in proximity to all other training venues of the Mock Urban Training Environment.
- T03 Rappel Tower – four-story Rappel Tower, positioned near the MOUT, 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 high.
- T04 Tactical Maze – two-story facility that would be located near T03 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 T03 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 methods of escapement from a burning building. The facility would not be used for actual fire fighter training. The facility would be bolted to concrete footers.

2.1.1.5 Explosives Training Environment

The Explosives Training Environment would consist of an Explosives Demonstration Range (E02), Post-Blast Training Range (E03), and Explosives Breaching Range (E05). 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 smaller (4.5 grams to 1½ pounds NEW) charges annually, 36 annual detonations of 2.23 pounds NEW charges, and 18 annual detonations of 3 pounds NEW demolition charges. Detonations would normally occur between the hours of 7 a.m. and 10 p.m.

- E02 Explosives Demonstration Range – 100-acre open range used to detonate a maximum charge of 0.5 pounds NEW high explosive charges. It would have a 360 degree, 300 meter (984 feet) exclusion/safety zone. The demonstration site would contain two pads, a 200 foot by 200 foot blast pad with a sifted sand base, and a 100-foot 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. It would have a 360 degree, 300 meter (984 foot) exclusion/safety zone. The site would contain a 400 foot by 400 foot 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 500 yards from the closest edge of 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 pounds 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 serve the Explosives Breaching Range. The classroom would include covered bleacher seating and a 10-space surface parking area. The building would have work benches and a six-seat technical workshop with tools such as drill presses and table saws.
- E05b Breaching House – two-story prefabricated building roughly 40 feet by 40 feet capable of detonations of 0.25 to 0.5 pounds NEW. The Breaching House and walls would be contained within a spiral earthen berm for explosives containment. The berm would be constructed at a 45 degree angle and located as close as possible to the breaching walls to intercept as many fragments as possible.
- E05c Breaching Wall 1 – 30-foot long, 8-foot high wall with four upright steel beams and three removable concrete wall panels. The wall would be designed for charges of up to 3 pounds NEW.

- E05d Breaching Wall 2 – 60-foot long, 8-foot high wall with seven upright steel beams and three removable concrete wall panels. The wall would be designed for charges of up to 3 pounds NEW.
- E05e Breaching Storage – 30 foot by 30 foot 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 shotguns. Total estimated activity at all the firing ranges would be more than 6 million rounds annually, normally between the hours of 7:00 a.m. and 10:00 p.m. Firing range buildings would be designed to ensure acceptable noise levels in adjacent areas inside and outside of the buildings (see **Section 4.2.3**). The Firearms Training Environment would include the following facilities along with a 68-space surface parking area:

- R02/R04 Combined 25-Meter Baffled Indoor/100-Meter Outdoor Firing Range – three 25-meter (82 foot) indoor ranges with 15 firing points each and two 100-meter (328 foot) outdoor firing ranges with 15 and 30 firing points. It would also contain five 30-person classrooms and support facilities. Acoustical treatments within the firing ranges as well as the classrooms would allow normal use of the classroom and other support spaces during live fire training. 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. It would be designed for live shooting with ballistic protection on the walls to prevent penetration of projectiles. The facility would have at least five separate entrances and contain furnishings to create a realistic atmosphere.
- R03c Classroom/R05a Classroom/R07 Armory – combined armory and classroom building that would also serve as the firearms distribution point for the R02/R04 Baffled 25-meter Indoor/100-meter Outdoor Firing Range and R03b Live Fire Shoot House. The building would also have a weapon cleaning room, two 30-person classrooms that would serve R03b Live Fire Shoot House and R05 300-Meter Outdoor Firing Range (an existing Fort Pickett range currently in use by VaARNG [Range 8]), 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 internal infrastructure and operations throughout FASTC. The Service Area would consist of one building and parking area containing the following program functions.

- A09 Central Warehouse/I01 Public Works – service facilities that would be collocated to establish a centralized location for delivery, storage, and maintenance related to the internal infrastructure and operations of FASTC. The warehouse would provide general access-controlled storage, and the public works portion of the building would house all building and facility

maintenance personnel. This facility would have a loading dock and receiving area, and would be serviced by on-site staff.

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 external delivery vehicles, which are expected to access this location frequently in order to deliver cars, equipment, and supplies. A fuel storage/pump area would be located near D06.
- D06a Parking Garage – two-story parking deck structure that would provide both covered and uncovered parking for 400 cars, trucks, and armored vehicles used in training on the FASTC facility.

Table 2.1-1 summarizes the facilities of the proposed FASTC project. The proposed location of each facility is discussed further in **Section 2.2.2.2.** Total building size requirements of the 2014 Master Plan Update are 707,363 square feet (sf), as compared with 2.5 million sf in the 2012 Master Plan.

Table 2.1-1 Proposed FASTC Venues

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

Note: [1]*All acreage listed is the entire area available for proposed facilities and infrastructure and does not signify that the entire area would be cleared.*

2.1.2 Proposed Timeframe for Development of FASTC

Due to the substantial size of the entire project, FASTC would be designed in five separate packages and constructed in three to five phases, depending on funding, over a five-year period. Package 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 American Recovery and Reinvestment Act funding in September 2015. Package 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.

What is the proposed project schedule?

- **2015 to 2020 – Construction**
- **2016 – Training 10% operational**
- **2018 – Training 90% operational**
- **2020 – Construction complete and FASTC fully operational**

Training venues would begin to operate in 2016 with approximately 10% of training operations underway. Construction of Packages 2 and 3 are estimated to begin in the fall/winter of 2015/2016 and Packages 4 and 5 are estimated to begin in the fall/winter of 2016/2017. 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. Phasing schedules continue to evolve and would ultimately depend on timeframes for design and appropriated funding from Congress, but they are estimated in this Supplemental Draft Environmental Impact Statement (EIS) for purposes of analysis.

2.1.2.1 Proposed FASTC Student and Staff

During the first year of training operations in 2016, average attendance at the facility would be approximately 60 students daily, and approximately 1,000 students would be trained annually. Sixty percent of the training would occur between May and September.

The number of students would increase as FASTC becomes fully operational. 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. At full operation, a daily average of 600 students would stay in hotels. Students residing in hotels 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 7 a.m.

Concurrent with the increase in the number of students, the number of staff would also be anticipated to increase over the five-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. With anticipated movement attrition in present staff levels, plus the need for additional facility support staff, 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 2017 and 2020, an additional 191 staff would relocate and 115 employees would be hired for a total staff of 339. 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.

2.1.3 Proposed Project Location

The proposed project site is located in south central Virginia, near the town of Blackstone in Nottoway County, approximately 60 miles southwest of Richmond and 40 miles west of Petersburg. Nottoway County is bordered by Dinwiddie County to the east, Prince Edward County to the west, Amelia County to the north, and Brunswick and Lunenburg Counties to the south (**Figure 1.1-1**).

Where would FASTC be located?

Three parcels within Fort Pickett and Nottoway County:

- Fort Pickett Parcel 21/20
- Fort Pickett Grid Parcel
- LRA Parcel 9

The U.S. General Services Administration (GSA) is focusing the proposed development of FASTC on three available and adjacent parcels (**Figure 1.1-2**). Circulation between the parcels would occur on the Fort Pickett roadway network and would fulfill FASTC program adjacency needs. The proposed site includes Parcel 21/20 and the Grid Parcel comprising approximately 549 acres and 74 acres, respectively, of Fort Pickett, and LRA Parcel 9 owned by Nottoway County, which is 727 acres. The site also includes 12 acres between Parcel 21/20 and Dearing Avenue, and scheduled use of 19 acres at Fort Pickett Range 8. In total, the three parcels comprise 1,350 acres with an additional usage of 31 acres for a total project site of 1,381 acres contained within the boundaries of Fort Pickett. 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.

Parcel 21/20 is currently mostly forested and undeveloped, and is located to the southeast of Blackstone Army Airfield and south of Virginia Route 40. Parcel 21/20 originally included an additional 238 acres located at the southwest portion of the site's boundary and 80 acres in the Trimble Landfill area located in the center of the parcel. During coordination regarding use of the property, VaARNG determined that this land was no longer available for the proposed FASTC project; therefore, the parcel boundary was revised to exclude these areas. The Grid Parcel is located west of Parcel 21/20 on the western side of Fort Pickett, within the Fort Pickett cantonment area. LRA Parcel 9 adjoins the western boundary of the Grid Parcel and is adjacent to the southern extent of the airfield. Both parcels are partially developed and contain utilities and a network of streets.

Fort Pickett was established in 1942 as a World War II training camp. Fort Pickett has been primarily used to provide training facilities, maneuver training areas including live fire artillery ranges, installation operations, and mobilization support for U.S. Army Reserve and National Guard units, as well as all branches of the U.S. military. Fort Pickett encompasses approximately 45,148 acres, of which 45,008 were identified as no longer required by the U.S. Army by the 1995 Defense Base Closure and Realignment Commission. The remaining 140 acres were identified as a U.S. Army Reserve enclave.

VaARNG has operational control over approximately 42,000 acres of Fort Pickett through a 1997 facility land use agreement. Fort Pickett is currently used as a Maneuver Training Center. Approximately 2,950 acres were not needed for military uses and were deeded to Nottoway County in 2000 for use in the economic development activities of the LRA (Schnabel Engineering 2010).

2.1.4 Future Related Actions

The addition of a Central Ammunition and Explosives Storage facility (POR identification R08) that would service the FASTC program is a proposed project under consideration. However, the details on location and design requirements for this facility are not yet known, and the analysis of potential environmental impacts that might be associated with this facility cannot be conducted at this time. The facility would be fully secured and consist of ammunition and explosives magazines. GSA and DOS are coordinating with VAARNG on the potential location of this facility at Fort Pickett. Any potential environmental impacts would be evaluated once sufficient projects details are known, and GSA would determine if additional environmental evaluation under NEPA or other regulations is warranted.

2.2 Development of Alternatives

The Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA)* establishes a number of policies for federal agencies, including "using the NEPA process to identify and assess reasonable alternatives to the Proposed Action that would avoid or minimize adverse effects of these actions on the quality of the human environment."[8] This chapter provides a detailed description of the development of alternatives.

The GSA and DOS have undertaken an extensive process in the search for a possible site for the proposed FASTC. A range of alternative sites/locations were evaluated for their potential to meet the needs of the DS training program, while having the least impact on the environment. This process and the resulting alternative carried forward for analysis in this Supplemental Draft EIS is summarized below and discussed in detail in **Appendix B** *Development of Alternatives*.

[8] 40 CFR 1500.2(e)

Site Selection Process Summary

1. Site Alternatives Considered
   a. 1993 Site Search
   b. 2009 Site Search
   c. 2010 Site Search
   d. 2013 Additional Due Diligence
2. Build Alternatives Considered
   a. 2011 Range of alternative layouts on the Fort Pickett/Nottoway County site.
   b. 2012 GSA Design Excellence Program review alternatives
   c. 2012 Build Alternative 1 and Build Alternative 2 evaluated in the Draft EIS
   d. 2014 Build Alternative 3 evaluated in this Supplemental Draft EIS

Which sites were considered for FASTC?

Over a period of years, an extensive site search process evaluated more than 70 potential sites in proximity to the Washington D.C. area.

- Federal facilities
- Military bases
- Private property

In April 2014, the earlier DOS selection of the proposed site for FASTC at Fort Pickett and Nottoway County was reaffirmed at a reduced scope of requirements. The project would proceed as a hard skills only facility, including driving tracks, mock urban environment, explosives training, and firearms training. The reduced scope included the elimination of the dormitories and dining facilities, reducing the size of certain training venues, and the removal of soft skills training.

Based on adjustments made to the proposed FASTC scope of requirements, GSA and DOS prepared a Master Plan Update in 2014 that modifies the previous build alternatives. The Master Plan Update, evaluated in this Supplemental Draft EIS as Build Alternative 3, is generally based on 2012 Build Alternatives 1 and 2, with modifications developed in 2014. The alternatives fully evaluated in this Supplemental Draft EIS include the No Action Alternative and Build Alternative 3. The following sections describe the 2012 Draft EIS alternatives and alternatives evaluated in this Supplemental Draft EIS.

2.2.1 Alternatives Evaluated in the 2012 Draft EIS

The 2012 Draft EIS evaluated the No Action Alternative and two build alternatives: Build Alternative 1 and Build Alternative 2. The two Draft EIS build alternatives consisted of varied layouts according to the programmatic requirements of the proposed FASTC facility with site designs that had potential to have the least environmental impact. Build Alternative 1 and Build Alternative 2 are summarized below and described in detail in **Appendix B.** Build Alternatives 1 and 2 are no longer feasible because of the reduced scope of the Master Plan Update, and are eliminated from further evaluation in this Supplemental Draft EIS.

2.2.1.1 2012 Draft EIS Build Alternative 1

Under Build Alternative 1, training would have occurred at the site in hard skills and soft skills facilities located on Parcel 21/20 and LRA Parcel 9. A Main Campus, Firearms Training Ranges, and Explosives Ranges were proposed for Parcel 21/20. The location of the Explosive Ranges required the relocation of

two existing primary tank routes, essential for maneuver training at Fort Pickett, to maintain the connection between Dearing Avenue and Trainfire Road (shown on Figure B-1 in **Appendix B**).

A Mock Urban Environment Area, High Speed Driving Tracks, Off-Road and Unimproved Road Driving Courses, and Emergency Services were proposed for LRA Parcel 9.

Build Alternative 1 would have required a compressed development of program requirements, which would have constrained site planning for functionality, performance, flexibility, and growth.

2.2.1.2 2012 Draft EIS Build Alternative 2

Under Build Alternative 2, training would have occurred at the site in hard skills and soft skills facilities located on Parcel 21/20, the Grid Parcel, LRA Parcel 9, and LRA Parcel 10. This build alternative included two additional parcels as compared to Build Alternative 1: the Grid Parcel and LRA Parcel 10.

Build Alternative 2 included all the FASTC program elements that were included in Build Alternative 1. The FASTC High Speed Driving Track and Off-Road/Unimproved Driving Course Areas, Firing Range Area, and Explosives Range Area were generally proposed to be located on the same sites as Build Alternative 1. A Main Campus was proposed for LRA Parcel 10, located west of LRA Parcel 9 on West Entrance Road. The Mock Urban Environment Area was located on LRA Parcel 9 and the Grid Parcel. Several facilities associated with the High Speed Driving Tracks were located on the Grid Parcel.

Build Alternative 2 would have provided a larger area of developable land to allow a site plan that achieved significantly improved function and performance. Build Alternative 2 would have established an independent and distinctive identity for FASTC by providing a separate controlled access point outside of Fort Pickett. This independent location would also have provided a separation of the campus living, recreation, and classroom areas from the FASTC hard skills training areas and Fort Pickett ranges, achieving a better quality of life environment for trainees.

2.2.2 Alternatives Evaluated in this Supplemental Draft EIS

The alternatives evaluated in this Supplemental Draft EIS include the No Action Alternative and Build Alternative 3. All reasonable site layout alternatives for the proposed FASTC facilities were considered throughout the process of development of the alternatives (refer to **Appendix B**). Build Alternative 3 meets DS hard skills program requirements and represents the optimal layout for avoidance of environmental impacts. Build Alternative 3 is the Preferred Alternative of this Supplemental Draft EIS.

2.2.2.1 No Action Alternative

The option of GSA taking no action to develop the proposed FASTC in Nottoway County or other locations is considered in the Supplemental Draft EIS. Under the No Action Alternative, the proposed FASTC would not be established and DOS would continue training operations at existing dispersed contracted and leased training facilities. The parcels of land at Fort Pickett and Nottoway County being considered for the Proposed Action would not be developed by GSA and DOS, and the existing land uses would remain.

The No Action Alternative would not fulfill the project purpose and need to consolidate training functions into a single location and establish a new facility to meet the increased demand for well-

trained personnel. DS would continue training at multiple geographically separated facilities around the country that do not adequately meet its current or future training standards. As such, DS training courses would continue to present conflicts with the primary federal agency users and be subject to postponement or cancellation. The No Action Alternative would not fulfill the goals of the Presidential Memorandum of June 2010, *Disposing of Unneeded Federal Real Estate*, which calls for the elimination of leased operations and the consolidation of facilities.

The training of personnel under the current condition would not adequately meet increased DOS personnel needs for domestic or overseas staff and the few commercially available, specialized training venues that accommodate the training needs of DS would continue to be used.

The No Action Alternative provides a baseline for understanding the impacts of the proposed FASTC by providing a means for comparison of the current and future environmental conditions with or without the development of FASTC.

2.2.2.2 Build Alternative 3

The 2014 Master Plan Update was prepared in line with the reduced project scope that eliminates much of the previously proposed main campus and living facilities and reduces the total size of the venues, but still achieves the functionality of the FASTC Hard Skills Training Program. The Master Plan Update, evaluated in this Supplemental Draft EIS as Build Alternative 3, positions the FASTC venues on three parcels: LRA Parcel 9, the Grid Parcel, and Parcel 21/20. Build Alternative 3 is shown in **Figures 2.2-1 and 2.2-2**. Descriptions of the eight proposed FASTC venue areas were provided in **Section 2.1.1** *Facility Areas of the Proposed FASTC Program*.

The major differences of Build Alternative 3 as compared with 2012 Build Alternatives 1 and 2 are the locations of the administrative area (Core Area) and the consolidation, reduction, or elimination of several training venues and support facilities. The FASTC High Speed Driving Track and Off-Road/Unimproved Driving Course Areas, Explosives Training Environment, and Firearms Training Environment would generally be located on the same sites as 2012 Build Alternatives 1 and 2.

Legend

- Fort Pickett
- Parcel Boundary
- Roads
- Rivers and Streams
- Bald Eagle Nest
- 660 Foot Nest Buffer

Source: ESRI, Cardno, Kieran Timberlake (2014)

FASTC Concept Plan

- Buildings
- Drive Tracks and Roads
- Clearing
- Bare Ground
- Wetlands
- Wetland Buffer

Figure 2.2-1. Build Alternative 3

U.S. General Services Administration
Environmental Impact Statement
FASTC Nottoway County, VA

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 2.2-2. Build Alternative 3 Venues

Core Area – Facilities of the Core Area, A01, A08, and T01, would be located on the Grid Parcel, at the eastern boundary of LRA Parcel 9. The Core Area would be accessed from Dearing Avenue by a new, one-way loop road leading to the central FASTC buildings, and would include a surface parking area for staff. The Core Area would be separated from adjacent Fort Pickett buildings by existing forest. The Core Area would be connected to training venues to the west on LRA Parcel 9 by a new Ring Road that would establish a continuous, two-way connection between and among the drive track areas, classrooms, and support facilities. T01 would be located on the western edge of the Core Area, along the Ring Road, and provide immediate adjacency to tactical training venues.

High Speed Driving Track Area – Three separate tracks and associated classrooms (D02a, b, and c) of the High Speed Driving Track Area (D02) would be located on LRA Parcel 9.

Off-Road/Unimproved Driving Course Area – The Unimproved Road Driving Course and Off-Road Driving Course (D04 and D05) and associated classroom buildings would be located on the northern portion of LRA Parcel 9. The driver classroom building (D03a/D04a/D05a) would be placed to service both courses and the Mock Urban Driving Course (D03), and avoid runway clear zones and accident potential zones imposed by the Blackstone Army Airfield located to the north of LRA Parcel 9. Track requirements would be well aligned with existing topography, and the tracks would be pervious or semi-pervious, which minimizes site work and stormwater impacts.

Mock Urban Training Environment – The Mock Urban Training Environment venues, D03, E04, T02, T03, T04, T05, and the Mock Embassy, would be located on the eastern side of LRA Parcel 9. The Mock Embassy compound would consist of eight buildings surrounded by a wall, and would be positioned on the northern edge of T02 (the MOUT). The Mock Embassy would also be in proximity to all other training venues of the Mock Urban Training Environment.

Explosives Training Environment – Explosives ranges, E02, E03, and E05, would be located in the northern portion of Parcel 21/20. Access to the explosives ranges from the Core Area would be achieved with a combination of existing roads and new access drives. Individual explosives pads would be positioned to keep all blast fragment clearances entirely within the Parcel 21/20 boundaries.

The location of the proposed explosives ranges interrupts two existing primary tank routes essential for maneuver training at Fort Pickett. The north-south tank trail (Trimble Road) and the primary east-west tank trail (Butterwood Road) would traverse the blast safety zones and would need to be relocated around the proposed explosive ranges to maintain the connection between Dearing Avenue and Trainfire Road and would thus preserve the existing Fort Pickett circulation. The rerouted tank trail would extend from Dearing Avenue north of the existing Butterwood Road to and through the northern portion of Parcel 21/20 (**Figure 2.2-1**).

Firearms Training Environment – Firearms training buildings R02/R04, R03b, and R07 would be located in the east-central portion of Parcel 21/20. The ranges would generally be located along the southeast boundary of the parcel between Fort Pickett's Forrest Road and Trainfire Road and adjacent to existing VaARNG firing ranges. The Firearms Training Environment has been consolidated substantially, compared with the 2012 build alternatives, and the overall footprint has been reduced. Buildings would be located to maximize the use of existing Fort Pickett roads and an existing 300-meter outdoor firing

range (Range 8), which would minimize development area and associated environmental impact. The proposed locations of the buildings correspond with existing site plateaus and avoid steep topography, wetlands, and other areas that would require substantial site work for building pad placement.

Service Area – A Central Warehouse (A09) and Public Works Building (I01) would be located at the southern edge of the Grid Parcel. The location would be adjacent to existing and compatible Fort Pickett land uses and would be accessible from existing roadways via Military Road and Kemper Avenue.

Driver Training Maintenance Area – A centralized vehicle parking deck (D06a) and vehicle maintenance shop (D06) that support the driver training activities would be located inside the Ring Road along the access road leading to the D02 driving track and its associated classroom building (D02c). This location allows direct access for delivery vehicles from the south via Military Road with a minimum of travel on internal FASTC roadways. The maintenance shop would have emergency shower/eyewash units, wash sinks, a compressed air system, and vehicle wash equipment. Trench drains with oil interceptors would capture and separate oil from the drainage water prior to entering the site storm water system. The vehicle wash equipment would utilize recycled water from either treated reclaimed storm water or domestic cold water.

The following applies in general to Build Alternative 3:

Re-vegetation – Existing vegetation would be preserved wherever possible and cleared areas would be re-planted where feasible. Where existing forest would be cleared or disturbed, native plant communities indigenous to the central Piedmont and the immediate area would be used to re-vegetate the areas. Woodland-edge vegetation would be planted along disturbed edges and would include early successional trees, shrubs, and grasses. Early successional plant species are those that are first to grow in recently disturbed areas and are naturally replaced by different species as site conditions change over time. 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.

Wetland and Stream Protection – Wetlands and streams would be avoided to the extent feasible. Stream crossings would be constructed perpendicular to the stream channel and culverts would be sized to maintain efficient peak flows. A 100-foot wetland buffer area would be maintained around wetlands and streams wherever feasible.

Utilities – Infrastructure improvements would be required for Build Alternative 3. Currently, water and sewer service for the area is provided by the town of Blackstone. Both the water treatment plant and the wastewater treatment plant (WWTP) are located within Fort Pickett. The FASTC facilities would tie into these existing facilities; however, additional lines would also be required on LRA Parcel 9, the Grid Parcel, and Parcel 21/20. Improvements would also be required in the electrical system owned and operated by Southside Electric Cooperative. In addition to some new overhead transmission lines, a new separate primary power delivery system would be developed. Existing telecommunications infrastructure on LRA Parcel 9 and the Grid Parcel, including fiber optic lines and a fiber optic node, would be relocated, and new lines would be installed on Parcel 21/20. All utility construction would occur within existing or proposed roadways or building footprints.

To provide operational efficiency and reduce cost, the cooling and heating for the Core Area would be combined into a central cooling and heating plant. Cooling would be through a cooling tower and ground source closed loop field. High-efficiency ground-source heat pumps would be used for buildings. Ground source fields would be horizontal loops located in trenches six feet below the ground surface. A horizontal, closed-loop field would be installed in an area that would already be disturbed by grading for construction of the venues, which would minimize disturbance to vegetation or wetlands. The Core Area would require 300 tons of cooling, and heating would require 1,325 thousand British thermal units per hour. The central plant would be located as an extension to building T01 and would consist of high efficiency water cooled chillers, electric driven heat recovery chillers, and cooling towers with variable speed drives to minimize energy usage. A high-efficiency ground source loop field and heat pumps would also be installed in the Firearms Training Environment.

Site Lighting – To maintain and blend with the character of the surrounding rural environment, site lighting would be designed, in accordance with GSA Facilities Standards for the Public Buildings Service, to meet "dark sky" guidelines limiting nighttime light pollution and glare as recommended by the International Dark-Sky Association and Illuminating Engineering Society of North America Model Lighting Ordinance of 2011. Site lighting fixtures would be designed and installed by GSA, but Southside Electric Cooperative would design and install all service to roadway lighting up to the base of the pole. Site lighting is planned for one of the High Speed Driving Tracks.

Stormwater Management – Management of stormwater quality and quantity would be in accordance with the Clean Water Act, Virginia Stormwater Management Act, and the Energy Independence and Security Act Section 438. The project would also be constructed to achieve LEED Sustainable Sites credits. Best management practices (BMPs) for minimizing runoff effects would be used, such as, grass swales, bioretention areas, wet ponds, and enhanced extended detention areas. Drainage would be directed to BMPs. Where possible, protection of open space areas, reforestation/re-vegetation, and/or pervious pavements would be used. Infiltrating stormwater treatment would not be considered for areas where existing soil or groundwater contamination exists.

Venues would be constructed to fit within existing landforms to the maximum extent practicable to minimize grading requirements. Buildings would utilize dry wells, infiltration trenches, and/or roof downspout systems to treat stormwater runoff. BMPs would provide phosphorous removal and treatment of the 95th percentile storm.

The explosives ranges would include extended detention and/or wet ponds that have a minimum of 4 feet of vertical separation from the seasonal high groundwater table. Impermeable liners and/or pretreatment of runoff via bioretention or other filtration is proposed at the blast pads.

Access and Circulation – two options for access to the Core Area, shown in **Figure 2.2-3,** are evaluated for the proposed FASTC under Build Alternative 3. Primary access under both options would be by personally operated vehicle or shuttle bus from U.S. Route 460 to U.S. Route 460 Business to Military Road. Option 1 would proceed through the Fort Pickett Main Gate to East 10th Street, Dearing Avenue, and to the FASTC Core Area access loop road off Dearing Avenue. With Option 2, primary access would be from U.S. Route 460, U.S. Route 460 Business, and Military Road to VA Route 40 (Darvills Road) to Dearing Avenue to the Core Area

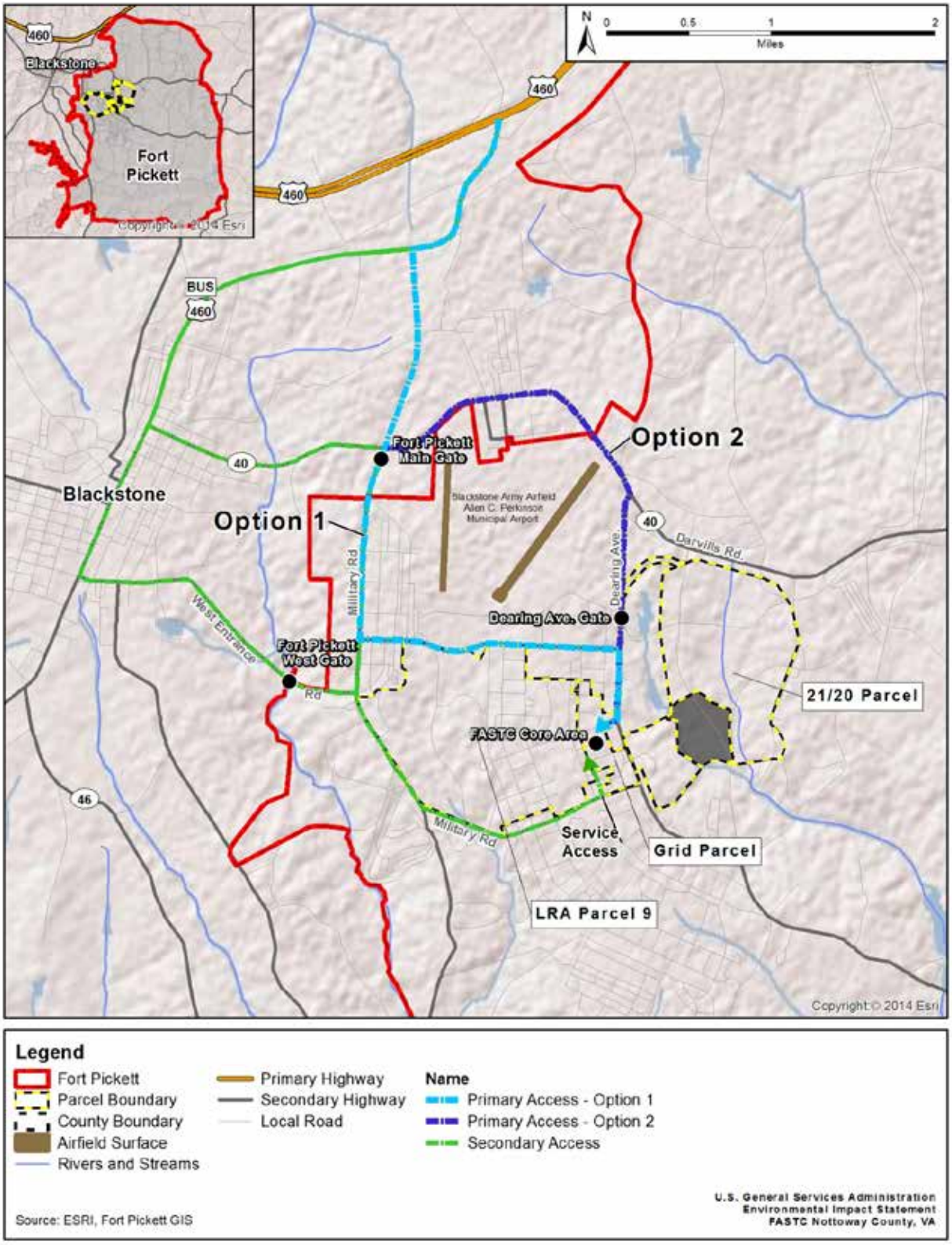

Figure 2.2-3 Build Alternative 3 Access Options

access loop road. Under Option 2, the existing closed Dearing Gate would be reconstructed as a functional access point. Secondary access under Options 1 or 2 for a small percentage of vehicles would be from U.S. Route 460 to U.S. Route 460 Business (North Main Street) to downtown Blackstone to VA Route 40 and Military Road through the Fort Pickett Main Gate to the Core Area. Alternatively, secondary access may also be via North Main Street through downtown Blackstone to South Main Street to West Entrance Road with entrance to Fort Pickett and Military Road at the West Gate.

Internal circulation would be from the Core Area to the Ring Road for accessing venues to the west on LRA Parcel 9 or from the Core Area loop road to Dearing Avenue to the Explosives and Firearms Training Environments on Parcel 21/20 via Foley Road.

The main characteristics of Build Alternative 3 compared with 2012 Draft EIS Build Alternatives 1 and 2 are summarized in **Table 2.2-2**.

Table 2.2-2. Comparison of Venue Locations – 2012 and 2014 Build Alternatives

Activity Area	2012 Draft EIS Build Alternative 1[1]	2012 Draft EIS Build Alternative 2[1]	2014 Build Alternative 3
Core Area / Main Campus Area	Classrooms, administration buildings, dining, and dormitories in secure, fenced campus on southwest portion of Parcel 21/20	Same as Build Alternative 1, located on LRA Parcel 10; secondary controlled access located on entrance from Military Road	Core Area classrooms and administration buildings located on LRA Parcel 9 and Grid Parcel
High Speed Driving Track Area	Three asphalt tracks, skid pad, and classrooms on central portion of LRA Parcel 9	Same as Build Alternative 1	Same as 2012 Build Alternative 1
Off-Road/Unimproved Driving Track Area	Several drive tracks of differing surfaces aligned with existing topography for varied conditions located on northern portion of LRA Parcel 9	Same as Build Alternative 1	Same as 2012 Build Alternative 1
Mock Urban Environment Area	Mock urban driving course and buildings, explosives simulation, rappel tower, classrooms located on eastern boundary of LRA Parcel 9	Same as Build Alternative 1, but located on eastern boundary of LRA Parcel 9 and on the Grid Parcel	Modified configuration and size at similar location as 2012 Build Alternative 2, on eastern boundary of LRA Parcel 9 and Grid Parcel
Explosives Training Environment	Explosives pads with blast fragment clearances, breaching walls, classrooms, and observation areas; VaARNG tank trail, Butterwood Road, would be relocated to northern portion of Parcel 21/20; access from new roads and existing tank trails	Same as Build Alternative 1	Same as Build Alternative 1
Firearms Training Environment	Firing range and classroom buildings located on southeast portion of Parcel 21/20, adjacent to existing VaARNG outdoor Range 8; access from Forrest Road and Trainfire Road	Same as Build Alternative 1	Same as 2012 Build Alternative 1 with modified configuration and reduced footprint
Service Area	Warehouse and Public Works buildings located on LRA Parcel 9	Warehouse and Public Works buildings located on Grid Parcel	Warehouse and Public Works building are consolidated in one building located on Grid Parcel
Driver Training Maintenance Area	Vehicle maintenance shop and 3-level parking garage located on LRA Parcel 9	Vehicle maintenance shop and 3-level parking garage located on Grid Parcel	Vehicle maintenance shop and 2-level parking deck reduced in size, located on Grid Parcel
Emergency Medical Technician/Emergency Medical Services	EMS located in Tactical Training Building (T01) on southeastern portion of LRA Parcel 9 on Military Road	Same as Build Alternative 1, located on Grid Parcel	Emergency Medical Technician located in the administrative building (A01) in the Core Area
General: Re-vegetation Plan	Minimize clearing of existing vegetation and replanting of native plant communities where possible on Parcel 21/20 (northern, southwestern, and southeastern portions) and LRA Parcel 9	Same as Build Alternative 1 on Parcel 21/20 (northern and southeastern portions), Grid Parcel, LRA Parcel 9, and LRA Parcel 10	Same as 2012 Build Alternative 1 on Parcel 21/20 (northern and southeastern portions), Grid Parcel, and LRA Parcel 9
Utilities	Town of Blackstone water and sewer, use of existing lines and construction of new lines;	Same as Build Alternative 1 on Parcel 21/20 (northern and southeastern portions), LRA	Same as 2012 Build Alternative 1 on Parcel 21/20 (northern and southeastern portions),

Table 2.2-2. Comparison of Venue Locations – 2012 and 2014 Build Alternatives

Activity Area	2012 Draft EIS Build Alternative 1[1]	2012 Draft EIS Build Alternative 2[1]	2014 Build Alternative 3
	Southside Electric Cooperative electric service with existing and new transmission lines; existing and new fiber optic lines on Parcel 21/20 (northern, southwestern and southeastern portions), and LRA Parcel 9. Use or relocation of existing utilities on LRA Parcel 9; new utilities on Parcel 21/20	Parcel 9, and LRA Parcel 10 Use or relocation of existing utilities on LRA Parcel 9 and Grid Parcel; new utilities on Parcel 21/20 and LRA Parcel 10	LRA Parcel 9, and Grid Parcel; Use or relocation of existing utilities on LRA Parcel 9 and Grid Parcel; new utilities on Parcel 21/20
Access and Circulation	Federal and state highways by personally operated vehicle or shuttle bus; internal circulation primarily by shuttle bus. Primary roadway access to the Main Campus from U.S. Route 460, Military Road, Fort Pickett Main Gate, to Main Campus CAC off Dearing Avenue Secondary access from U.S. Route 460, U.S. Route 460 Business, VA Route 40, Military Road, Main Gate or South Main Street, West Entrance Road, Fort Pickett West Gate, Military Road to the Main Campus CAC off Dearing Avenue Circulation from Military Road to Dearing Avenue to Main Campus. From Main Campus to Dearing Avenue to Military Road access points on LRA Parcel 9	Federal and state highways by personally operated vehicle or shuttle bus; internal circulation primarily by shuttle bus. Two roadway access points to the FASTC Main Campus. Access by the majority of students and employees from U.S. Route 460, Military Road, Fort Pickett Main Gate to Military Road access to Main Campus. Visitors and new students/employees access to the Main Campus CAC from U.S. Route 460, U.S. Route 460 Business, South Main Street, east on West Entrance Road to FASTC CAC off West Entrance Road Circulation via Military Road or Main Campus to West 10th Street to Dearing Avenue to Parcel 21/20 or Grid Parcel access points	Federal and state highways by personally operated vehicle or shuttle bus; internal circulation primarily by shuttle bus; Two primary roadway access options: 1) Access by the majority of students and employees from U.S. Route 460, Military Road, Fort Pickett Main Gate to E. 10th Street, and Dearing Avenue, 2) Access from U.S. Route 460, Military Road to VA Route 40 to Dearing Avenue Gate Secondary access same as 2012 Build Alternative 1 Circulation via Ring Road on LRA Parcel 9 or from loop road to Dearing Avenue to Parcel 21/20 via Foley Road

Note: [1]*2012 Build Alternatives are shown for comparison purposes and are no longer under consideration.*

2.3 Preferred Alternative

Each alternative was evaluated for its ability to meet the purpose and need of the Proposed Action while avoiding environmental impacts to the maximum extent feasible.

The No Action Alternative would not have environmental impacts, but would not meet the purpose and need for the Proposed Action. This alternative is not feasible but was included in this Supplemental Draft EIS to provide a baseline for analysis of the build alternatives.

Build Alternative 3 would meet the purpose of the Proposed Action by consolidating existing dispersed training functions into a single suitable location. Build Alternative 3 satisfies the need to meet the increased demand for well-trained security personnel.

Is there a Preferred Alternative?

Build Alternative 3 best meets purpose and need and is the Preferred Alternative.

Build Alternative 3 includes three site parcels (Parcel 21/20, Grid Parcel, and LRA Parcel 9) and several areas to be shared with the ARNG. Build Alternative 3 meets the need for a large site with sufficient developable land to construct all the FASTC program facilities with adequate safety and security buffers. The Build Alternative 3 site plan would provide an opportunity to reduce impacts to wetlands and vegetation as compared with the 2012 alternatives, maximize the use of site topography, and enable reuse of the existing street grid and stream crossings on the Grid Parcel.

Build Alternative 3 would have beneficial socioeconomic impacts on the town, county, and region by creating 1,633 temporary construction jobs and 783 FASTC-related permanent jobs. Annual revenue would be generated in the eight-county study area, with most revenue generated in Nottoway County and Chesterfield County because of proximity to FASTC and/or the relocation of FASTC employees. The economic analysis indicated that business growth may be stimulated by Build Alternative 3, including hotels or motels and food services, particularly in the commercially zoned areas in the town of Blackstone and Nottoway County.

Alternatives were vetted through GSA's Design Excellence Program to ensure that the project would be consistent with the guiding principles for the development of federal facilities. Although not planned at this time, Build Alternative 3 would provide adequate room for future growth, without significant environmental impact and in accordance with the principles of GSA Design Excellence, should expansion ever be needed.

Build Alternative 3 would provide a connection and adjacency between LRA Parcel 9 and Parcel 21/20 through the Grid Parcel; this would promote functional efficiency and ensure compatibility of adjacent land uses.

Based on the ability of Build Alternative 3 to best meet the purpose and need of the Proposed Action while avoiding environmental impacts to the maximum extent feasible, Build Alternative 3 is the Preferred Alternative.

2.4 Comparison of Environmental Impacts of the Alternatives

2.4.1 Natural Environment

Build Alternative 3 would have direct and indirect adverse impacts to wetlands, streams, and forest, but they are reduced as compared with the 2012 build alternatives. With impact minimization and mitigation measures, these impacts would not be significant. With the implementation of conservation measures, Build Alternative 3 may affect the federally proposed endangered northern long-eared bat (NLEB). GSA has initiated conferencing with the U.S. Fish and Wildlife Service (USFWS), and the conclusions of the USFWS conference will be included in the Final EIS. Build Alternative 3 would have no effect on state or other federal threatened or endangered species or result in takes, as defined under the Bald and Golden Eagle Protection Act.

Under the No Action Alternative, the proposed FASTC would not be constructed and no impacts on the natural environment would occur.

2.4.2 Built Environment

Build Alternative 3 would have beneficial socioeconomic impacts. Total jobs created and revenue generation would be less than the 2012 build alternatives; however, the potential for business development may result in additional revenues in the study area. GSA has determined that Build Alternative 3 would have no adverse effect on historic properties protected under the National Historic Preservation Act (NHPA). GSA is consulting with the State Historic Preservation Officer (SHPO) at the Virginia Department of Historic Resources (VDHR). Section 106 will be complete prior to the issuance of the Final EIS and the Record of Decision, and the results will be included in the Final EIS.

Build Alternative 3 would have minor noise impacts in the northwest portion of Fort Pickett as a result of a minor increase in the frequency of peak explosive noise events, most noticeably in the area northwest of the Fort Pickett boundary.

Build Alternative 3 would not have significant adverse traffic impacts and would not impact the capacity of the Fort Pickett Main Gate during the a.m. or p.m. peak periods. Under Build Alternative 3 Option A, the turning lane analysis determined that the additional project traffic would result in the existing turning lane storage being less than VDOT design standards at one intersection. Under Option B, the turning lane analysis determined that the additional project traffic would result in the existing turning lane storage being less than VDOT design standards at three intersections. To address VDOT turning lane storage criteria, additional study by VDOT of potential turning lane improvements would be warranted.

Regarding the implementation of improvements, should VDOT determine they are warranted, GSA and DOS have no authority to fund or implement roadway improvements outside property boundaries. Intersection improvements would be under the jurisdiction of VDOT. Funding and implementation of improvements would have to occur through the appropriate Commonwealth of Virginia transportation organizations. Accordingly, state and/or local governments would determine whether improvements identified would be implemented.

Build Alternative 3 would have an adverse impact to recreational hunting access during the training schedule. Build Alternative 3 would have a moderate impact on utilities. The town of Blackstone

maintains a water and wastewater treatment capacity reserve in the event Fort Pickett becomes fully mobilized. Total demand for potable water is not estimated to exceed the existing permitted capacity of the town of Blackstone water treatment plant. However, the existing permitted capacity of the WWTP would not be sufficient to handle the projected cumulative flows from Build Alternative 3 and other reasonably foreseeable future projects under a full mobilization scenario.

Under the No Action Alternative, the projected beneficial economic impacts associated with the proposed FASTC would not be realized. The traffic turning lane analysis of the No Action Alternative concluded that in 2018, without the proposed project, two intersections will have turning lane storage that does not meet VDOT design criteria.

Table 2.4-1. Summary of Environmental Impacts of the Alternatives

Resource	No Action Alternative	Build Alternative 3 (Preferred Alternative)
Climate	No impact	**No impact**
Topography	No impact	**No significant impact** Minor localized changes
Geology and Soils	No impact	**No significant impact** Soil disturbance 400 acres No significant impacts on prime farmland
Water Resources	No impact	**No significant impact** Wetland impacts 5.72 acres (4.86 direct fill/0.86 clearing) Stream impact 2,489 linear feet 100-foot wetland buffer impacts 48 acres Permitting and mitigation reduce impacts to less than significant Net increase in impervious surface 138 acres Compliance with policies and regulations minimize impacts Net increases in stormwater runoff offset by mitigation; maintains predevelopment site hydrology No impacts to groundwater or floodplains
Biological Resources	No impact	**No significant impact** Vegetation clearing 406 acres (365 forest; 41 shrub/grass); restoration of 180 acres (87 forest) Temporary and minor permanent wildlife habitat impacts May affect northern long-eared bat; conservation measures would be implemented; USFWS conference conclusions pending and will be included in the Final EIS. No effect on other threatened or endangered species; USFWS concurrence received No “takes” of bald or golden eagles; USFWS concurrence received
Cultural Resources/NHPA	No impact	**No significant impact** No direct or indirect adverse effects on NRHP-eligible historic properties Consultation with the SHPO is ongoing
Air Quality	No impact	**No significant impact** Temporary and long-term increases in emissions No direct or indirect significant impact on local/regional air quality
Noise	No impact	**No significant impact** Short-term construction noise Long-term, minor operations noise increase Long-term, minor increase in peak noise events northwest of Fort Pickett border
Land Use and Zoning	No impact	**No significant impact** Adverse impacts to recreational land use Change in land use on LRA Parcel 9 from industrial to federal Consistent with Nottoway County Comprehensive Plan and town of Blackstone zoning

Table 2.4-1. Summary of Environmental Impacts of the Alternatives

Resource	No Action Alternative	Build Alternative 3 (Preferred Alternative)
Socioeconomics	No impact; no beneficial socioeconomic impacts	**No significant adverse impact** Beneficial socioeconomic impacts Mitigated displacement impacts No disproportionate impacts to environmental justice populations No disproportionate impacts to the health and safety of children
Traffic and Transportation	Turning lane storage less than VDOT design criteria in 2018, without proposed project: • Cox Road/Military Road • Darvills Road/Military Road	**No significant impact** Turning lane storage less than VDOT design criteria: • U.S. Route 460/Cox Road (Option A or B) • Darvills Road/Military Road (Option B) • Darvills Road/Dearing Avenue (Option B) No adverse impacts at Fort Pickett Main Gate or the West Gate
Recreation	No impact	**No significant impact** Adverse impact to recreational hunting access during training schedule (1,210 acres of hunting area and 36 bow hunting tree stands) Minor impacts to other recreational resources No impacts on fishing activities Minor noise and light impacts at RV campground
Utilities and Infrastructure	No impact	**No significant impact** Demand for water, wastewater treatment, telecommunication, and electricity would not exceed existing capacities; however, adverse effect to wastewater treatment capacity may occur in the event of full mobilization of Fort Pickett
Public Health and Safety	No impact	**No significant impact** No adverse impacts on the police department Moderate potential for direct adverse impacts to fire emergency response times Minimal potential for impacts to public safety from training operations No direct or indirect impacts to environmental health No risk of transmission of notifiable diseases
Aesthetic and Visual Resources	No impact	**No significant impact** Minor changes to aesthetics and visual resources. Impacts would be minimized with forest buffers
Hazardous Substances	No impact	**No significant impact** Procedures would be in place for safe handling, use, and disposal of existing or introduced hazardous substances and waste during demolition, construction, and operations
Cumulative Impacts	No impact	**No significant impact** No or minor cumulative impacts to climate, topography, geology and soils, biological resources, cultural resources, air quality, noise, land use and zoning, visual resources, or hazardous materials and waste Moderate cumulative impacts to water resources, recreation, utilities, and public health and safety (fire response) Cumulative short-term construction traffic impacts Beneficial cumulative economic impacts

CHAPTER 3 AFFECTED ENVIRONMENT

This chapter provides a description of the existing environment that could be affected by the Proposed Action: the acquisition of land and the development of the Foreign Affairs Security Training Center (FASTC) Program. The study area consists of the proposed site comprising a total of 1,381 acres. The site includes three adjacent parcels: Parcel 21/20 (549 acres), the Grid Parcel (74 acres), and Local Redevelopment Authority (LRA) Parcel 9 (727 acres). In addition, 12 acres between Parcel 21/20 and Dearing Avenue, needed for the relocation of the existing Butterwood Road tank trail, is included in the affected environment descriptions for Parcel 21/20 because the land is immediately adjacent to the parcel. The site also includes the use of 19 acres at Fort Pickett Range 8. Because no construction is proposed for this area, it is not included in the affected environment of the site unless resources are present that could be affected by the additional use. For certain resources, the study area also includes the surrounding area of Fort Pickett, Nottoway County and adjacent counties depending on the extent of the potentially affected area. These study areas are discussed individually or jointly herein, as appropriate for the resource. In compliance with the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations, the scope of analysis in this Supplemental Draft Environmental Impact Statement (EIS) focuses on those resources potentially subject to impacts. This chapter also provides definitions for the resources that could potentially be affected by the build alternatives. Public comments received, during initial public scoping in 2011 and during the 2014 comment period, were considered in the determination of resources to be considered in this Supplemental Draft EIS.

3.1 NATURAL ENVIRONMENT

3.1.1 Climate

Climate is the prevailing weather conditions of a region. Nottoway County is the study area for this resource.

Nottoway County is located in the lower piedmont and has a subtropical climate with mild winters and hot humid summers. The annual mean temperature is 58 degrees Fahrenheit (°F), with an annual mean maximum temperature of 68°F and an annual mean minimum temperature of 48°F. Temperatures rise above 90°F an average of 32 days per year. The first frost typically occurs in late October and the last frost occurs in mid-April. The region has an average growing season of 191 days. The mean winter temperature is 43.4°F and the mean summer temperature is 76.7°F.

Climate

- Subtropical
- Mean Temperature 58° F
- Mean Annual Precipitation 44.85 inches
- Average of 15.3 inches of snow a year

Mean annual precipitation is 44.85 inches, with an average low of 2.95 inches in the months of January and October and an average high of 5.85 inches in July. The area receives snow an average of six days a year with an average of 12 inches of snow each year (Nottoway County 2006). Between 2000 and 2010, Nottoway County experienced six separate periods of severe drought, totaling approximately 36 months. These

periods of drought achieved a Palmer Drought Index of 3.0-3.9, where conditions can result in the loss of crops or pasture with water shortages common and water restrictions imposed (Drought Monitor 2010). Winds are typically out of the southwest but can vary with changing weather patterns. Tornadoes have occurred approximately once every seven years in the spring and late fall, and yearly from 2002 to 2006, as recorded between 1966 and 2014 (The Tornado Project 2014).

3.1.2 Topography

Topography describes the surface relief of the land and includes elevation, slope and other general surface features. The study area for this resource is the land within the study area boundary for each parcel.

The regional topography of the area consists of rolling terrain that is dissected by the Nottoway River and its tributaries. Elevation on the parcels ranges from 290 to 410 feet above mean sea level, according to United States (U.S.) Geological Survey topographic maps. Topography and slopes greater than 15% are depicted in **Figure 3.1-1**. Most of the site is heavily forested and moderately to gently sloping with over 95% of the site sloping less than 10% (Schnabel Engineering 2012a).

Parcel 21/20

Elevations on Parcel 21/20 range between 290 and 400 feet above mean sea level with the lowest elevations occurring along Birchin Creek and its tributaries. From Birchin Creek the land slopes upwards towards the north, east, and west at varying degrees to maximum elevations of approximately 400 feet.

Grid Parcel

The Grid Parcel is located between 350 and 400 feet above mean sea level. The northern portion of the parcel is relatively flat with gradual slopes towards the east. Topography along the southern portion of the parcel is also relatively flat with gradual slopes northeast towards Birchin Creek.

LRA Parcel 9

LRA Parcel 9 is located between 340 and 410 feet above mean sea level. The eastern portion of the parcel is relatively flat with gradual slopes towards the east and west. Topography along the western portion of the parcel is more variable and site topography slopes towards the north, east, and west from an unnamed tributary to Hurricane Branch.

3.1.3 Geology and Soils

Geologic resources include the bedrock material underlying the land area. Geologic factors influence soil stability, bedrock depth, and seismic properties. Soil is the unconsolidated material above bedrock. The study area for this resource is the land within the study area boundary for each parcel.

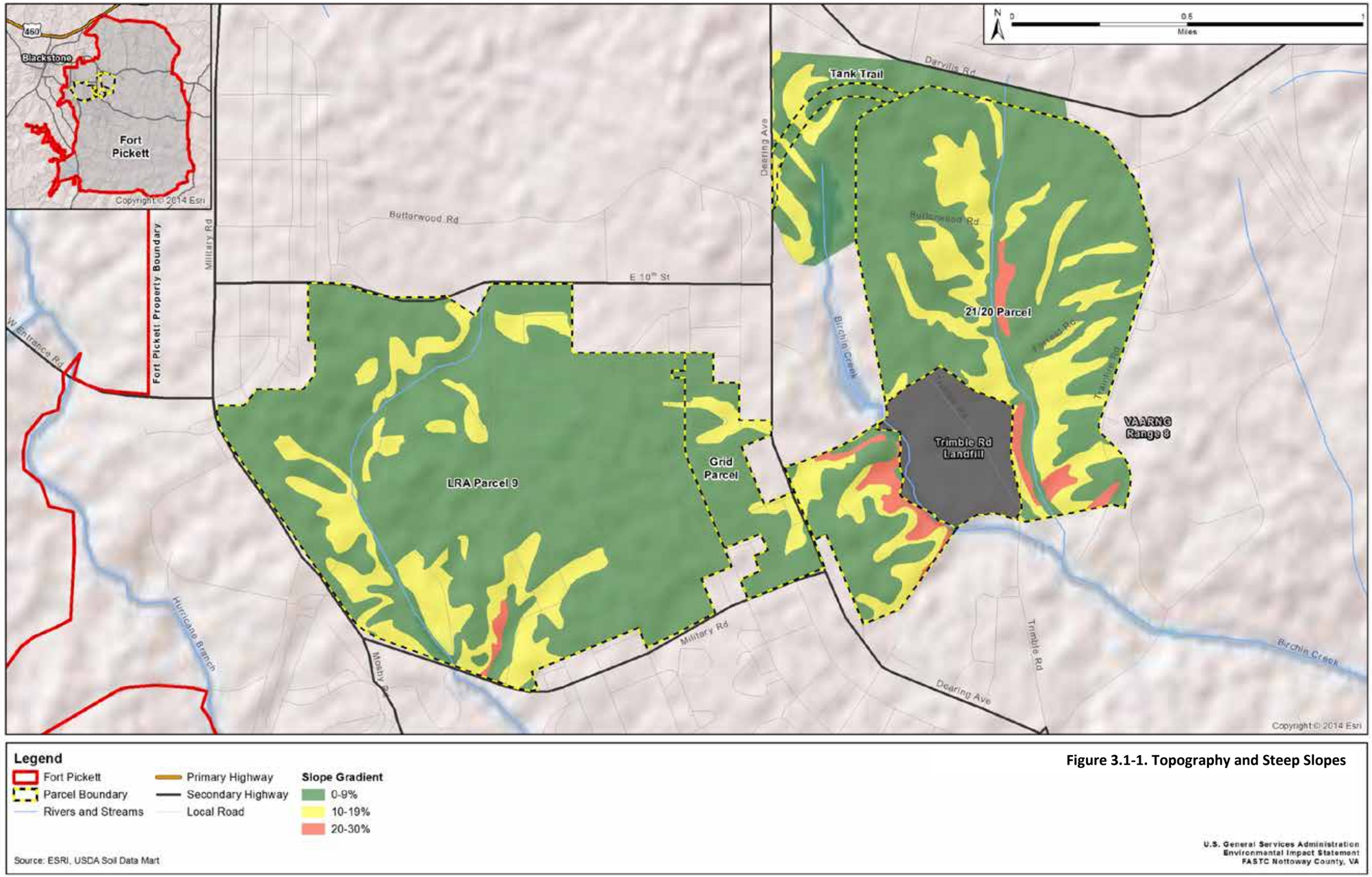

Figure 3.1-1. Topography and Steep Slopes

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3.1.3.1 Geology

The study area is located in the Piedmont Physiographic Region of Virginia. The Piedmont region is primarily composed of igneous and metamorphic rock of Precambrian and Paleozoic Age. Most of the geologic rock formations found in the study area consist of gneissic granite and/or granodiorite of Proterozoic age (Schnabel Engineering 2012a). Although not encountered in geotechnical testing, a geotechnical study completed in 2012 documented diabase dikes trending north-northwest (**Figure 3.1-2**) that bisect Parcel 21/20 and the Grid Parcel (Schnabel Engineering 2012a). Diabase is volcanic bedrock that is difficult to excavate. Geotechnical borings indicate that bedrock occurs at less than 10 feet below the surface in some areas (Schnabel Engineering 2012a). The bedrock is covered with a layer of sands, silts, and clays. Intense weathering has caused the bedrock to appear at different depths throughout the study area.

Geology and Soils

- Geologic rock formations of gneissic granite and/or granodiorite; diabase dikes
- Bedrock is covered with a layer of sands, silts, and clays
- Low seismic hazard area
- Dominant soils types are sandy loams
- Low to moderate potential for erosion

According to the 2014 U.S. Geological Survey (USGS) Earthquake Hazard Map, the Army National Guard Maneuver Training Center Fort Pickett (Fort Pickett) has a value between 0.06% and 0.10% of gravity earthquake peak ground acceleration that has a 2% chance of being exceeded in 50 years (USGS 2014). Peak ground acceleration is a measure of earthquake acceleration on the ground and is a measure of how hard the earth shakes in a given geographic area (the intensity of an earthquake). An acceleration of 0.10% or more is perceptible to people. Therefore, there is a 2% probability that a perceptible earthquake could occur at Fort Pickett in the next 50 years. As a result, the earthquake hazard at Fort Pickett is considered to be low. The Federal Emergency Management Administration (FEMA) has also developed Earthquake Hazard Maps that show Fort Pickett in a seismic design category B area. According to FEMA, seismic design category B areas experience moderate shaking, with heavy furniture being moved and slight damage (FEMA 2012).

3.1.3.2 Soils

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) has mapped the soils on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 (**Figure 3.1-2**). The dominant soil types on the map are sandy loams with varying degrees of topography and are considered well drained. Soil types of the study area are listed in **Table 3.1-1**. Observations based on subsurface exploration found soils that were coarse grained clayey sand and silty sand, which have moderate infiltration rates (Schnabel Engineering 2012a). There are existing soils found on the study area that are not suitable for support of structures and would need to be excavated to expose the more suitable soils below.

Table 3.1-1. Soils

Map Unit Symbol	Map Unit Name	Hydric	Farmland	K Factor[1]	Parcel 21/20	Grid Parcel	LRA Parcel 9
Ac	Appling course sandy loam, undulating phase		X	0.24	X	X	X
Ad	Appling course sandy loam, eroded undulating phase		X	0.24	X		X
Ae	Appling course sandy loam, rolling phase		X	0.24	X	X	X
Af	Appling course sandy loam, eroded rolling phase		X	0.24	X		X
Ca	Cecil clay loam, eroded undulating phase			0.28			
Ce	Cecil course sandy loam, undulating phase		X	0.15	X	X	X
Cg	Cecil course sandy loam, hilly phase			0.28	X		
Cp	Colfax sandy loam, undulating phase			0.17	X		X
Da	Durham course sandy loam, undulating phase		X	0.17	X		X
Db	Durham course sandy loam, rolling phase		X	0.17			X
Lg	Louisburg sandy loam, undulating phase			0.24			X
Lh	Louisburg sandy loam, rolling phase			0.24	X		X
Lk	Louisburg sandy loam, eroded rolling phase			0.24	X		
Lm	Louisburg sandy loam, hilly phase			0.24	X		
Ln	Louisburg sandy loam, eroded hilly phase			0.24	X		
MDL	Made Land			-			X
Mn	Mixed alluvial land	X		0.28	X		X
Sa	Seneca sandy loam		X	0.28	X		X
Sc	Stoney land			-			X
W	Water			-	X		X
We	Wilkes sandy loam, rolling phase			0.24	X		
Wg	Wilkes sandy loam, hilly phase			0.24	X		X
Wh	Wilkes sandy loam, eroded hilly phase			0.24	X		X
Wk	Worsham sandy loam	X		0.28	X	X	X

Source: *USDA 2010*

Note: [1] *K factor indicates the susceptibility of a soil to sheet and rill erosion by water. The K factor is on a scale of 0.02 to 0.69 with 0.02 being the least susceptible to sheet and rill erosion and 0.69 being the most susceptible (USDA 2010).*

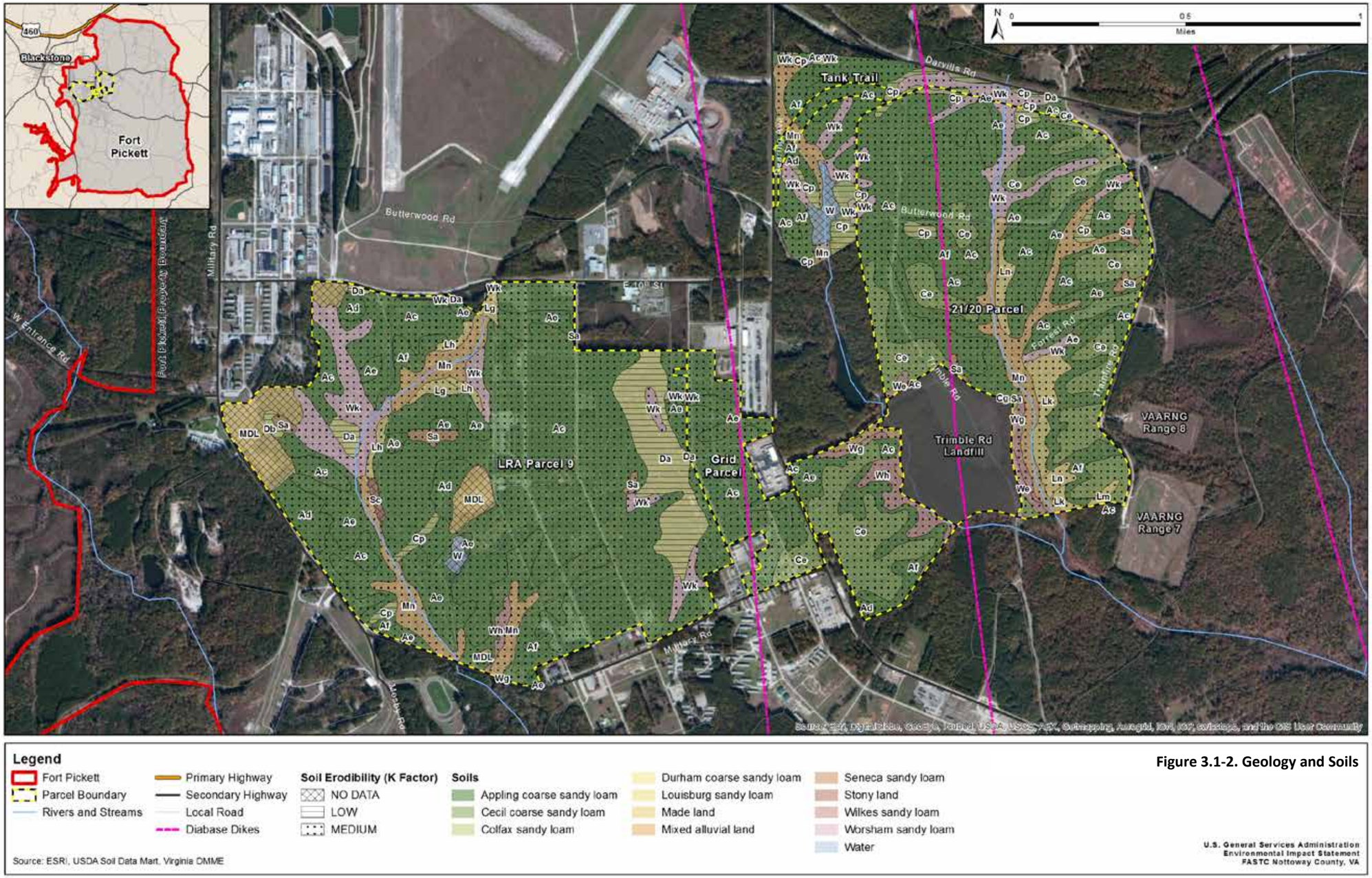

Figure 3.1-2. Geology and Soils

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Parcel 21/20

Approximately 19 soil types are present on Parcel 21/20, the majority of which are sandy loams. Loam soils are soils that contain a relatively equal mixture of sand and silt, and a somewhat smaller proportion of clay. Of these soils, two are hydric (moist) and 10 are prime farmland soils or farmland soils of statewide importance. Farmland soils are discussed further in **Section 3.1.3.3**. Geotechnical field work on Parcel 21/20 indicated that forest litter, root matter, and topsoil are present from about 1 to 12 inches.

The dominant soil types on Parcel 21/20 are Appling course sandy loam, undulating phase, which is found largely in the northern portion of the parcel, and Cecil course sandy loam, undulating phase, which occupies large areas in the southern and eastern portions of the parcel. These two soil type comprise nearly 50% of Parcel 21/20.

There are two hydric soils present on Parcel 21/20: Worsham sandy loam and mixed alluvial land. These poorly drained soils are associated with streams, drainage ways, and the small floodplains adjacent to the streams. These two soil types comprise approximately 10% of the 21/20 Parcel. Other small inclusions of hydric soils (partially hydric) are likely present along the smaller streams and wetlands, but these areas are too small to be included on the soil maps.

The soils on Parcel 21/20 have low to moderate potential for erosion based on the K factor provided in **Table 3.1-1**. The K Factor indicates susceptibility of a soil to erosion where 0.02 is the least susceptible to sheet and rill erosion and 0.69 is the most susceptible (USDA 2010).

Archaeological field work on Parcel 21/20 has indicated that there has been a great deal of disturbance to the soils due to previous land uses (refer to **Section 3.2.1**). Fox holes, ditches, push piles, trenches, former ranges, and old roads were observed.

Grid Parcel

Approximately four soil types are present on the Grid Parcel, of which one is hydric and the remaining three are prime farmland soils or farmland soils of statewide importance. Farmland soils are discussed further in **Section 3.1.3.3**.

Appling course sandy loam, undulating phase is the dominant soil type on the Grid Parcel, comprising approximately 51% of the parcel area. Generally speaking, this soil type dominates the central portion of the parcel.

The hydric (moist) soil present on the parcel, Worsham sandy loam, is described under Parcel 21/20.

LRA Parcel 9

Geotechnical field work on LRA Parcel 9 indicated that forest litter, root matter, and topsoil are present, ranging in depth from about 1 to 15 inches. Geotechnical investigations also encountered asphalt, concrete, crushed stone, demolished foundations, and abandoned utilities while taking borings.

Approximately 17 soil types are present on LRA Parcel 9. Of these, two are hydric and seven are prime farmland soils or farmland soils of statewide importance. Farmland soils are discussed further in **Section 3.1.3.3**.

Appling course sandy loam, undulating phase is the dominant soil type on LRA Parcel 9 and comprises approximately 52% of the parcel. This soil type dominates the eastern portion of the parcel.

There are two hydric (moist) soils present on the parcel: Worsham sandy loam and mixed alluvial land, which are the same as those described under Parcel 21/20. Other small inclusions of hydric soils (partially hydric) are likely present along the smaller streams and wetlands, but these areas are too small to be included on the soil maps.

Soils on LRA Parcel 9 have low to moderate potential for erosion (K factor), as summarized in **Table 3.1-1** (USDA 2010). Geologic field work on LRA Parcel 9 has indicated that there has been a great deal of disturbance to the soils due to previous land uses and demolition activities.

3.1.3.3 Prime Farmland

Prime farmland soils are defined under the Farmland Protection Policy Act (FPPA) as those that "have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and are also available for these uses," and have the appropriate conditions needed to economically produce sustained high yields of crops when treated and managed. Farmland soils of statewide importance are defined under the FPPA as "farmland that is not classified as prime or unique farmland, but is of statewide or local importance for the production of food feed, fiber, forage, or oilseed crops", as determined by state or local government agencies, and approved by the Secretary of Agriculture. Prime farmland soils and farmland soils of statewide importance are depicted in **Figure 3.1-3**.

Legend

- Fort Pickett
- Rivers and Streams
- Primary Highway
- Secondary Highway
- Local Road

Farmland Soil Class

- Prime farmland soils
- Farmland soils of statewide importance

Source: ESRI, USDA Soil Data Mart

Figure 3.1-3. Prime Farmland Soils

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The FPPA was introduced to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. The FPPA is based on farmland designation rather than whether the area is in agricultural use[9]. To the extent practicable, the FPPA ensures federal programs are compatible with private, state and local government programs and policies to protect farmland. FPPA does not cover private construction subject to federal permitting and licensing, projects planned and completed without any assistance from a federal agency, federal projects related to national defense during a national emergency, and projects proposed on land already committed to urban development[10].

According to the Nottoway Comprehensive Plan, in 1997 there were 73,573 acres of land devoted to agriculture in the county. By 2002 that number had dropped to 71,442 acres (Nottoway County 2006).

Parcel 21/20

Ten soil types on Parcel 21/20 are designated by USDA NRCS as either prime farmland soils or farmland soils of statewide importance. There are six prime farmland soils on Parcel 21/20 including: Appling-Mattaponi complex (902B), Appling coarse sandy loams, undulating phase and eroded undulating phase, Cecil coarse sandy loam, Durham coarse sandy loam, and Seneca sandy loam. In addition, there are four soils classified as farmland of statewide importance including: Wedowee gravelly sandy loam (929C), Appling coarse sandy loams, rolling phase and eroded rolling, and Cecil coarse sandy loam (USDA 2010). There are 311 acres of farmland soils on the Parcel 21/20 study area.

Grid Parcel

Three soils types on the Grid Parcel are classified as prime farmland soils. They include Appling coarse sandy loam, undulating phase and eroded rolling phase, and Cecil coarse sandy loam. There are 74 acres of farmland soils on the Grid Parcel.

LRA Parcel 9

Six soil types on LRA Parcel 9 are designated by NRCS USDA as prime farmland or as farmland of statewide importance. Three soils on LRA Parcel 9 classified as prime farmland include Appling coarse sandy loam, undulating phase and eroded rolling phase, Durham coarse sandy loam undulating phase, and Seneca sandy loam. Two soils on LRA Parcel 9 classified as farmland of statewide importance include Appling coarse sandy loam, eroded rolling phase and Durham coarse sandy loam rolling phase. There are a total of 577 acres of farmland soils on LRA Parcel 9.

3.1.4 Water Resources

Water resources include both surface and subsurface water. For the purposes of this Supplemental Draft EIS, water resources include the following topics: surface water, groundwater, water quality, wetlands, and floodplains.

[9] 7 United States Code (U.S.C.) 4201
[10] 7 U.S.C. 4201–4209 and 7 U.S.C. 658

The study area for water resources includes Parcel 21/20, the Grid Parcel, LRA Parcel 9, and the immediate downstream areas of Birchin Creek and Hurricane Branch. Water resources are described individually for each parcel. Because the underlying geology is consistent across the study area, groundwater resources are described jointly for the three parcels.

3.1.4.1 Surface Water

Lakes, ponds, impoundments, rivers, and streams comprise surface water resources that are important for economic, ecological, recreational, and human health reasons.

According to the U.S. Army Corps of Engineers (USACE), streams are drainage features that may contain permanent flows (perennial streams), flows during much of the year but drying seasonally (intermittent streams), or flows only after storm events (ephemeral streams). Ponds are open water bodies (USACE 1987).

The U.S. is divided and subdivided into successively smaller hydrologic units, which are classified into six levels: regions, sub-regions, basins, sub-basins, watersheds, and sub-watersheds. The study area lies in the South Atlantic-Gulf Region (hydrologic unit code [HUC] 03); Chowan-Roanoke Sub-region (HUC 0301); Albemarle-Chowan Basin (HUC 030102); Nottoway Sub-basin (HUC 03010201); Tommeheton Creek-Nottoway River Watershed (HUC 0301020102) (USGS 2012) (**Figure 3.1-4**). All of the site parcels contain surface water features including headwater intermittent and perennial streams.

Water Resources of Study Parcels

- Birchin Creek
- Unnamed tributaries to Birchin Creek and Hurricane Branch
- Compass Pond
- 86.6 acres of wetlands
- No 100-year or 500-year floodplains
- Shallow ground water
- No drinking water wells

Parcel 21/20

Parcel 21/20 lies within the Tommeheton Creek Sub-watershed (HUC 030102010204), a sub-watershed to the Nottoway River Watershed, and contains both headwater intermittent and perennial streams. There are approximately 32,620 linear feet (lf) of streams in the Parcel 21/20 study area. Birchin Creek flows from north to south with several unnamed tributaries entering as it moves downstream (**Figure 3.1-5a)**. Birchin Creek flows off of Parcel 21/20 into Tommeheton Creek, eventually draining into the Nottoway River approximately four miles south of the parcel's southern boundary. The substrate within Birchin Creek is predominantly composed of unconsolidated sand and silt with occasional runs of exposed bedrock.

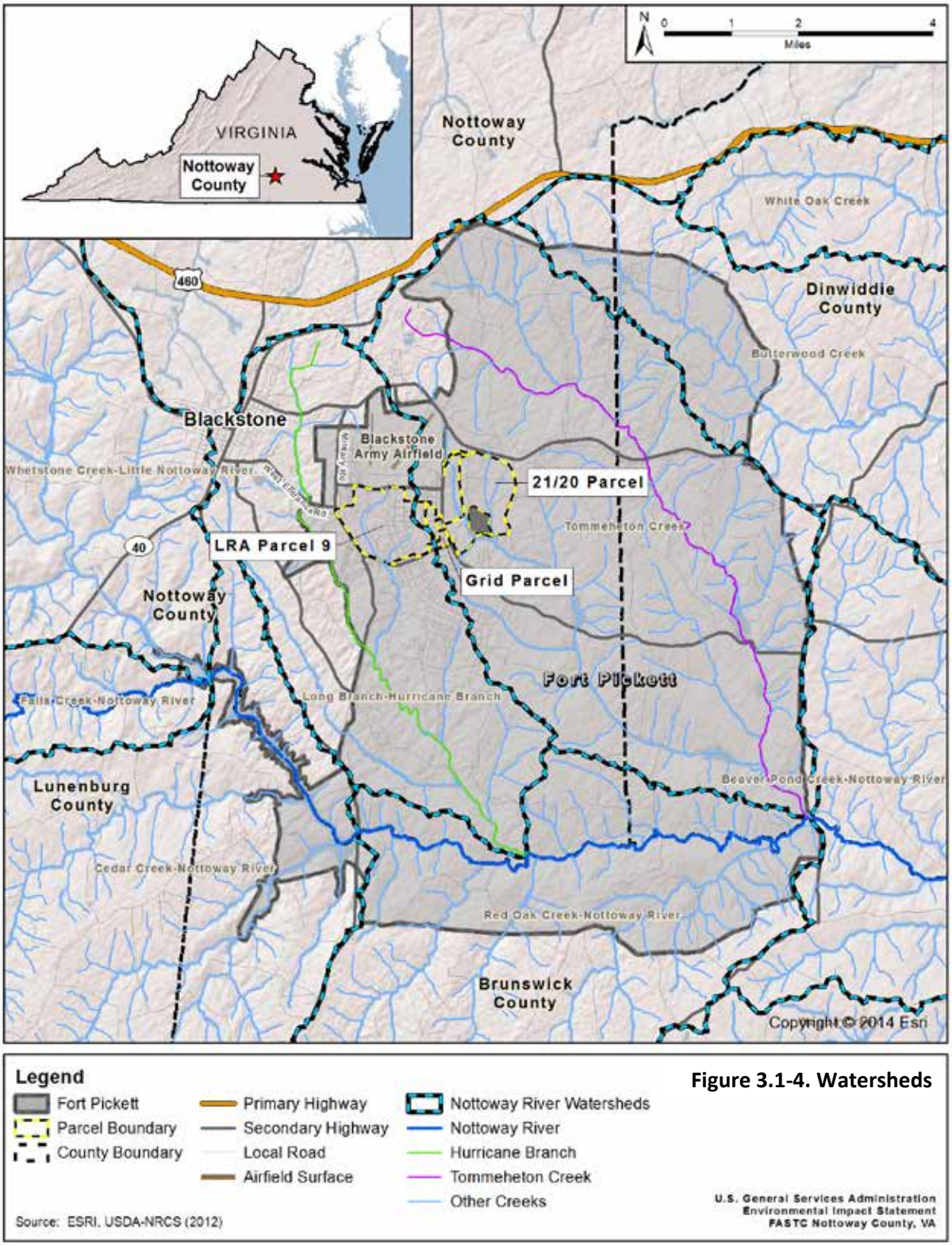

Figure 3.1-4. Watersheds

Grid Parcel

The Grid Parcel lies within the Tommeheton Creek Sub-watershed (HUC 030102010204) and contains four unnamed streams, which confluence onsite to create two second order streams. Both streams generally flow in an easterly direction, passing under Dearing Avenue. East of the Grid Parcel the two streams confluence into an unnamed stream that is a tributary to Birchin Creek. There are a total of 3,884 lf of streams on the Grid Parcel.

Based on visual observations, a portion of the northernmost stream is potentially perennial, but the majority of streams onsite appear to be seasonally intermittent and lack swift flowing water. The stream bottoms are primarily comprised of fine grained sediments (i.e., silt).

LRA Parcel 9

LRA Parcel 9 lies within the Long Branch-Hurricane Branch sub-watershed (HUC 030102010202), which is a sub-watershed to the Nottoway River watershed. The parcel contains several small streams and a small pond named Compass Pond. An unnamed tributary to Hurricane Branch flows in a southerly direction through LRA Parcel 9, beginning as an intermittent stream within the northern boundary of the parcel and becoming a perennial stream **(Figure 3.1-5b)**. There are several unnamed tributaries within the parcel boundary that drain into the main stem of this unnamed tributary. There are a total of 27,729 lf of streams on the LRA Parcel 9.

3.1.4.2 Groundwater

Subsurface water, referred to as groundwater, is typically found in areas known as aquifers. Aquifers are areas of mostly high porosity soil where water can be stored between soil particles and within soil pore spaces. Groundwater is used for water consumption, agricultural irrigation, and industrial applications.

Groundwater within the study area generally resides in multiple thin aquifers within the upper soil layers and in deeper bedrock aquifers. The water table typically begins to fall in April and is replenished during the winter months. Most groundwater is found at depths of less than 150 feet, with the majority found in the upper 30 feet (Virginia Department of Military Affairs [VDMA] 2011). Groundwater flow tends to follow the slope topography. During a geotechnical study, groundwater at Parcel 21/20 and LRA Parcel 9 was encountered between 1 and 34 feet beneath ground surface (Schnabel Engineering 2012a). Due to soil types present on these parcels, it is expected that shallow groundwater is due to perched groundwater above a less permeable clay layer and was only found in limited extent. Stabilized groundwater level readings taken from water observation wells were measured between 28.1 and 34.1 feet below ground surface. Variations in groundwater conditions are expected based on location and elevation across the site, seasonal conditions, and weather patterns (Schnabel Engineering 2012a).

Legend

- Fort Pickett
- Site Boundary
- Major Road
- Local Road
- Rivers and Streams

Jurisdictional Wetland Type

- Wetland
- Isolated DEQ Wetland
- Upland Island
- 100-ft Wetland Buffer

Source: ESRI, USACE/VADEQ Jurisdictional Determination (2012)

Figure 3.1-5a. Wetlands on Parcel 21/20

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Figure 3.1-5b. Wetlands on Grid Parcel and LRA Parcel 9

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No drinking water wells are located in the study area. The nearest public drinking-water wells are located approximately 5,000 feet west of LRA Parcel 9, west of Hurricane Branch (Tetra Tech 2005). This area is hydrologically separated from the study area by Hurricane Branch and groundwater at this location is not likely to be affected by activities in the study area. The remaining population in the vicinity of the study area is serviced by a public water system. The water source for this system is a surface water intake on the Nottoway River near the southwestern boundary of Fort Pickett. This system is described in detail in **Section 3.2.8**. There is a small residential area located along West Entrance Road.

The shallow nature of the groundwater in the study area makes it relatively susceptible to contamination. As discussed in the hazardous substances section of this document (**Section 3.2.11**), environmental baseline survey site 13 (EBS 13) (within the LRA Parcel 9) was subject to remedial action and monitoring as a result of contamination associated with the former recycling compound, specifically the Paint Pit (Tetra Tech 2005). Land use controls are in place to protect against groundwater usage/contact until contaminant concentrations are brought into compliance with regulatory levels. Groundwater monitoring is also occurring on the northwest portion of LRA Parcel 9 in association with adjacent remediation site BCT-22. This site was a former fueling station where petroleum releases have affected groundwater quality. Methyl tertiary butyl ether (MTBE), a gasoline additive, has been detected in groundwater at the site and in an associated monitoring well on LRA Parcel 9. In addition, a groundwater monitoring program is ongoing for the Trimble Road Landfill (adjacent to Parcel 21/20). Additional information on BCT-22, EBS 13, and the landfill is provided in **Section 3.2.11.2**.

3.1.4.3 Water Quality

Water quality refers to the suitability of water for a particular use based on selected physical, chemical, and biological characteristics. Potential uses considered include potable water, irrigation, and water able to support life. For the purposes of this Supplemental Draft EIS, water quality is considered with the statutory requirements regarding water quality conditions.

Water quality is regulated under the Federal Water Pollution Control Act (FWPCA), as amended by the Clean Water Act (CWA). The CWA prohibits spills, leaks, or other discharges of oil or hazardous substances into the waters of the U.S. in quantities that may be harmful. Direct discharges of effluents are regulated under the CWA through National Pollutant Discharge Elimination System (NPDES) permit program administered by the U.S. Environmental Protection Agency (USEPA) or under state NPDES programs approved by the USEPA. The CWA also requires each state to establish water quality standards for its surface waters derived from the amount of pollutants that can be assimilated by a body of water without deterioration of a designated use.

Designated uses are identified by considering the use and value of the water body for public water supply, for protection of fish, shellfish, and wildlife, and for recreational, agricultural, industrial, and navigational purposes. Each water body does not necessarily require a unique set of uses. Instead, the characteristics necessary to support a use can be identified so that water bodies having those characteristics can be grouped together as supporting particular uses (USEPA 2012b). There are six designated uses in Virginia: Aquatic life, Fish consumption, Public water supplies (where applicable), Recreation (swimming), Shellfishing, and Wildlife. The Virginia state water quality standards define the

water quality needed to support each of these uses. If a water body contains more contamination than allowed by water quality standards, it will not support one or more of its designated uses. Such waters have "impaired" water quality (Virginia Department of Environmental Quality [VDEQ] 2011).

Parcel 21/20

None of the surface waters on Parcel 21/20 are listed on the VDEQ 2010 303(d) list of impaired waters. According to the 2012 Virginia 305(b) list, the waters of Birchin Creek are classified as 3A. A 3A classification indicates that no data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired and is therefore considered to be unimpaired. VDEQ Office of Water Quality Monitoring and Assessment was consulted regarding any future plans for assessment of the waters of this project site. VDEQ indicated that they do not have assessments planned for the waters of this project site. Therefore, the data provided in the 2012 Virginia 305(b) is the best available data for reference in this EIS.

Grid Parcel

No surface waters present on the Grid Parcel are mapped by USEPA or VDEQ. These small streams are largely intermittent and have no water quality classification.

LRA Parcel 9

An unnamed tributary to Hurricane Branch is located on the western portion of LRA Parcel 9 and is classified by VDEQ as impaired from its headwaters to its confluence with Hurricane Branch. According to the 303(d) report, the cause category for this listing is 5A. A 5A listing indicates that Water Quality Standard is not attained. The water is impaired or threatened for one or more designated uses by a pollutant(s) and requires a total maximum daily load (TMDL) (303d list). For this reach the dissolved oxygen standard is not attained and the reach is not meeting its designated use for aquatic life. VDEQ has not yet developed a TMDL implementation plan for dissolved oxygen for this stream (VDEQ 2010).

3.1.4.4 Wetlands

Wetlands are considered transitional zones between the terrestrial and aquatic environments, which include jurisdictional and non-jurisdictional wetlands. Jurisdictional wetlands are those that meet the three criteria (hydrology, hydric soils, and wetland vegetation) defined in the USACE 1987 Wetland Delineation Manual. Wetlands are generally associated with drainages, stream channels, and water discharge areas (natural and built) and are currently regulated by the USACE under Section 404 of the CWA.

Executive Order (EO) 11990, *Protection of Wetlands*, directs federal agencies to take action to minimize the destruction, loss, or degradation of wetlands on their property and mandates review of Proposed Actions on wetlands through procedures established by NEPA. EO 11990 requires that federal agencies establish and implement procedures to minimize development in wetlands. Wetlands provide many functions and values such as flood flow alteration, groundwater recharge/discharge, and fish and wildlife habitat.

Wetlands were delineated and mapped in the study area of Parcel 21/20, the Grid Parcel, and LRA Parcel 9 between Fall 2011 and Summer 2012. The study area was delineated using the methodology outlined in the Regional Supplement to the 1987 Wetland Delineation Manual: Eastern Mountains and Piedmont Region (July 2010). The wetland boundary was flagged, and flags were located using Global Positioning System Units (Trimble Geo XT) and differentially corrected to sub-meter horizontal accuracy. In addition to flagging, data was collected at specific points to represent the study area and determine the boundary between upland and wetland. Data points were taken in each wetland and in the associated upland habitat. In some locations where wetlands were characteristic of one another, data points of a similar wetland were used to represent other similar wetlands. The wetland delineation resulted in a total of 86.6 acres of wetlands in the study area. The USACE and VDEQ reviewed the delineation in the field and have issued a preliminary jurisdictional determination; completed jurisdictional determination forms are included in **Appendix C**.

Wetlands of the Study Area

- Total of 86.6 acres of wetlands in the study area
- Parcel 21/20: 35.2 acres
- Grid Parcel: 1.5 acres
- LRA Parcel 9: 49.9 acres
- Majority of wetlands are forested

A Virginia Army National Guard (VaARNG) management goal documented in the Fort Pickett Integrated Natural Resources Management Plan (INRMP) is to maintain riparian buffer zones within 25 meters (82 feet) of the top of stream banks or stream beds of all intermittent or perennial streams. Under the plan, mechanical clearing is restricted to the smallest possible encroachment in these areas to minimize sedimentation in streams and to preserve habitat and migration corridors for plants and animals (VaARNG 2007). In keeping with this goal, the alternatives development for the Proposed Action incorporated a 100-foot buffer zone on either side of streams and wetlands that would be avoided wherever feasible.

Three main wetland types were identified in the study area – palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO). Palustrine wetland habitats are non-tidal and dominated by trees, shrubs, or emergent vegetation (Cowardin et al. 1979). The palustrine system is bounded by upland or by any of the other systems. Emergent wetland is characterized by rooted, erect, herbaceous (non-woody) wetland plants that are present for most of the growing season (Cowardin et al. 1979). Scrub-shrub wetlands are dominated by woody vegetation less than 20 feet tall including true shrubs, young trees, and those stunted due to environmental conditions (Cowardin et al. 1979). Scrub-shrub wetlands can represent a successional stage during transition from emergent to forested wetland or it can be a persistent stable system (Cowardin et al. 1979). Forested wetland is dominated by woody vegetation that is 20 feet or taller, and generally have an overstory of trees, an underlayer of younger trees and shrubs, and an herbaceous layer (Cowardin et al. 1979).

Parcel 21/20

Parcel 21/20 contains several wetland areas associated with Birchin Creek and its tributaries. Existing NRCS soils data identified two hydric soils in the study area and many of the remaining soil types have the potential to contain hydric inclusions.

The investigation resulted in the delineation of 35.2 acres of wetlands on Parcel 21/20, including the areas between Parcel 21/20 and Dearing Avenue and Parcel 21/20 and Fort Pickett Firing Range 8, as depicted in **Figure 3.1-5a**. The majority of delineated wetlands are PFO and many are associated with intermittent and perennial tributaries to Birchin Creek, as well as within the headwaters of Birchin Creek. In addition to numerous PFO wetlands, a number of PSS wetlands were delineated. The PSS wetlands could represent successional stage wetlands in transition from emergent to forested wetlands or might be stable PSS systems. Wetland buffer area for the delineated wetlands totals 197.7 acres.

Grid Parcel

The Grid Parcel contains wetland areas associated with second and third order tributaries to Birchin Creek. Existing NRCS soils data identified one hydric soil on the parcel.

The wetland delineation identified 1.5 acres of wetlands on the Grid Parcel, as depicted in **Figure 3.1-5b.** Most of these wetlands are located along the second and third order tributary surface water features. The wetlands within the Grid Parcel are largely comprised of PFO fringe wetlands. The streams in the southern portion of the Grid Parcel have groundwater seep driven wetlands in their headwaters that drain into the intermittent streams. There are no isolated wetlands within the Grid Parcel. Wetland buffer area on this parcel totals 19 acres.

LRA Parcel 9

LRA Parcel 9 contains several wetland areas associated with a tributary to Hurricane Branch and several smaller secondary unnamed tributaries. The investigation resulted in the delineation of 49 acres of wetlands on LRA Parcel 9 and the area outside the southern border east of the Officers Club, as depicted in **Figure 3.1-5b**. Most of these wetlands are located along upstream tributary surface water features found on LRA Parcel 9. Wetland buffer area on this parcel was measured to be approximately 167 acres.

The wetlands are primarily PFO with intermittent and perennial streams through them. There are a few smaller areas of PEM and PSS. The eastern border of LRA Parcel 9 contains numerous PEM wetlands associated with upper reaches of a tributary to Hurricane Branch. North of these PEM wetlands, along the northeast parcel boundary, are isolated PFO, PSS, and PEM wetlands, and in the southeast parcel boundary is a PFO wetland.

3.1.4.5 Floodplains

EO 11988, *Floodplain Management*, defines floodplains as the lowland and relatively flat areas adjoining inland waters, including at a minimum, that area subject to a 1% or greater chance of flooding in any given year. The area subject to a 1% chance of flooding is referred to as the 100-year floodplain. EO 11988 directs federal agencies to avoid construction in floodplains and establishes a process for analysis and public notice if development is unavoidable.

The study area is included on the FEMA Flood Rate Insurance Map Panel 51135C0225C. The map indicates that there are no 100-year or 500-year floodplains within the boundaries of Parcel 21/20, the Grid Parcel, and LRA Parcel 9, or in the immediate downstream areas (FEMA 2010).

3.1.5 Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats in which they occur. For purposes of this Supplemental Draft EIS, these resources are divided into three major categories: vegetation, wildlife, and threatened and endangered species. Plant species are collectively referred to as vegetation and animal species as wildlife. Wildlife includes all vertebrate animals (i.e., mammals, reptiles, amphibians, birds, and fish). Habitat can be defined as the resources and conditions present in an area that produces occupancy of a plant or animal (Hall et al. 1997). Threatened and endangered species are those protected under federal or state law or statute.

The study area for biological resources is the land within the study area boundary of each parcel. The area surrounding the study area within Fort Pickett is characterized where the context in which a study area resource exists is relative to the evaluation. Due to varying levels of disturbance in the study area, vegetation is described for each parcel. Because of the proximity of the parcels to each other, they contain similar wildlife; therefore, wildlife is described jointly in this section. Federal and state threatened and endangered species are each addressed for the study area jointly.

3.1.5.1 Vegetation

Fort Pickett

Vegetation of the study area is part of the overall vegetation community of Fort Pickett and as such, the vegetation documented at Fort Pickett is described herein and compared with the study area. Vegetation of Fort Pickett has been categorized by vegetation inventories conducted by VaARNG (VaARNG 2007). Approximately 33,892 acres have been characterized as forested land within the boundary of Fort Pickett (VDMA 2011) and over 3,000 acres have been characterized as grasslands and shrublands (VaARNG 2007).

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).

Globally rare and unique native plant communities at Fort Pickett consist of loblolly pine savanna and oak-hickory woodland/savanna (VaARNG 2007). These communities are primarily associated with the impact zones of military live fire training areas that have been subject to frequent incendiary fires for at least the past 50 years (Virginia Department of Conservation and Recreation [DCR] 2012a, b, c). The prescribed fire and training-caused wildfires at Fort Pickett are found within the Controlled Access Area east of Parcel 21/20. These globally rare plant communities are rare throughout their range and were identified by the U.S. National Vegetation Classification System. DCR identified the rare plant communities within Virginia and documented them in the Second Approximation of the Natural Communities of Virginia (DCR 2012b).

Fort Pickett is a participant in the Army Compatible Use Buffer (ACUB) program that creates partnerships between the Army and outside organizations to preserve compatible land uses to protect the military mission. The Ward Burton Wildlife Foundation is Fort Pickett's primary partner for the ACUB at Fort Pickett. The ACUB program is designed to protect vital habitat off-post while supporting the continuation of military training. The ACUB zone shares its boundary with Fort Pickett along the western side of Fort Pickett just south of Blackstone and on the southern and eastern boundaries. To date 6,000 acres have been included in the ACUB program (VDMA 2011). The ACUB goals are also consistent with the state preservation mission (U.S. Army 2009).

Study 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 3.1-6**. Approximately 1,285 acres of forestland and 112 acres of grassland/shrubland are present in the study area. The mapped communities were confirmed through field observations in 2012. The rare plant communities found in the Fort Pickett Controlled Access Area east of Parcel 21/20 are not found in the study area.

Vegetation of the Study Area

- No rare or unique vegetation communities
- Approximately 1,285 acres of forestland and 112 acres of grassland/shrubland are present on the study area parcels.
- Most forest blocks are too small to be of high value to forest interior species.
- Some forest blocks are large enough to be of moderate value to forest interior species.

Because forest areas are utilized by many types of wildlife, with some species dependent on large tracts of undisturbed forest for breeding and feeding, unfragmented forest blocks within the study area were identified to document areas that may provide important habitat to forest dependent species. A forest block was considered to be fragmented if it was separated by a break in tree canopy of 30 feet wide or more (Rich et al. 1994). Forest blocks present are discussed below for each parcel. Forest blocks between 125 and 500 acres in size are considered to have moderate value for forest interior species, and blocks greater than 500 acres as having high value for these species (Environment Canada 2004, UCONN 2013).

Parcel 21/20

Deciduous, coniferous, and mixed forests dominate the land cover on Parcel 21/20 (**Figure 3.1-6**). 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*).

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*).

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*).

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.

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.

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*).

The forest of Parcel 21/20 is fragmented into six separate forest blocks by several unpaved roads. The forest blocks are considered to be of moderate value to forest interior species. The largest forest block on this parcel is approximately 174 acres in size and is located north of Butterwood Road and east of Trimble Road. The second largest is located between the Trimble Road landfill and Dearing Avenue and is approximately 165 acres. The remaining forest blocks are all less than 150 acres in size.

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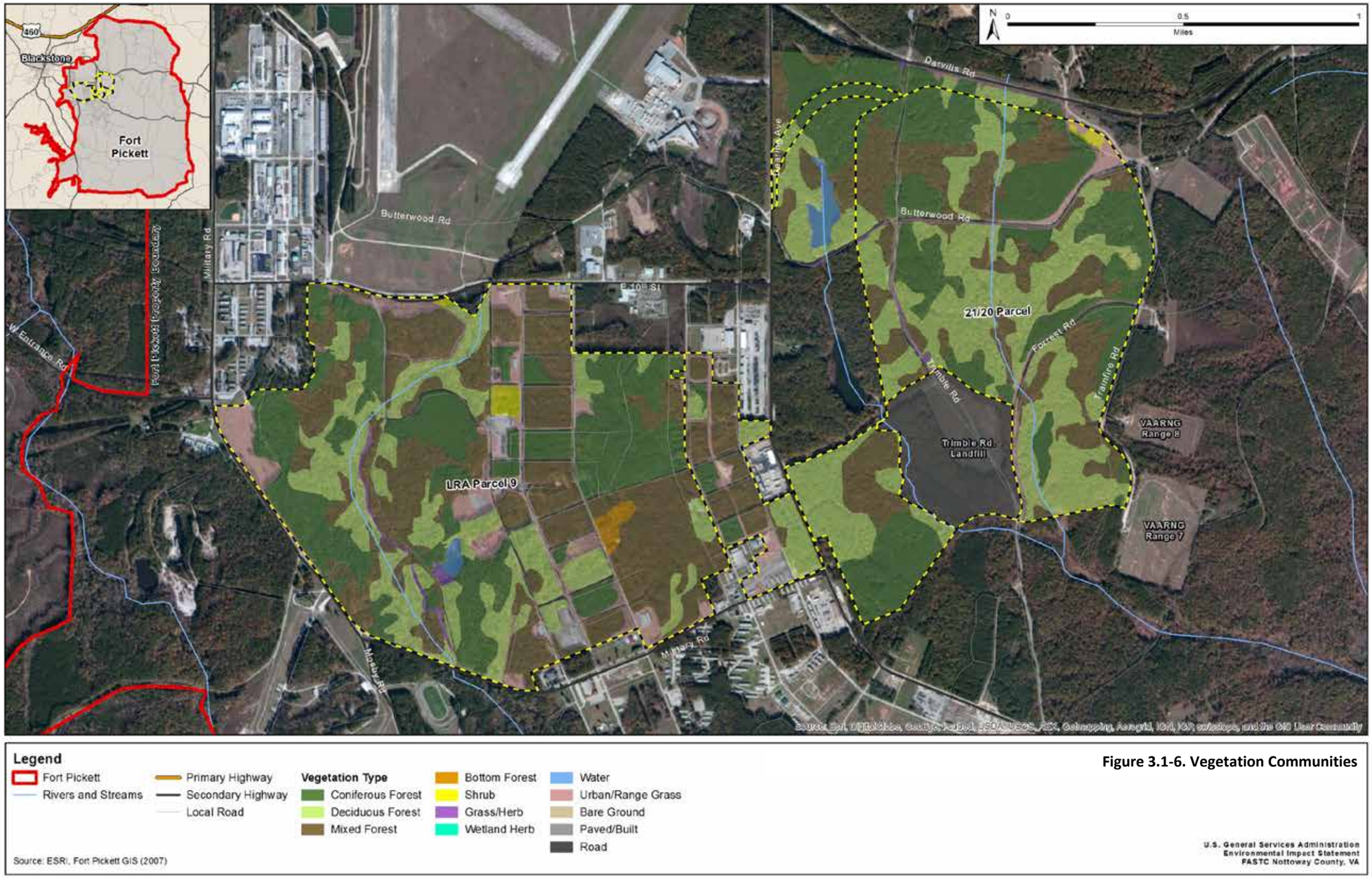

Figure 3.1-6. Vegetation Communities

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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).*

None of the forested areas on the Grid Parcel are large enough to be valuable to forest interior species.

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 3.1-6**). 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.

One forest block, located on the westernmost portion of LRA Parcel 9, is large enough to have moderate value to forest interior species. This forest block is approximately 154 acres.

3.1.5.2 Wildlife

Mammals

The study area supports many mammal species representative of this region. Species likely to occur on or near the study area include a variety of smaller species such as the cotton rat (*Sigmodon hispidus*), golden mouse (*Ochrotomys nutalli*), and the northern short tailed shrew (*Blarina brevicauda*). The most commonly seen larger mammal species known to inhabit the area are white-tailed deer (*Odocoileus virginianus*), eastern gray squirrel (*Sciurius carolinesis*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethica*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and opossum (*Didelphis marsupialis*), as well as at least nine species of bat (St. Germain 2006). Black bear (*Ursus americana*) have been documented on Fort Pickett only as occasional transients. Until recently, there have been no documented sightings of rare or endangered mammal species on Fort Pickett (VaARNG 2007). However, with the spread of a disease that has killed millions of bats, known as white-nose syndrome, certain species of bat have been proposed for listing on state and federal lists of endangered species (refer to **Section 3.1.5.3** *Threatened and Endangered Species*). A comprehensive list of mammalian species that may occur on the study area is contained in **Appendix D**.

White-tailed deer and other game species are managed on VaARNG property under a Fish and Game Management program that requires permits for hunting (see **Section 3.2.7**). The study area is mostly unfenced allowing the free movement of wildlife through the forested areas and riparian corridors.

Beavers and other furbearers on VaARNG property are managed by the Fort Pickett Fish and Game Office. Beaver that are not a nuisance are left undisturbed as their presence provides ecological and resources management benefits, such as, the creation of wildlife habitats and firebreaks (VaARNG 2007). When beavers and other furbearers, such as muskrat, become a nuisance, they are removed by lethal trapping. In past years, removal efforts have occurred at Butterwood Pond, Dearing Pond, and the Birchin Lake greater drainage area (personal communication VaARNG 2014a). There is limited recreational trapping effort for furbearers. Trapping permits are approved by the Fort Pickett Fish and Game Office. In 2004 to 2005, six beavers were harvested during the 30 approved hunter-days (VaARNG 2007). Beavers are also present on LRA Parcel 9, but are not managed.

Birds

The study area is located along the Atlantic migration flyway, which is one of the four main U.S. migration flyways for bird species recognized by the U.S. Fish and Wildlife Service (USFWS). A one-year bird atlas project conducted by the Conservation Management Institute at Virginia Tech documented avian abundance seasonally in the study area and identified 124 species (Conservation Management Institute 2007). Residential year round bird species found in the study area include: mourning dove (*Zenaida macroura*), blue jay (*Cyanocitta cristata*), northern cardinal (*Cardinalis cardinalis*), common grackle (*Quiscalus quiscula*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), and European starling (*Sturnus vulgaris*).

Bird species observed within open water, ponds, and wetland habitats on or near the study area include: belted kingfisher (*Ceryle alcyon*), wood duck (*Aix sponsa*), Canada goose (*Branta Canadensis*), mallard (*Anas platyrhynchos*), northern pintail (*Anas acuta*), great egret (*Casmerodius albus egretta*), great blue heron (*Ardea Herodias herodias*), and green-backed heron (*Butorides virescens virescens*).

Grassland bird species are not likely to occur in the study area as no extensive areas of grassland habitat are present. Grassland areas in the study area are limited to roadsides, tank trail edges, and utility easements.

Common raptor species in the study area include red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), sharp-shinned hawk (*Accipiter striatus velox*), barred owl (*Strix varia*), barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), and eastern screech owl (*Otus asio*).

Birds species observed in the forested interior areas of the study area include the Acadian flycatcher (*Empidonax virescens*), Cape May warbler (*Dendroica tigrina*), black-throated blue warbler (*Dendroica caerulescens*), scarlet tanager (*Piranga olivacea*), wild turkey (*Meleagris gallopavo*), wood thrush (*Hylocichla mustelina*), and veery (*Catharus fuscescens*). Birds with wide home ranges such as pileated woodpecker (*Dryocopus pileatus*) and barred owl (*Strix varia*) may also occur. A comprehensive list of bird species that may occur on the study area is contained in **Appendix D**. Of the bird species observed in the study area, only the house sparrow, European starling, and wild turkey are not protected by the Migratory Bird Treaty Act (MBTA) (Department of the Interior 2013).

The bald eagle (*Haliaeetus leucocephalus*) is present at Fort Pickett and is discussed in **Section 3.1.5.3** *Threatened and Endangered Species*.

Reptiles and Amphibians

Reptilian fauna in the study area include the black rat snake *(Elaphe obsoletea)*, eastern garter snake *(Thamnophis sirstalis)*, broadhead skink *(Eumeces laticeps)*, and eastern box turtle *(Terrapene carolina)*. Other reptiles typical to the area include the common snapping turtle *(Chelydra serpentine)*, northern black racer *(Coluber constrictor),* and northern water snake *(Nerodia sipedon)* (U.S. General Services Administration [GSA] 2010).

Amphibians occurring in or near wetlands, streams and ponds in the study area include the northern spring peeper *(Hyla crucifer)*, northern cricket frog *(Acris crepitans)*, pickerel frog *(Rana palustris),* spotted salamander *(Ambystoma maculatum)*, American toad *(Bufo americanus)*, Fowlers toad *(Bufo wookhousii fowler)*, gray tree frog *(Hyla chrysoscelis),* and green tree frog *(Hyla cinerea)* (GSA 2010).

A comprehensive list of reptile and amphibian species that may occur on the study area is contained in **Appendix D**.

Freshwater Fishes

Compass Pond, located on LRA Parcel 9, was observed to be significantly below full capacity from September 2011 to August 2012. At the start of field work in September 2011 herbaceous and scrub/shrub vegetation was present on what had previously been the bottom of the pond. Therefore it is believed the water level has been low for at least a year prior to start of fieldwork. The cause of the dramatic and sustained drop in the water level is unknown, but as a result it is believed the pond is not able to support fish species at this time. The two main streams, the unnamed tributary to Hurricane Branch on LRA Parcel 9 and Birchin Creek on Parcel 21/20, are known to contain small fish. Typical fish species occurring in small streams and that may occur in the study area include creek chubsucker *(Erimyzon oblongus)*, creek chub *(Semotilus atromaculatus)*, and golden shiner *(Notemigonus crysoleucas)*. A comprehensive list of fish species that may occur on the study area is contained in **Appendix D**.

3.1.5.3 Threatened and Endangered Species

Protected Species of the Study Area

- Federal proposed endangered Northern long-eared bat present in the study area
- Bald eagles nest just outside the Parcel 21/20 boundary

Under Section 7 of the Endangered Species Act, federal project proponents must consult with USFWS if one or more listed species may be affected by an action. Federal agencies are required to ensure that their actions do not jeopardize the continued existence of an endangered or threatened species or its critical habitat. In accordance with Section 7 of the Endangered Species Act, informal consultation was initiated with the USFWS in July 2012 through correspondence describing GSA's assessment of project effects on federal endangered or threatened species (**Appendix C**). VDGIF and the DCR, Division of Natural Heritage were provided GSA's assessment of state threatened and endangered species in July 2012. These assessments were updated in December 2014

and have not changed (**Appendix C**). The one exception is the recent proposed federal listing of the northern long-eared bat (*Myotis septentrionalis*) (NLEB) as discussed below.

Federally Protected Species

Federally protected plant and animal species are listed under the Federal Endangered Species Act. An official, site-specific species list was obtained from the USFWS using the Information, Planning and Conservation System and was included in subsequent USFWS correspondence (**Appendix C**). The list contained three species (**Table 3.1-2**) as well as the bald eagle, which was delisted in August 2007, but is still protected by the MBTA and the Bald and Golden Eagle Protection Act.

Table 3.1-2. Federal Protected Species Potentially Occurring in Study Area

Common Name	Scientific Name	Federal Status[1]
Michaux's sumac	*Rhus michauxii*	Endangered
Dwarf wedgemussel	*Alasmidonta heterodon*	Endangered
Roanoke logperch	*Percina rex*	Endangered
Northern long-eared bat	*Myotis septentrionalis*	Proposed Endangered[2]
Bald eagle	*Haliaeetus leucocephalus*	Other[3]

Notes: *[1] Listed by USFWS*
[2] USFWS published a notice of a six-month extension for the final listing determination in the Federal Register on June 30, 2014. A final decision will be made no later than April 2, 2015.
[3] Bald Eagle is federally delisted from Endangered Species Act but is still awarded some protection under the MBTA and Bald and Golden Eagle Protection Act.

Michaux's sumac (*Rhus michauxii*) is a federally listed endangered plant that prefers openings or thin woods, and is dependent on some form of disturbance (USFWS 1993a). Due to the habitat conditions on Parcel 21/20 and LRA Parcel 9, it is unlikely that Michaux's sumac would occur in these areas. Fringe areas of the forest areas on these parcels are dominated by invasive and pioneer shrubs species much larger than Michaux's sumac, and which would likely out-compete the species for space and necessary resources. The frequent use of mowing instead of prescribed burning of open areas also makes the habitat unlikely to support this species and the probability for the presence of this plant is low on Parcel 21/20 and LRA Parcel 9. Although the Grid Parcel is primarily comprised of early successional forests and maintained areas such as roadsides and utility easement, the utility easements are either not wide enough to offer suitable habitat and/or are dominated by invasive and pioneer species. A power line easement east of LRA Parcel 9 and north of West Entrance Road was determined to contain potential habitat for Michaux sumac. The easement is mowed but infrequently enough to allow saplings and shrubs to grow. A field survey for Michaux's sumac was conducted in June 2012 in support of the FASTC project, and this species was not identified in this area. The survey report is included in **Appendix C**.

The dwarf wedge mussel (*Alasmidonta heterodon)* is a historically rare freshwater mussel species that's distribution is confined to Atlantic slope drainages from North Carolina to New Brunswick, Canada. The dwarf wedge mussel has been recorded in approximately 70 localities in 15 major drainages since the species' discovery in the early 1800s. It is now thought to have been extirpated from all but 20 localities, one of which is the Nottoway River. The 20 known remaining populations, with one exception, are thought to be relatively small and to be declining as a result of agricultural, industrial, commercial, and domestic pollution/runoff. Channelization, removal of shoreline vegetation, development, and road and dam construction also threaten some populations. Dwarf wedge mussels live in muddy sand, sand, and gravel bottoms in creeks and rivers (USFWS 1993b). The stream habitat located on LRA Parcel 9 is listed on the Virginia 303(d) list of

impaired waters due to nonattainment of the dissolved oxygen standard. The stream does not meet its designated use for aquatic life and would not support populations of dwarf wedge mussel. The stream habitat on Parcel 21/20 is seasonally intermittent near the headwaters and/or contains unconsolidated sediments in addition to runs of exposed bedrock. Due to the lack of suitable stream habitat for the dwarf wedge mussel, the species is unlikely to occur in the streams located on Parcel 21/20. Streams on the Grid Parcel are seasonally intermittent, lacking swift flowing water, and have fine grained sediments on stream bottoms and therefore, would not offer suitable habitat for dwarf wedge mussel.

The Roanoke logperch (*Percina rex*) is endemic to Virginia and limited to six distinct populations, one of which is contained in the Nottoway River (USFWS 2007). Logperch are found in relatively medium to large shallow, warm streams with unsilted rocky substrates and have been identified outside of the study area in the main stem of the Nottoway River, primarily within pool areas (USFWS 2003a; VA DMA 2012). They are considered a visual predator and any reductions in visibility due to sedimentation interfere with their success (VaARNG 2007). They are generally an indicator of high stream quality and are therefore not likely to be found on LRA Parcel 9 where the stream habitat is listed on the Virginia 303(d) list of impaired waters due to nonattainment of the dissolved oxygen standard and does not meet its designated use for aquatic life. Only three of the tributaries to the Nottoway River have been documented containing logperch, none of which fall within the study area (USFWS 2007). Streams on the Grid Parcel are seasonally intermittent, lacking swift flowing water, and contain fine grained bottom sediments. Therefore, they would not offer suitable habitat for Roanoke logperch. Stream habitat on Parcel 21/20 is seasonally intermittent or contains unconsolidated sediments in addition to runs of exposed bedrock and would not be suitable habitat for Roanoke logperch.

NLEB was proposed for listing as an endangered species under the Endangered Species Act in October 2013 due to the severe and immediate threat of the disease, white-nose syndrome, on the species persistence in the wild (USFWS 2013). USFWS plans to publish a listing determination for the northern long-eared bat on or before April 2, 2015. The NLEB hibernates in the small cracks and crevices of caves and mines that have large passages and relatively constant, cool temperatures with high humidity and no air currents. During the summer they roost singly or in colonies underneath bark or in cavities, crevices, or hollows of both live and dead trees within forests, woodlots with dense or loose aggregates of trees, riparian forests, and other wooded corridors. Males or non-reproductive females may also roost in caves or mines. In addition, NLEBs have been observed roosting in structures such as barns and bridges. They are not considered to be a long-distance migrant, as they typically migrate 35–55 miles between their winter hibernacula and summer habitat (USFWS 2013). In 2008, prior to the introduction of white-nose syndrome in Virginia, the NLEB was widespread on Fort Pickett.

A field survey for NLEB was conducted in August 2014 in support of the Proposed Action, and the presence of this species was confirmed via acoustic detections on Parcel 21/20 and LRA Parcel 9 (St. Germain 2014). There were no detections on the Grid Parcel. Two male NLEB were captured in mist nets on LRA Parcel 9 during the surveys, and none were captured on Parcel 21/20. The detections were within all forest types and were within or near the proposed facility development areas. The presence of maternity roosts was not confirmed during the survey; however, suitable summer habitat is present in the study area and maternity roosts may be present.

Although no longer a listed species under the Endangered Species Act, the bald eagle is protected under the Bald and Golden Eagle Protection Act (Federal Regulations 2012). There are three known active bald eagle nests at Fort Pickett; however, no eagle concentration areas are present. One active nest, designated by Commonwealth of Virginia Department of Game and Inland Fisheries (VDGIF) as Nest Code NY0801, is located on Hurricane Branch approximately 2.5 miles south of LRA Parcel 9 outside the study area. A second active bald eagle nest was discovered near Parcel 21/20 during a 2012 field survey and has been designated by VDGIF as Nest Code NY1201. The nest is located approximately 440 feet east and 225 feet south of the southeast Parcel 21/20 boundary near existing VaARNG outdoor firing range 7 (**Figure 3.1-7**). The third nest was discovered during an aerial eagle nest survey in 2013 and is located on Tommeheton Brook (refer to **Figure 3.1-4**) within the Controlled Access Area approximately 4 miles east of Parcel 21/20 (Kramar et al. 2013). This nest has not yet been assigned a nest code by VDGIF.

Bald eagles are known to occur on Parcel 21/20 and LRA Parcel 9, however based on field observation, there are no known bald eagle nests in these areas. The early successional nature of the forests and dense understory on the Grid Parcel render this area unsuitable habitat for bald eagles.

State Protected Species

The Virginia Department of Agriculture and Consumer Services and VDGIF have authority over the protection of endangered and threatened plant and animal species, respectively, in Virginia. DCR, Division of Natural Heritage maintains the list of state and federal listed species in Virginia. Virginia protected plant and animal species identified as having the potential to occur in the vicinity of the study area are listed in **Table 3.1-3**. The list was obtained via an online three-mile radius search through the Virginia Fish and Wildlife Information Service. The service provides the most current and comprehensive information about Virginia's wildlife resources. Because the minimum search radius for this service is three-miles, areas outside of the study area boundary were included and all species do not necessarily pertain to the study area.

Table 3.1-3. State Protected Species Potentially Occurring in Study Area

Common Name	Scientific Name	State Status[1]
Red-cockaded Woodpecker	*Piocoides borealis*	SE[2]
Upland Sandpiper	*Bartramia longicauda*	ST
Loggerhead Shrike	*Lanius ludovicianus*	ST
Migrant Loggerhead Shrike	*Lanius ludovicianus migrans*	ST
Bachman's Sparrow	*Aimophila aestivalis*	ST
Atlantic Pigtoe	*Fusconaia masoni*	ST
Whitemouth Shiner	*Notropis alborus*	ST
Roanoke Logperch	*Percina rex*	ST
Dwarf Wedgemussel	*Alasmidonta heterodon*	ST
Bald Eagle	*Haliaeetus leucocephalus*	ST

[1]*Listed by Virginia Fish and Wildlife Information Service*
[2]*SE- state endangered, ST- state threatened*

For information pertaining to existing conditions for Roanoke logperch, dwarf wedge mussel, and bald eagle, refer to the previous section **Federally Protected Species**.

Legend

- Bald Eagle Nest
- 660 Foot Nest Buffer
- Parcel Boundary

Figure 3.1-7. Bald Eagle Nest Location

U.S. General Services Administration
Environmental Impact Statement
FASTC Nottoway County, VA

Red-cockaded woodpecker (*Piocoides borealis)* is listed as an endangered species within the Commonwealth of Virginia. Red-cockaded woodpeckers require open pine woodlands and savannahs with large old pines for nesting and roosting habitat (clusters). Large old pines are required as cavity trees because the cavities are excavated completely within inactive heartwood, so that the cavity interior remains free from resin that can entrap the birds. Also, old pines are preferred as cavity trees, because of the higher incidence of the heartwood decay that greatly facilitates cavity excavation. Cavity trees must be in open stands with little or no hardwood midstory and few or no overstory hardwoods, a condition frequently resulting from periodic burning of the understory.

Hardwood encroachment resulting from fire suppression is a well-known cause of cluster abandonment. Red-cockaded woodpeckers also require abundant foraging habitat. Suitable foraging habitat consists of mature pines with an open canopy, low densities of small pines, little or no hardwood or pine midstory, few or no overstory hardwoods, and abundant native bunchgrass and forb groundcovers (USFWS 2003b). The study area does not undergo prescribed burning and, therefore, the forested areas of the study area do not meet the habitat requirements for red-cockaded woodpeckers. Additionally, according to the Fort Pickett INRMP, this species has never been documented at Fort Pickett. Therefore, this species is unlikely to occur in the study area.

Upland sandpipers (*Bartramia longiccauda*) are birds of open country and characteristic of short-grass prairie. They may be found in large fallow fields, pastures, and grassy areas (greater than 250 acres). Upland sandpipers need a mosaic of grasses in a large area, using the shorter grass areas for foraging and courtship and the taller grasses for nesting and brood cover (Pennsylvania Game Commission 2009a). They are likely a fall migrant in Nottoway County. None of the grassland areas within the study area are large enough to be considered upland sandpiper habitat and this species is not likely to be present within in the study area.

The loggerhead shrike (*Lanius ludovicianus)* is a resident bird subspecies of shrike. Loggerhead shrikes prefer short grass pastures with scattered shrubs and fencerows or small utility lines. They have been observed using agricultural landscapes, shelterbelts, cemeteries, golf courses, and reclaimed strip mines in other parts of their range. Essential elements in suitable habitat include short grasses and forbs interspersed with perching locations for hunting and shrubs/small trees for nesting (Pennsylvania Game Commission 2009b). Where shrubs and low trees are not present, there are no occurrences of shrikes (USACE 1997). Preferred nest trees are thorny species (e.g., hawthorn and locust). Because they do not have powerful talons, loggerhead shrikes often impale their prey on the thorns of such trees in order to hold it in place (Wildlife Preservation Canada 2012). Territories are usually about 15-20 acres in size (USGS 1998). Prescribed burns are beneficial to shrike habitat because it reduces midstory woody vegetation and promotes herbaceous layer, which increases prey (USACE 1997). According to the Fort Pickett INRMP, loggerhead shrikes have never been documented at Fort Pickett (VaARNG 2007). The habitat present in the study area does not meet the requirements for loggerhead shrike; therefore, this species is not likely to be present in the study area.

The migrant loggerhead shrike (*Lanius ludovicianus migrans)* is a migrant subspecies of shrike that differs slightly in coloring and has shorter wings than the resident species of shrike. Breeding season is similar to resident shrike, but migratory populations of shrike head northward to breeding ground from early April to May (USACE 1997). The habitat for migrant loggerhead shrike is similar to that of resident

shrike. Migrant loggerhead shrike have never been documented or observed at Fort Pickett. In addition, the habitat present in the study area does not meet the requirements for migrant loggerhead shrike; therefore, this species is not likely to be present in the study area.

The Bachman's sparrow (*Aimophila aestivalis)* historically inhabited open pine forests, but has also adapted to open clear cuts and utility rights-of-way where open grassy habitat exists. It has been observed on Fort Pickett in association with frequently burned areas, however areas burned too infrequent or too frequently are abandoned (VaARNG 2007). The Bachman's sparrow is commonly found in pine savannahs with sparse understory and shrub growth, or areas with adequate ground cover of grass and forbs. All confirmed sightings of Bachman's sparrows at Fort Pickett to date have been within the Controlled Access Area or to the north of this area. The frequent fires causes by military training that occur in the Controlled Access Area provide the necessary habitat for the Bachman's sparrow (VaARNG 2007). Bachman's sparrow have not been documented in the study area and because of the lack of burn maintenance, the study area does not contain suitable habitat for Bachman's sparrow (VaARNG 2007). Therefore, this species is not likely to occur.

The Atlantic pigtoe mussel (*Fusconaia masoni)* requires fast-flowing, well-oxygenated streams and is restricted to fairly pristine habitats. They are very sensitive to sedimentation and channel modification, and the larvae are extremely sensitive to pollution (Wolf 2010). The Nottoway River is habitat to one of the healthiest populations of Atlantic pigtoe mussel, and although the species has been documented at Fort Pickett previously, there was no presence of them during a 2006 survey (VaARNG 2007). The stream habitat on LRA Parcel 9 is listed on the Virginia 303(d) list of impaired waters due to nonattainment of the dissolved oxygen standard and does not meet its designated use for aquatic life. Therefore, the Atlantic pigtoe is not likely to occur. Stream habitat on Parcel 21/20 is seasonally intermittent or contains unconsolidated sediments in addition to runs of exposed bedrock and would not provide suitable habitat for Atlantic pigtoe.

Whitemouth shiners (*Notropis alborus*) are known to occur from North Carolina river drainages to Virginia where they occur in the Chowan and Roanoke drainages. Shiner inhabit small to medium sized warm streams that are high to medium gradient. They prefer clear to turbid water streams with sand to rubble bedrock substrate and a swift current with alternating pools and riffles. Whitemouth shiner habitat is threatened by development and land use practices that cause sedimentation of stream characteristics and by impoundments (Natureserve 2012). Parcel 21/20 contains Birchin Creek and several unnamed tributaries. Birchin Creek contains two large manmade impoundments and many portions of its drainage are slow moving and marshy, forming extensive wetlands. The presence of the impoundments would prevent the movement of fish between the Nottoway River and Birchin Lake to the south of Parcel 21/20. The low stream flows and marsh habitats associated with Birchin Creek are not likely to support populations of whitemouth shiner. Therefore, this species is not likely to occur on Parcel 21/20. Streams on the Grid Parcel are seasonally intermittent and lacking swift flowing water, and would therefore not offer suitable habitat for whitemouth shiner. The stream habitat located on LRA Parcel 9 is listed on the Virginia 303(d) list of impaired waters due to nonattainment of the dissolved oxygen standard. The stream does not meet its designated use for aquatic life. Therefore, it is unlikely to support populations of whitemouth shiner.

3.2 Built Environment

3.2.1 Cultural Resources

Cultural resources are prehistoric or historic sites, buildings, structures, districts, objects, or other physical evidence of human activity that are considered important to a culture or community for scientific, traditional, religious, or any other reasons. Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, empowers the Advisory Council on Historic Preservation (ACHP) to comment on federally initiated, licensed, funded, or permitted projects affecting cultural resources listed on or eligible for listing on the National Register of Historic Places (NRHP).

Are there historic resources in the area potentially affected?

- One NRHP-eligible historic district is present at Fort Pickett
- One building in the indirect effects APE is eligible for listing on the NRHP
- Six archaeological sites in the APE are potentially eligible for the NRHP

The governor of each state or territory appoints a State Historic Preservation Officer (SHPO) who is responsible for administering cultural resources programs within a given jurisdiction. The Virginia Department of Historic Resources (VDHR) is the staff office of the Virginia SHPO. The NHPA requires federal agencies, in carrying out their Section 106 responsibilities, also consult with any party, including Indian tribes, which attach religious or cultural significance to historic properties that may be affected by a federal action. As such, GSA has initiated consultation with SHPO at VDHR and has invited all relevant stakeholders to be consulting parties under the NHPA. Correspondence to all parties contacted is provided in **Appendix E**. The Cheroenhaka (Nottoway) Indian Tribe, United Keetoowah Band of Cherokee Indians, Catawba Indian Nation, and the Nottoway Indian Tribe of Virginia have requested to be consulting parties or have asked to be informed about the discovery of prehistoric sites. Consultation with the tribes has not resulted in the identification of any Traditional Cultural Properties within the direct or indirect area of potential effects (APE) for the proposed project.

Once cultural resources have been identified, they are evaluated for their eligibility for inclusion in the NRHP according to NRHP eligibility criteria[11]. If the resource is determined to be eligible in consultation with the SHPO, an assessment is undertaken to identify any impacts that may result due to the Proposed Action. Only historic properties eligible for, or listed on, the NRHP are protected under the NHPA. Surveys of architectural and archaeological resources were undertaken for this Supplemental Draft EIS to determine if eligible historic properties are present in the study area.

An APE must be defined in order to assess the effects of a Proposed Action on a historic property. An APE is defined as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist[12].

[11] 36 Code of Federal Regulations (CFR) §60.4
[12] 36 CFR §800.16[d].

3.2.1.1 Architectural Resources

For architectural resources, APEs were defined both for potential direct effects resulting from the construction and operation of the proposed FASTC, and for potential indirect effects to the setting of historic properties from visual, audible, and/or traffic changes. The APE for direct effects consists of Parcel 21/20, the Grid Parcel, and LRA Parcel 9 (**Figure 1.1-2** and **Appendix F**). Direct effects resulting from demolition of extant buildings and structures for construction of the proposed FASTC would occur only within the boundaries of these parcels.

The APE for indirect effects for architectural resources considered the extent of noise, visual effects, and increased traffic associated with the construction and subsequent operation of FASTC, and extends to the boundaries of Fort Pickett and the access roads. There are two options under consideration for the Proposed Action. Option 1 is Military Road from VA Route 40 into Fort Pickett. Option 2 is Dearing Avenue from VA Route 40. A secondary access route under both options would be West Entrance Road from South Main Street to the Fort Pickett West Gate. The extent of the indirect effects APE is largely in consideration of potential noise effects from the proposed undertaking. The APE for indirect effects also takes into account the potential visual effects of new facilities for the proposed FASTC to properties listed or eligible for listing on the NRHP that may be adjacent to Parcel 21/20, the Grid Parcel, and LRA Parcel 9. The indirect effects APE includes both Military Road and Dearing Avenue from VA Route 40 and 100 feet on both sides of each road, and West Entrance Road from South Main Street and 100 feet on both sides of each road. Indirect effects would be those caused by a projected increase in traffic along these corridors.

Parcel 21/20

There are no previously inventoried architectural resources in Parcel 21/20. Two architectural resources were identified at Range 8. They include Building R0060 (067-0110-0421), a 1962 range target house, and Facility CTR08 (067-0110-0422), a 1977 control tower. Both resources were recommended as not eligible for inclusion on the NRHP. The SHPO concurred that both buildings are not eligible for the NRHP (**Appendix E**).

Grid Parcel

There are no extant architectural resources in the Grid Parcel. The indirect effects APE includes 44 previously inventoried architectural resources adjacent to the Grid Parcel. These resources were surveyed as part of a historic district evaluation of Fort Pickett in 2010 (VDMA 2010). None of the resources were determined to be individually eligible, nor were they determined to be contributing resources to an eligible historic district at Fort Pickett.

An architectural survey undertaken for the Proposed Action identified three architectural resources adjacent to the Grid Parcel that had not been previously inventoried or evaluated. They consist of three metal warehouses that are less than 25 years old. The warehouses were determined to be not eligible for listing on the NRHP.

LRA Parcel 9

LRA Parcel 9 contains 24 previously inventoried architectural resources. All of these resources were surveyed as part of the historic district evaluation of Fort Pickett in 2010 (VDMA 2010). None of the

previously surveyed resources in LRA Parcel 9 are individually eligible for inclusion in the NRHP nor are they contributing resources to an eligible historic district.

An architectural survey undertaken for the Proposed Action identified four architectural resources in LRA Parcel 9 that had not been previously inventoried or evaluated. They include: Building 396 (067-0110-0417), a 1942 training building converted to offices for the USACE in 1970; Facility 664 (067-0110-0418), a 1942 water tower; Building 873 (067-0110-0419), a 1953 classroom building that currently serves as the training center and offices of a private business; and Building 1112 (067-0110-420), a 1942 vehicle maintenance building. The survey concluded that all four resources are not eligible for listing on the NRHP because of a lack of significance and/or integrity. The SHPO concurred that the four resources are not individually eligible for the NRHP (**Appendix E**).

The APE for indirect effects includes two properties—the Officers Club and a hangar—which have been determined to be eligible for listing on the NRHP, and one property, Farley's, that is considered eligible. The Officers Club (Building 1615; 067-0110-0001) was built in 1942 and is a two-story wood-frame building clad in weatherboard siding. It is eligible under Criterion A for its association with a World War II Army camp and under Criterion C for its architectural design (VDHR 2009). Located at the northwest corner of Military Road and Garnett Avenue, the Officers Club is adjacent to the south side of LRA Parcel 9. The hangar (Building T0025; 067-0110-0027) was built in 1942 on the north side of Blackstone Army Airfield. It is eligible under Criterion C as a representative example of a type of steel hangar that was developed by the U.S. Engineer Office for U.S. military installations prior to and during World War II (VDMA 2004). The VaARNG identifies the hangar and the runways (airfield proper) as a historic district eligible for NRHP listing, with the hangar individually eligible and a contributing resource of the historic district, and the runways not individually eligible and non-contributing to the historic district. Located approximately 4,000 feet northwest of the Fort Pickett West Gate on West Entrance Road, the farmstead known as Farley's has not been evaluated for NRHP eligibility; however, per the direction of the VDHR, it is considered eligible for the purposes of the Proposed Action. Farley's consists of a circa 1850 I-house, a smokehouse and granary from the mid- to late 19th century, a late 19th to early 20th century barn, an early 20th century barn, and a post-1945 shed.

At the edge of the indirect effects APE is the Blackstone Historic District, which was listed on the NRHP in 1991. The district is composed of a late-eighteenth century tavern and late-nineteenth and twentieth century commercial buildings, residences, and churches. It is listed under Criterion A for its historical importance as a regional transportation and commercial center and under Criterion C for the architecture of its collection of late nineteenth and a twentieth century buildings.

3.2.1.2 Archaeological Resources

Phase I archaeological survey and Phase II evaluations were conducted to document archaeological resources in accordance with Section 106 of the NHPA. All work was performed in accordance with professional standards set forth in Section 106 of the NHPA, as amended, and its implementing regulations[13], the Archaeological and Historic Preservation Act of 1974; the *Guidelines for Conducting Historic Resources Survey in Virginia* (VDHR 2011), and the Department of Military Affairs *Standard*

[13] 36 CFR Part 800: Protection of Historic Properties

Operating Procedure No. 6 for Conducting Archaeological Surveys, *Standard Operating Procedure No. 7 for Curation Guidelines*, and *Standard Operating Procedure No. 8 for Archaeological Site Testing and Evaluation*.

The Phase I survey of the APE was completed by Cardno TEC from October 2011 through March 2012. The APE consists of approximately 917 acres located within Parcel 21/20 and LRA Parcel 9. Cardno TEC completed a Phase I survey of approximately 80 acres for four additional areas at Fort Pickett in July 2012. The four additional areas included the Grid Parcel, Range 8 Classroom R05 (adjacent to Parcel 21/20), and the Officers Club Parking Lot (adjacent to LRA Parcel 9). Phase I investigations focused on identifying the presence or absence of archaeological sites within the APE. The acreage for the APE is based on the amount of land that is usable based on project needs, minus previously disturbed areas, areas of steep slope (greater than 15%), and previously surveyed areas.

Phase II evaluations were conducted on five previously identified sites within the APE that would not be avoided by the proposed construction. Phase II evaluations of Sites 44NT045, 44NT056, 44NT0207, 44NT0218, and 44NT072 focused on determining the NRHP eligibility of these sites.

The survey reports describing survey methods, data, and findings are provided in **Appendix F**. In accordance with Section 106, consultation was initiated with the SHPO regarding the Proposed Action. The survey reports, including original survey data forms, were submitted to the SHPO with the correspondence included in **Appendix E**.

Parcel 21/20

Parcel 21/20 is located on Fort Pickett lands, east of Dearing Avenue and west of Trainfire Road, and is comprised of approximately 549 acres of land. Approximately 317 acres of this parcel were surveyed during the Phase I. Five previously unknown archaeological sites were discovered in Parcel 21/20. These sites (44NT0218, 44NT0219, 44NT0220, 44NT0221, and 44NT0222) were recommended as potentially eligible for the NRHP and additional work or avoidance was recommended. The results of Phase I excavations in Parcel 21/20 are described in **Table 3.2-1**. The SHPO concurred with this recommendation in correspondence dated November 28, 2012 (**Appendix E**).

Table 3.2-1. Recommendations for Phase I Sites in Parcel 21/20

Site Number	Site Name	Eligibility Recommendation	Action Recommendation
44NT0218	Tank Trail 1	Potentially eligible	Avoidance or Phase II
44NT0219	Tank Trail 2	Potentially eligible	Avoidance or Phase II
44NT0220	Tank Trail 3	Potentially eligible	Avoidance or Phase II
44NT0221	Birchin Creek Ridge Site	Potentially eligible	Avoidance or Phase II
44NT0222	Firing Range Site	Potentially eligible	Avoidance or Phase II

Phase II evaluation was conducted at Site 44NT0218 to determine the eligibility of this site. Excavations indicated the site is disturbed and it was recommended as not eligible for the NRHP. The SHPO concurred with this recommendation in correspondence dated November 26, 2014 (**Appendix E**).

Sites 44NT0219, 44NT0220, 44NT0221, and 44NT0222 would be avoided by Build Alternative 3; therefore, Phase II testing and evaluation was not conducted. Should future project design result in

potential impacts to these four sites, Phase II testing would be conducted. The SHPO concurred with this recommendation in correspondence dated November 28, 2012 (**Appendix E**).

Grid Parcel

The Grid Parcel encompasses approximately 74 acres of land bounded by East Parade Avenue, East 12th Street, Dearing Avenue, and Military Road. Archaeological testing had been completed in the Grid Parcel in 1998 and in 2007. Both surveys revealed the area was highly disturbed by previous construction and demolition activities associated with former military barracks, utilities, sewer lines, parking lots, or roadways. Three isolated prehistoric artifacts were recovered from the Grid Parcel; however, no sites were discovered as part of the surveys and no further work was recommended. The SHPO concurred with this recommendation in correspondence dated November 28, 2012 (**Appendix E**).

LRA Parcel 9

The LRA Parcel 9 is comprised of approximately 727 acres of land, bounded by Military Road, West 10th Street, and East Parade Avenue. As a result of the Phase I investigations, eleven previously unknown archaeological sites were discovered in LRA Parcel 9. Three of the sites, Site 44NT0207, 44NT0210, and Site 44NT0212, were recommended as being potentially eligible for the NRHP and all other sites were recommended not eligible. Additional work or avoidance was recommended for the three potentially eligible sites. The SHPO concurred with this recommendation in correspondence dated November 28, 2012 (**Appendix E**). Results of excavations in LRA Parcel 9 are described in **Table 3.2-2**.

Table 3.2-2. Recommendations for Phase I Sites in LRA Parcel 9

Site Number	Site Name	Eligibility Recommendation	Action Recommendation
44NT0207	Golder House Site	Potentially eligible	Avoidance or Phase II
44NT0208	Military Site 1	Not eligible	No additional work
44NT0209	Military Site 2	Not eligible	No additional work
44NT0210	Pottery Ridge Site	Potentially eligible	Avoidance or Phase II
44NT0211	Gunn House Site	Not eligible	No additional work
44NT0212	Garnett Street Site	Potentially eligible	Avoidance or Phase II
44NT0213	Military Burn Site	Not eligible	No additional work
44NT0214	Gunn Scatter Site	Not eligible	No additional work
44NT0215	Military Mess Scatter Site	Not eligible	No additional work
44NT0216	Military Housing Site	Not eligible	No additional work
44NT0217	Sydnor House Site	Not eligible	No additional work

Phase II evaluation was completed at three archaeological sites located on the LRA Parcel 9 property to determine their eligibility. These sites included: Site 44NT0045, a World War II-era tent camp; Site 44NT0056, a historic house site with prehistoric elements and Site 44NT0072, a small Woodland Period site. These sites had been discovered as a result of previous investigations at Fort Pickett and were recommended as eligible for the NRHP.

The Phase II investigation of Site 44NT0045 determined that in general, the tent camp conforms to U.S. Army regulations for the layout of a camp site and compares to other known stateside tent camps of the period. In addition, a very low number of artifacts were recovered from the Phase I shovel testing and the metal detecting survey conducted within the camp. It is expected that any additional testing at the

site would produce artifacts of similar quantity and type. Therefore, Site 44NT0045 was recommended not eligible to the NRHP and no additional work was recommended at the site. The SHPO concurred with this recommendation in correspondence dated November 28, 2012 (**Appendix E**).

Phase II investigations of Site 44NT0056 included placing test units (TUs) at the site to further investigate the historic and prehistoric components previously recorded there. Investigations determined that the prehistoric component was a light artifact scatter that was not eligible for the NRHP. Although a portion of the main house was discovered during the excavations, it was determined that it was disturbed and not likely to provide information important to the agricultural history of Nottoway County in the late nineteenth or early twentieth centuries. Site 44NT0056 was recommended to be not eligible for the NRHP and no further work was recommended here. The SHPO concurred with this recommendation in correspondence dated July 2, 2012 (**Appendix E**).

Phase II investigations were conducted at Site 44NT0072 in 2009. Analysis of the Phase II field notes and artifact inventory was conducted to provide a summary of the investigations. Evaluation of the site indicates that no features were discovered and no deeply buried soils containing cultural materials exist there. Site 44NT0072 was recommended to be not eligible for the NRHP and no further work was recommended at the site. The SHPO concurred with this recommendation in correspondence dated July 2, 2012 (**Appendix E**).

In addition, Phase II evaluation was conducted at Site 44NT0207, which was discovered during the Cardno TEC Phase I survey, to determine if the site is eligible for the NRHP. Excavations at this site indicated the site was disturbed by previous military activities in this area and it was recommended as not eligible for the NRHP. The SHPO concurred with this recommendation in correspondence dated November 26, 2014 (**Appendix E**).

Sites 44NT0210 and 44NT0212 were avoided during project design and, therefore, did not receive Phase II testing and evaluation. Should future project design result in potential impacts to these two sites, Phase II testing is recommended. Results of the Phase II evaluations and recommendations are summarized in **Table 3.2-3**. None of the four previously recorded sites were recommended as eligible for the NRHP.

Table 3.2-3. Recommendations for Phase II Sites, LRA Parcel 9

Site Number	Site Name	Eligibility Recommendation	Action Recommendation
44NT0045	Camp Pickett Tent Camp Site	Not eligible	No additional work
44NT0056	Not applicable (N/A)	Not eligible	No additional work
44NT0072	N/A	Not eligible	No additional work
44NT0207	Golder Site	Not eligible	No additional work

Summary of Potentially Eligible Archaeological Sites of the APE

Based on all testing and analysis, there are six sites determined to be potentially eligible for the NRHP; these sites are listed in **Table 3.2-4**. For final determination of eligibility, Phase II work would be required if the site would be disturbed or otherwise impacted by a project. The SHPO concurred with this determination of potential eligibility in correspondence provided in **Appendix E**.

Table 3.2-4. Summary of Potentially Eligible Historic Sites

Site Number	Site Name	Eligibility Recommendation	Action Recommendation	Location
44NT0210	Pottery Ridge Site	Potentially eligible	Avoidance or Phase II	LRA Parcel 9
44NT0212	Garnett Street Site	Potentially eligible	Avoidance or Phase II	LRA Parcel 9
44NT0219	Tank Trail 2	Potentially eligible	Avoidance or Phase II	Parcel 21/20
44NT0220	Tank Trail 3	Potentially eligible	Avoidance or Phase II	Parcel 21/20
44NT0221	Birchin Creek Ridge Site	Potentially eligible	Avoidance or Phase II	Parcel 21/20
44NT0222	Firing Range Site	Potentially eligible	Avoidance or Phase II	Parcel 21/20

3.2.2 Air Quality

Air Quality of the Study Area

- Air quality in the study area is considered good
- The study area is in attainment for all criteria pollutants

Air quality is defined by ambient air concentrations of specific pollutants determined by the USEPA to be of concern related to the health and welfare of the general public and the environment and are widespread across the U.S. The primary pollutants of concern, called "criteria pollutants," include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead. Under the Clean Air Act (CAA), the USEPA has established National Ambient Air Quality Standards (NAAQS)[14] for these pollutants. These standards represent the maximum allowable atmospheric concentrations that may occur while ensuring protection of public health and welfare, with a reasonable margin of safety. Short-term standards (1-, 8-, and 24-hour periods) are established for pollutants contributing to acute health effects, while long-term standards (quarterly and annual averages) are established for pollutants contributing to chronic health effects. VDEQ has adopted the NAAQS, which are presented in **Table 3.2-5**.

In addition to the ambient air quality standards for criteria pollutants, national standards exist for hazardous air pollutants (HAPs) which are regulated under Section 112(b) of the 1990 CAA Amendments. The National Emission Standards for Hazardous Air Pollutants (NESHAPs) regulate HAP emissions from stationary sources[15]. HAPs emitted from mobile sources are called mobile source air toxics (MSATs); these are compounds emitted from highway vehicles and non-road equipment that are known or suspected to cause cancer or other serious health and environmental effects. In 2001, USEPA issued its first MSAT Rule, which identified 21 compounds as being HAPs that required regulation. A subset of six of these MSAT compounds were identified as having the greatest influence on health and include benzene: 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter. In February 2007, USEPA issued a second MSAT Rule, which generally supported the findings in the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented.

[14] 40 CFR Part 50
[15] 40 CFR Parts 61 and 63

Table 3.2-5. National Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standards	Secondary Standards
CO	8-hr 1-hr	9 ppm (10 mg/m^3) 35 ppm (40 mg/m^3)	None
Lead	Rolling 3-Month Average	0.15 µg/m^3	Same as Primary
NO_2	Annual (arithmetic average)	53 ppb	Same as Primary
	1-hr	100 ppb	None
PM_{10}	24-hr	150 µg/m^3	Same as Primary
$PM_{2.5}$	Annual (arithmetic average)	15.0 µg/m^3	Same as Primary
	24-hr	35 µg/m^3	Same as Primary
O_3	8-hr	0.075 ppm	Same as Primary
SO_2	Annual (arithmetic average)	0.03 ppm	None
	24-hr	0.14 ppm	None
	3-hr	None	0.5 ppm
	1-hr	75 ppb	None

Source: *USEPA 2011*

Notes: *ppb – parts per billion; ppm – parts per million; mg/m^3 – milligrams per cubic meter; µg/m^3 – micrograms per cubic meter*

Unlike the criteria pollutants, there are no NAAQS for benzene and other HAPs. The primary control methodologies instituted by federal regulation for MSATs involve technological improvements for reducing their content in fuel and altering engine operating characteristics to reduce the volume of pollutants generated during combustion.

3.2.2.1 Greenhouse Gases

Greenhouse Gases (GHGs) are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

USEPA issued the Final *Mandatory Reporting of Greenhouse Gases Rule* on September 22, 2009. GHGs covered under the Final *Mandatory Reporting of Greenhouse Gases Rule* are carbon dioxide (CO_2), methane, and nitrous oxide, and hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other fluorinated gases including nitrogen trifluoride and hydrofluorinated ethers. Each GHG is assigned a global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to CO_2, which has a value of one. For example, methane has a GWP of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis. The equivalent CO_2 rate is calculated by multiplying the emission of each GHG by its GWP and adding the results together to produce a single, combined emission rate representing all GHGs. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of mobile sources and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions as CO_2 equivalent are required to submit annual reports to USEPA.

On a national scale, federal agencies are addressing emissions of GHGs by reductions mandated in federal laws and EOs enacted to address GHGs, including GHG emissions inventory, reduction, and reporting[16].

3.2.2.2 Regional Air Quality

Air quality in a given location is described by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Pollutant emissions typically refer to the amount of pollutants or pollutant precursors introduced into the atmosphere by a source or group of sources. Pollutant emissions contribute to the ambient air concentrations of criteria pollutants, either by directly affecting the pollutant concentrations measured in the ambient air or by interacting in the atmosphere to form criteria pollutants. Primary pollutants, such as CO, SO_2, lead, and some particulates, are emitted directly into the atmosphere from emission sources. Secondary pollutants, such as O_3, NO_2, and some particulates are formed through atmospheric chemical reactions that are influenced by meteorology, ultraviolet light, and other atmospheric processes.

The study area for the air quality analysis includes the Central Virginia Intrastate Air Quality Control Region, which is defined in 40 CFR §81.143, and comprises several counties, including Brunswick, Lunenburg and Nottoway counties along with associated towns and cities. Air quality in the study area is considered good, with the study area designated as unclassifiable, attainment, or better than national standards for all criteria pollutants[17]. Because the study area is in attainment for all criteria pollutants, the CAA General Conformity Rule[18] does not apply and is not addressed in this analysis. Although a conformity analysis is not required, impacts to air quality from emissions associated with construction and training operations are addressed in Chapter 4.

3.2.3 Noise

Noise is discussed in terms of its effect on the environment. For purposes of this Supplemental Draft EIS, the study area for noise is the area in proximity to the study area parcels that would be affected by noise generated by FASTC training activities when added to the existing noise sources at Fort Pickett.

Noise is the term used to identify disagreeable, unwanted sound that interferes with normal activities or diminishes the quality of the environment, according to the Operational Noise Program at the U.S. Army Center for Health Promotion and Preventative Medicine (USACHPPM 2006). When sounds interfere with speech, disturb sleep, or interrupt routine tasks, they become noise.

Noise is described by the sound intensity or level as measured in units of decibels (dB). The dB system of measuring sound provides a simplified relationship between the physical intensity of sound and its perceived loudness to the human ear. The dB scale is logarithmic; therefore, sound intensity increases or decreases exponentially with each dB of change. For example, 10 dB yields a sound level 10 times more

[16] EO 13423 Strengthening Federal Environmental, Energy, and Transportation Management, and EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance
[17] 40 CFR §81.347
[18] 40 CFR Parts 51 and 93

intense than one dB, while a 20 dB level equates to a level 100 times more intense, and a 30 dB level is 1,000 times more intense.

Noise impacts result from perceptible changes in the overall noise environment that increase "annoyance" or affect human health. Human health effects such as hearing loss and noise-related awakenings can result from noise. Annoyance is a subjective impression of noise wherein people apply both physical and emotional variables. **Table 3.2-6** presents sound levels in dBs for typical sounds found in the human environment and the reaction that might occur when an individual (or receptor) is exposed to these noise levels.

Table 3.2-6. Common Sound Levels Measured in Decibels

Source (at given distance)	Decibel (dB) Level	Typical Reaction
Civil Defense Siren (e.g., tornado, flood warning sirens) (100 feet)	140	Pain
	130	
Jackhammer (50 feet)	120	Maximum Vocal Effort
Pile Driver (50 feet)	110	
Ambulance Siren (100 feet)	100	Extreme Annoyance/ Discomfort
Motorcycle (25 feet) Power Lawnmower	90	
Farm Tractor (25 feet)[1]	85	Intrusive
Garbage Disposal (3 feet) Alarm Clock	80	
Vacuum Cleaner (3 feet)	70	
Normal Conversation (5 feet) Dishwasher	60	Normal Speech
Light Traffic (100 feet)	50	
Bird Calls (Distant)	40	Quiet
Soft Whisper (5 feet)	30	
Human Breathing	20	Just Audible
	10	
	0	

Source: *USACHPPM 2006*
Notes: *[1]VA Cooperation Extension 2009 – average of tractors tested in dBA*

To increase annoyance, the cumulative noise energy must increase measurably. Potential increases in noise energy are predicted using specialized computer models that quantify noise impacts using standardized units of measure or metrics.

3.2.3.1 Metrics for Measuring Noise

Humans 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. Also, the threshold of hearing damage for unprotected personnel is different for impulsive noise than it is for continuous noise. Because of the difference in human response to these types of noise events, noise is assessed using several different noise metrics. Following are the noise metrics used in this analysis:

A-weighted dB Scale (dBA) – Since the human ear cannot perceive all pitches or frequencies, these measures are adjusted or weighted to compensate for the human lack of sensitivity to low-pitched and high-pitched sounds. This adjustment is known as the A-weighted dB or dBA. The dBA is used to evaluate noise sources related to transportation (e.g., traffic and aircraft) and small arms firing (smaller

than 50 caliber). The dBA scale is used to assess driving exercises for the FASTC program. There are no existing driving exercises at Fort Pickett.

C-weighted dB Scale (dBC) - Community 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 compared to the A-weighted scale.

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 may hear; it includes a 10 dB penalty for nighttime noise events. For the purpose of this analysis, daytime is defined as the period from 7:00 a.m. to 10:00 p.m., and nighttime is the period from 10:00 p.m. to 7:00 a.m. the following morning. The 10 dB penalty accounts for the generally lower background sound levels and greater community sensitivity to noise during nighttime hours.

How is noise measured?

- dB: perceived loudness to the human ear
- dBA: measure of traffic and aircraft noise
- CDNL: measure of average daytime and nighttime C-weighted noise in a community
- PK15(met): peak noise level in unfavorable weather conditions, such as temperature inversion or high wind, which enhance sound propagation and occur only 15% of the time
- PK50(met): peak noise in neutral weather conditions expected to occur 50% of the time
- Noise contour map: noise levels shown as lines or contours on a map that define noise zones

CDNL – For impulsive community 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. Noise zones are used to assess land use compatibility.

Peak Sound Pressure Level (dBP) – The dBP is the highest instantaneous, unweighted sound during any given sound event. It is also used to quantify impulsive, short duration events such as a large caliber and small arms weapon firing and explosive detonation. High peak sound levels can generate complaints from people in the local community. Peak noise is not used to measure the significance of noise impacts, but because it often generates complaints, it is analyzed to provide supplemental information for potentially affected areas. Peak noise is characterized by the level of complaint risk, low, moderate, or high.

Peak sound levels can vary significantly due to varying weather conditions. Therefore, computer models used to predict peak levels account for this variation by using the metrics PK15(met) and PK50(met).

PK15(met) – PK15(met) is the metric for peak sound level, factoring in the statistical variations caused by weather, that is likely to be exceeded only 15% of the time. Such weather conditions are infrequent and include temperature inversions or high winds that enhance sound propagation.

PK50(met) – For neutral weather conditions, without significant variations, PK50(met) is the metric used for the peak sound level that is likely to be exceeded 50% of the time.

3.2.3.2 Standards for Evaluating Noise

Army Regulation 200-1 defines four noise zones that are used to evaluate land use compatibility and potential significance of noise impacts.

- **Land Use Planning Zone (LUPZ):** The LUPZ is a subdivision of Zone I. The LUPZ is 5 dB lower than Zone II. Within this area, noise-sensitive land uses are generally acceptable. However, communities and individuals often have different views regarding what level of noise is acceptable or desirable. To address this, some local governments have implemented land use planning measures out beyond the Zone II limits. Additionally, implementing planning controls within the LUPZ can develop a buffer to avert the possibility of future noise conflicts.
- **Zone I**: Noise-sensitive land uses are generally acceptable within Zone I. However, though an area may only receive Zone I levels, noise may be loud enough to be heard or even judged loud on occasion. Zone I is not one of the contours shown on a noise contour map; rather it is the area outside of the Zone II contour.
- **Zone II**: Although local conditions such as availability of developable land or cost may require noise-sensitive land uses in Zone II, this type of land use is strongly discouraged. Limiting development in Zone II to non-sensitive activities such as industry, manufacturing, transportation, and agriculture is recommended.
- **Zone III**: Noise-sensitive land uses are not recommended in Zone III.

How is noise evaluated?

Land Use Compatibility

- **LUPZ**: noise zone where land use planning is recommended
- Zone I: compatible with noise sensitive land uses
- Zone II: sometimes compatible with noise sensitive uses, but most compatible with industry, manufacturing, transportation, and agriculture
- Zone III: not compatible with noise sensitive land uses

Peak Noise Complaint Risk Level

- < 115 dB = Low
- 115-130 dB = Moderate
- 130-140 dB = High
- >140 dB = ear protection needed

Table 3.2-7 describes the noise zones in relation to the CDNL noise contours provided in this analysis.

Table 3.2-7. Noise Zone Definitions

Noise Zone	Noise Limits (dB)	
	Large Caliber, Demolitions, etc. (CDNL)	Small Arms PK15(met)
LUPZ	57 to 62	
Zone I	<62	<87
Zone II	62 to 70	87 to 104
Zone III	>70	>104

Notes: *< = less than; > = greater than*

Annual average daily noise levels (i.e., CDNL) were evaluated to determine the significance of the noise impacts. The PK15(met) metric is used to determine noise zones for small arms as listed in **Table 3.2-7**. However, complaints are more attributed to single specific events rather than annual average noise levels. Peak levels are appropriate for estimating the risk of receiving a noise complaint because they correlate with the receiver's perception of the single event noise level. **Table 3.2-8** indicates the risk of receiving noise complaints with increasing levels of impulsive noise from large weapons and demolition.

Table 3.2-8. Complaint Risk Guidelines for Impulsive Noise

Perceptibility	Large Weapon Noise Limit (dB) PK 15 (met)	Risk of Receiving Noise Complaints
Audible	<115	Low
Noticeable	115 to 130	Moderate
Loud, May Startle	130 to 140	High
Intense, at or above Threshold of Pain and Discomfort	>140	Risk of Physiological damage to unprotected human ears and structural damage claims

Notes: *< = less than; > = greater than*

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 **Appendix G**.

To assess noise from driving tracks, local ordinances were reviewed. The town of Blackstone Municipal Code Section 26-51 Enumeration of Prohibited Noises does not specify maximum noise limits, but states that "It shall be unlawful for any person to cause, make or contribute to creating any loud or disturbing noise of such character, intensity or duration as to be detrimental to the life or health of any individual, or such noises as disturb the quiet and peace of any citizen of the town." The code does not specify numerical noise criteria.

A survey of ordinances of the surrounding towns and counties was performed to determine the commonly-accepted criteria for environmental noise in the area. The strictest of the daytime noise ordinance limits in residential zones are maximum A-weighted sound levels of 65 dB during the day and 55 dB at night outdoors. These criteria were used in the analysis of maximum sound levels.

3.2.3.3 Existing Noise Environment – Fort Pickett Baseline

The noise environment at military training areas, such as Fort Pickett, includes different types of noise sources that can either be classified as non-impulsive noise (e.g., vehicular traffic and aircraft operations) or impulsive noise (e.g., weapons firing or detonation of explosives). The 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. There are no driver training tracks or separate simulator training areas at Fort Pickett; therefore, these operations are not part of the analysis of the existing environment.

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 105mm Howitzer firings occur 565 times per year during the daytime and 63 times per year during nighttime hours at just one gun 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 **Appendix G**.

The Fort Pickett noise environment serves as the baseline for the analysis of the Proposed Action of this Supplemental Draft EIS. The baseline was taken from the U.S. Army Public Health Command (USAPHC) Operational Noise Consultation No. 52-EN-0FNT-12 Operational Noise Contours Fort Pickett, Virginia, November 28, 2011 (USAPHC 2011). The baseline was evaluated two ways:

1. **Noise Zones**: CDNL measures continuous noise exposure from a land use planning perspective to identify areas, in specific noise zones, which are compatible with residential, commercial, or other types of development.
2. **Complaint Risk Areas**: PK15(met) and PK50(met) measure peak noise complaint risk areas, where peak noise levels might prompt people to complain.

3.2.3.4 Demolition and Large Caliber Weapons

Baseline Noise Zones

The baseline CDNL noise zones are shown in **Figure 3.2-1**. The Baseline LUPZ (57 dB CDNL) extends beyond the Fort Pickett boundary to the east, south, and west. Zone II (62 dB CDNL) extends beyond the western and southern boundaries 1,000 and 2,300 feet respectively, and it extends beyond the eastern boundary up to 5,250 feet. Zone III (70 dB CDNL) extends beyond the boundary less than 1,300 feet from the activity at firing point series 33 and 53.

The Zone II and III areas extending outside the Fort Pickett boundaries are sparsely developed rural land. These areas are contained within the Fort Pickett ACUB (refer to **Section 3.1.5.1**). The ACUB serves the dual purpose of habitat conservation and providing a buffer between the military operations, particularly those that generate noise, and surrounding communities.

There are residential areas, schools, and churches within three miles of the study area in Nottoway, Brunswick, and Lunenburg Counties. There are several individual residences within one mile of the Fort Pickett boundary. As part of Fort Pickett's noise program, staff investigates each noise complaint and noise is limited during certain days and hours during the week to minimize impacts to sensitive receptors. Under the baseline condition, Nottoway County and the town of Blackstone are mostly outside all Fort Pickett noise zones.

Parcel 21/20

Under the baseline condition, the eastern edge of Parcel 21/20 is within noise Zone II (**Figure 3.2-1**). The remainder of the parcel is within the LUPZ noise zone.

Grid Parcel

The Grid Parcel is within the LUPZ noise zone under the baseline condition.

LRA Parcel 9

LRA Parcel 9 is within the LUPZ noise zone under the baseline condition.

Baseline Complaint Risk Areas

The baseline complaint risk areas for peak noise from demolition and large caliber weapons operations are shown using PK15(met) contours in **Figure 3.2-2**. **Figure 3.2-3** shows the results for the PK50(met) contours. The following results from USAPHC 2011 were determined for demolition and large caliber weapons operations:

Under enhanced propagation conditions (**Figure 3.2-2**), the High Complaint Risk area (130 to 140 dB PK15[met]) extends beyond the Fort Pickett boundary less than 2,950 feet (0.6 miles) from artillery firing

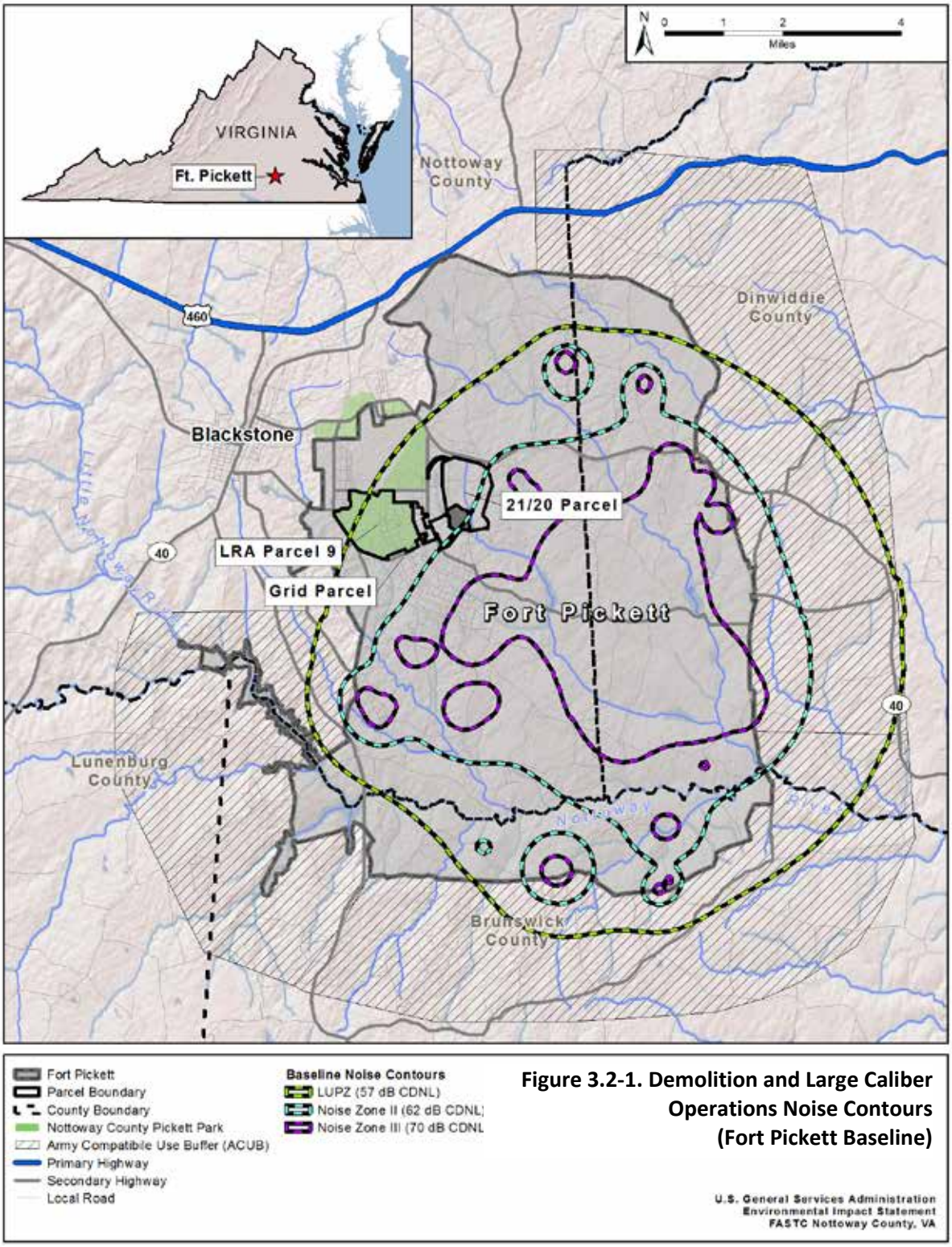


Figure 3.2-1. Demolition and Large Caliber Operations Noise Contours (Fort Pickett Baseline)

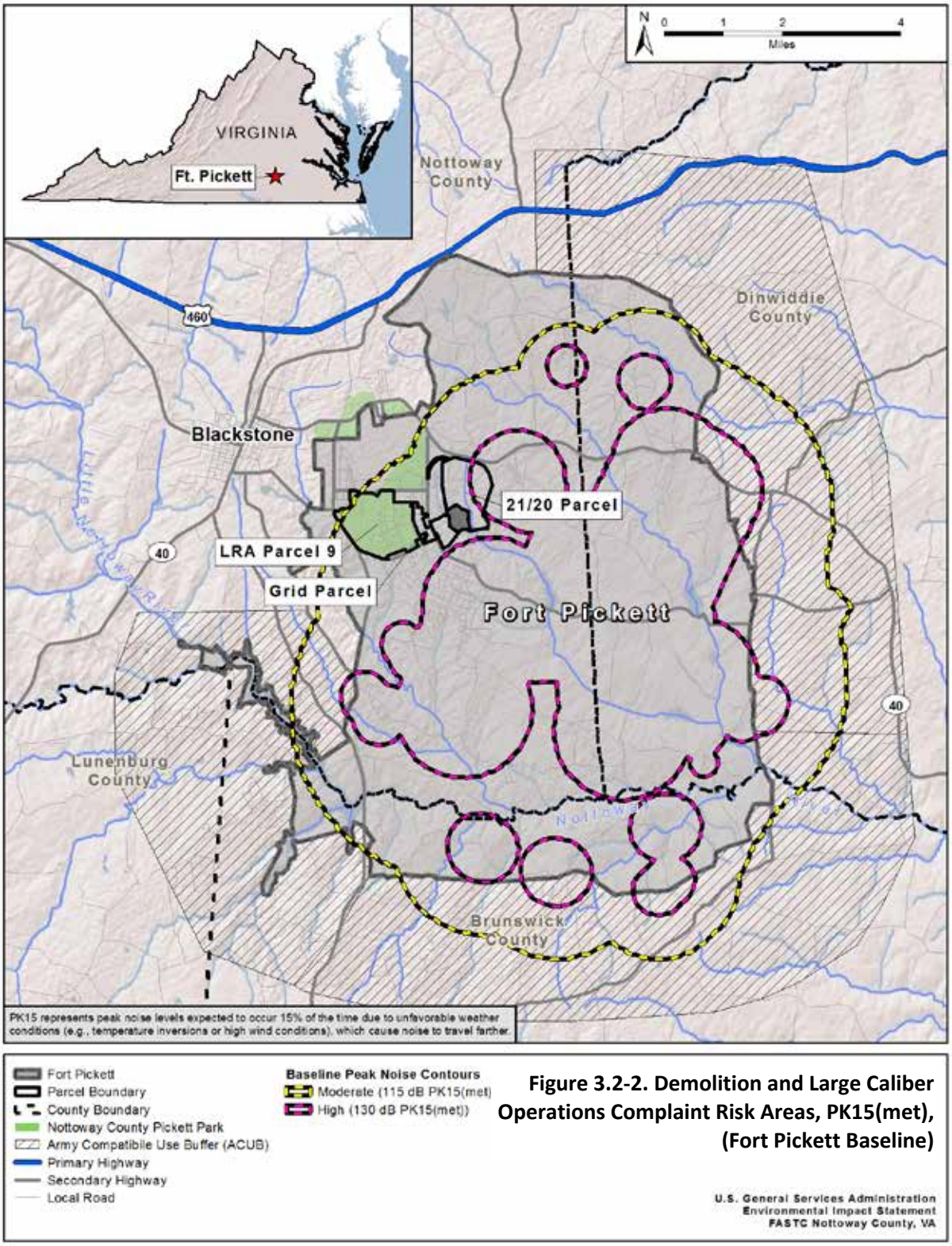


Figure 3.2-2. Demolition and Large Caliber Operations Complaint Risk Areas, PK15(met), (Fort Pickett Baseline)

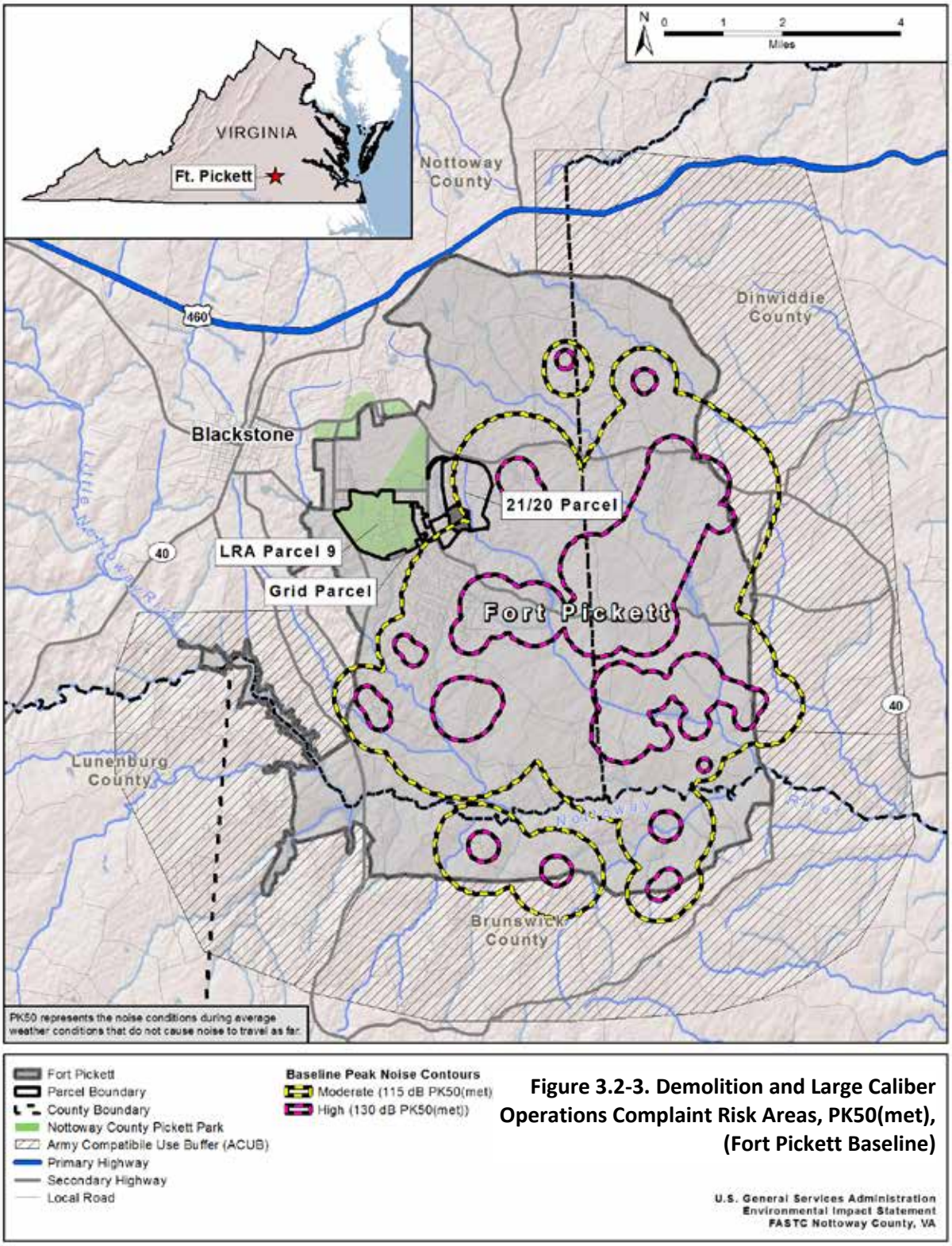


Figure 3.2-3. Demolition and Large Caliber Operations Complaint Risk Areas, PK50(met), (Fort Pickett Baseline)

points in limited areas at the northeastern, southeastern, and southern boundaries of Fort Pickett. The Moderate Complaint Risk area (115 to 130 dB PK15[met]) extends beyond the Fort Pickett boundary in most directions up to 7,220 feet (1.4 miles).

Under neutral propagation conditions (**Figure 3.2-3**), the High Complaint Risk area (130 to 140 dB PK50[met]) remains within Fort Pickett except for small areas near the northeastern, southeastern and southern boundary. The Moderate Complaint Risk area (115 to 130 dB PK50[met]) extends beyond the boundary less than 4,250 feet (0.8 miles) in several areas.

The southeast corner of Nottoway County along Ridge Road on the southwest border of Fort Pickett experiences peak noise levels (115dB and 130dB). The west side of Dinwiddie County and the north side of Brunswick County are within the LUPZ or Noise Zone II and experience peak noise levels (115dB and 130dB) in areas closest to the eastern and southern border of Fort Pickett.

Though the complaint risk guidelines would indicate a moderate to high risk of complaints, these areas are sparsely developed, and as such, the risk of complaints from off-post residences is low under the baseline scenario. Although these baseline contours do extend outside Fort Pickett in certain areas they do not extend beyond the ACUB.

Fort Pickett's existing noise program assigns staff to accept and investigate any noise complaints. Complaints are reported to be infrequent, and it is believed the surrounding community has generally accepted existing noise levels. As mentioned, Fort Pickett controls noise during certain times of day or days of the week (VDMA 2011).

Parcel 21/20

Under the baseline condition, the northeast section of Parcel 21/20 is within the 130 dB noise contour under less frequent peak noise (PK15[met]) from demolition and large caliber weapons. Most of the parcel falls within the 115 dB contour for less frequent peak noise (PK15[met]), and therefore has a moderate risk for noise complaints. All except the eastern border of Parcel 21/20 is within Zone II (87 dB PK15[met]) for small caliber weapons. The area along the eastern border closest to the Fort Pickett ranges experiences Zone III (104 dB [PK15met]).

Grid Parcel

The Grid Parcel is located within the 115 dB contour for less frequent peak noise (PK15[met]) from demolition and large caliber weapons, and therefore has a moderate risk for noise complaints. It is outside the complaint risk zone under average weather conditions (PK50[met]). The southern half of the Grid Parcel is within the Zone II for small caliber weapons.

LRA Parcel 9

LRA Parcel 9 falls within the 115 dB contour for less frequent peak noise (PK15[met]) from demolition and large caliber weapons, and therefore has a moderate risk for noise complaints. It is outside the complaint risk zone under average weather conditions (PK50[met]).

3.2.3.5 Firing Ranges (Small Caliber Weapons)

Baseline Noise Zones

All existing firing ranges at Fort Pickett are outdoor ranges. Per Army Regulation 200-1 (U.S. Army 2007), small arms operations for the baseline are analyzed using PK15(met). The noise zone definitions were provided in **Table 3.2-7**. 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 for small caliber weapons noise contours at Fort Pickett, which were developed by the USAPHC (2011), are shown in **Figure 3.2-4**. Along the eastern boundary, Zone II (87 dB PK15[met]) extends less than 5,900 feet (1.1 miles) into the community and Zone III (104 dB PK15[met]) extends less than 820 feet into the community. The Zone II and III areas outside Fort Pickett are sparsely developed and are contained within the ACUB.

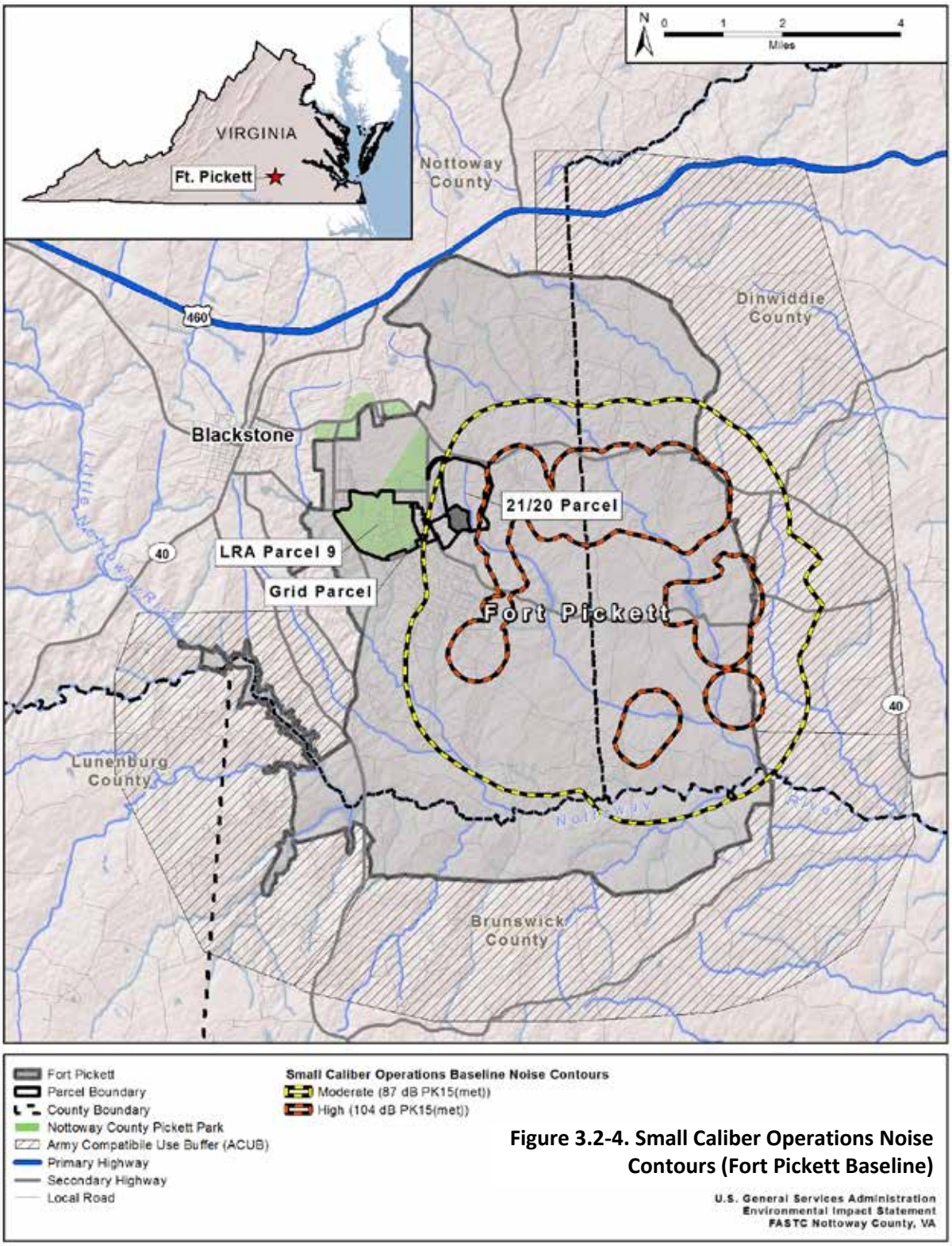


Figure 3.2-4. Small Caliber Operations Noise Contours (Fort Pickett Baseline)

3.2.3.6 Aircraft

In addition to noises created by the ranges, aircraft training at Fort Pickett is considered a primary source of noise (VDMA 2011). Presently, Fort Pickett manages the largest block of Army Special Use Airspace in the mid-Atlantic region (VDMA 2011). All aircraft are transient rather than being based at Fort Pickett; therefore, aircraft noise is not included in the noise contour maps of the Fort Pickett baseline.

Aircraft operating in this space include Unmanned Aerial Systems (drones) such as the RQ-7 Shadow, RQ-11 Raven, RQ-8 Fire Scout RQ-4 Global Hawk and Eagle Eye; high performance military jets; various military helicopters such as the CH-46, CH-47, UH-60, and the OH-58; the military transport planes such as the C-17 and C-130; and the V-22 Osprey. Since 2006, Fort Pickett has experienced a quadrupling in the use of drones, and the presence of the V-22 Osprey has also recently increased (VDMA 2011).

Aircraft operations conducted include the firing of training ordnance, dropping of inert missiles, bombs, and bullets. The C-17 and C-130 conduct tactical assault training during low light, low traffic conditions, and practice a variety of aerial delivery skills. According the VaARNG, the C-17 is the loudest aircraft that uses the airfield (USACHPPM 2005). Aircraft using the airfield and ranges come from Naval Air Station Norfolk, Naval Air Station Oceana, Marine Corps Air Station New River, Marine Corps Air Station Cherry Point, Marine Corps Base Camp Lejeune, Charleston Air Force Base, Dover Air Force Base, McGuire Air Force Base, and the Helicopter Sea Combat Weapons School (VDMA 2011). Some type of aircraft is operating at Fort Pickett on the training range or at the airfield every day of the year (VDMA 2011).

The VaARNG does not allow high performance aircraft to operate at Fort Pickett between 9:00 a.m. and 12:00 p.m. on Sundays or all day on Easter Sunday. **Table 3.2-9** shows maximum sound levels encountered at the Blackstone Army Airfield for several aircraft types.

Table 3.2-9. Maximum Noise Levels at Blackstone Army Airfield by Aircraft Type

Slant Distance (feet)	C-17 (dBA)	AH-64 (dBA)	CH-47D (dBA)	OH-58D (dBA)	UH-60 (dBA)
200	101.0	91.8	97.5	89.0	91.0
500	91.4	83.4	89.3	80.5	82.5
1,000	83.3	76.8	83.0	73.8	75.9
2,000	74.4	69.8	76.5	66.7	68.7
5,000	62.1	59.1	67.1	56.1	57.8
10,000	51.8	49.6	59.1	47.1	48.0

Source*: Virginia National Guard State-wide Operational Noise Management Plan*

3.2.3.7 Occupational Noise Exposure

The federal Occupational Safety and Health Administration (OSHA) has established dB levels for hearing protection that include limits on continuous and impulsive noise exposure (U.S. Department of Labor 2012). For continuous noise, the OSHA criterion level or permissible exposure limit is 90 dB (A-weighted), as an 8-hour, time-weighted average level. This standard specifies a 5 dB exchange rate, meaning for every 5 dB increase in noise level, the permitted exposure time is cut in half. Using this criterion, individuals may be exposed to a noise level of 90 dBA for no longer than 8 hours before a temporary threshold shift is expected. Higher levels are permitted for shorter durations. For example, a

time-weighted average level of 95 dBA reduces the time for an individual to receive a maximum dose from 8 hours to 4 hours. Similarly, for a time-weighted average level of 85 dBA, the permissible exposure time is increased by a factor of two. The OSHA hearing protection criterion limits the maximum A-weighted sound level (for unprotected personnel) to 115 dBA (for 15 minutes); the threshold level for dose computations is 80 dBA.

Although the permissible noise exposure limit is defined as 90 dBA for 8 hours, OSHA also published a hearing conservation amendment that specifies that employers must administer a continuing, effective hearing conservation program whenever employee noise exposures are at or above an 8-hour time-weighted average of 85 dBA.

For impulsive noise, the OSHA criterion for unprotected occupational noise exposure is an unweighted peak level of 140 dB. The OSHA procedure for determining occupational noise exposure is to evaluate both continuous and impulsive noise separately using their respective criteria. If, in either case, noise levels exceed the stated criteria then OSHA requires a reduction in noise exposure via implementing a hearing conservation program.

Fort Pickett's existing demolition and large caliber weapons operations produce peak noise levels and any personnel in the vicinity of these operations are required to use hearing protection.

3.2.4 Land Use and Zoning

Land use often refers to human modification of land for economic or residential purposes. Attributes of land use include ownership and general use, in addition to any land management plans in place for a particular location. Land uses are frequently regulated by management plans, policies, ordinances, and regulations that determine the types of uses that are allowable or to protect specially designated or environmentally sensitive uses. Some examples of typical categories of land use include agriculture, forest, residential, commercial, industrial, utilities, and recreation. Management plans, land use plans, comprehensive plans, and local zoning assist in identifying certain areas for types of land use and in locating future development uses that are compatible with surrounding land use types. Zoning is the control of the use of the land by an authority that establishes permitted uses within each zone. The study area for land use and zoning is the area surrounding the study area parcels within Fort Pickett and adjacent areas of Nottoway County and Parcel 21/20, the Grid Parcel, and LRA Parcel 9. The zoning for each area is described individually in this section and are depicted on **Figure 3.2-5**.

3.2.4.1 Fort Pickett and Nottoway County

Land immediately adjacent to the study area parcels is zoned for light industrial business in Pickett Park, the Blackstone Army Airfield, and for military purposes within Fort Pickett. Much of Fort Pickett's 42,000 acres is undeveloped. Forest management, including timber harvests (silviculture), is conducted at Fort Pickett and in the surrounding area. Areas of Nottoway County adjacent to Fort Pickett are zoned residential, industrial, and conservation. The land outside of Pickett Park and Fort Pickett is primarily rural, with forestry and agriculture being the predominant uses.

The Virginia Polytechnic Institute Southern Piedmont Agricultural Research and Extension Center is located on 1,130 acres north of the Blackstone Army Airfield. This facility is dedicated to research and extension programs for sustainable production of tobacco, small fruits, cotton, and forage crops and

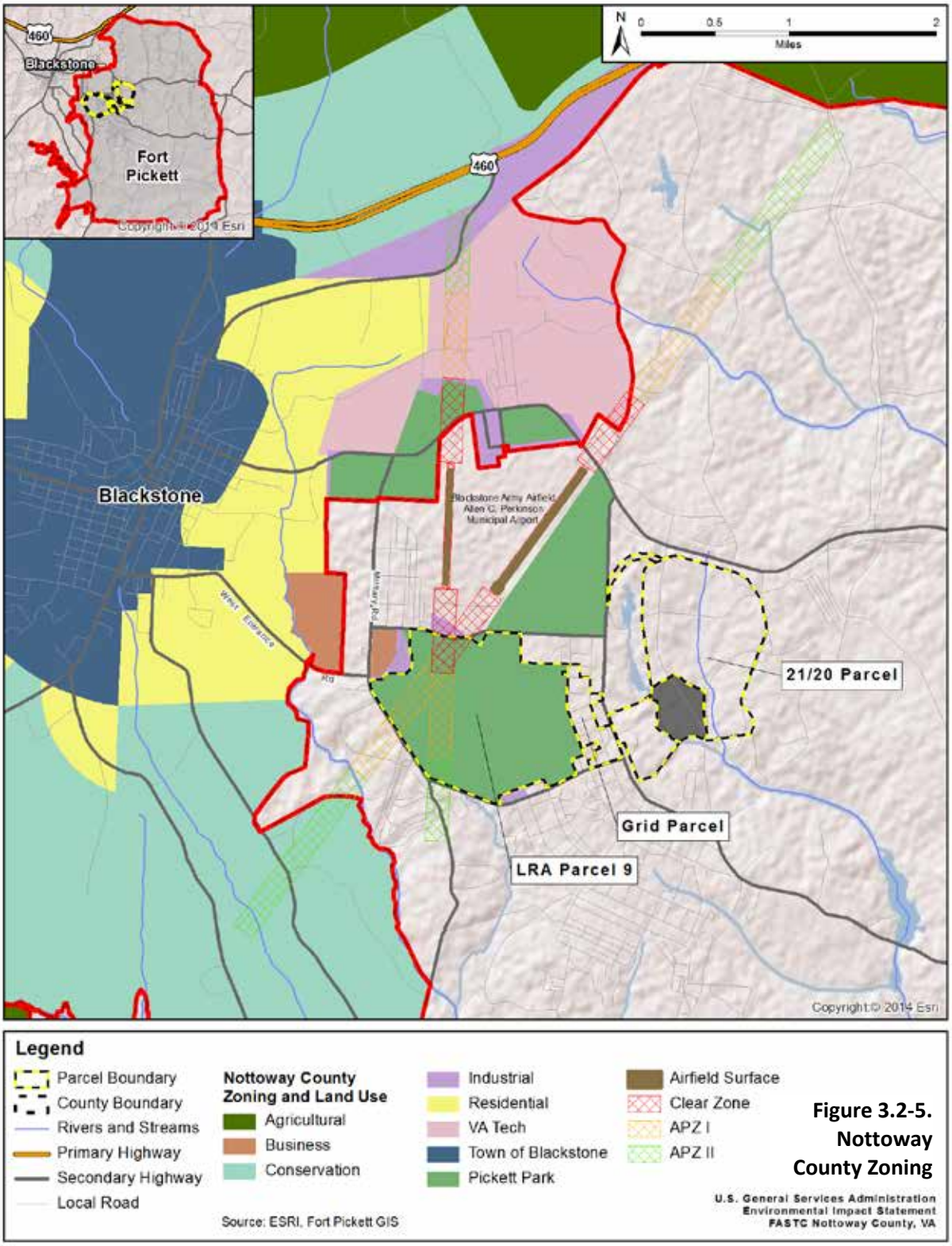


Figure 3.2-5. Nottoway County Zoning

grains, as well as grazing lands and cattle production (VaARNG 2001). The Extension Center's main activity is to grow crops. However, they have plans to add livestock and have installed a Super Dual Auroral Radar Network, or SuperDARN, as part of an international network (Virginia Tech Southern Piedmont Agricultural Research and Extension Center 2012).

The Southside Virginia Community College operates a technical school for truck driver training and maintenance in Pickett Park on the south side of the airfield near the northern boundary of LRA Parcel 9. Arbortech, a large computerized sawmill, is also located in Pickett Park.

The town of Blackstone is located approximately two miles to the west. Some small business and industry is located in Blackstone. The town regulates zoning separately from the county. Much of downtown Blackstone is zoned light to medium residential with general business zones along Main Street. Blackstone also has light and heavy manufacturing zones in the northern part of town (Blackstone 1992). There are several suburban and rural residential neighborhoods located west of LRA Parcel 9. Other areas adjacent to the study area parcels are sparsely populated.

3.2.4.2 Parcel 21/20

Parcel 21/20 is currently part of Fort Pickett and is predominantly comprised of areas for tactical training and maneuvers. The parcel is mostly forested with tank trails traversing the parcel in the north-south direction. Coniferous forest areas on Parcel 21/20 are identified as pine plantations that have been managed with silviculture practices. Recreational activities, such as hunting and fishing, are permitted on Parcel 21/20. The parcel and adjacent lands are not zoned as they are currently part of Fort Pickett.

The Trimble Road Landfill is located adjacent to the central part of Parcel 21/20 but is excluded from the proposed parcel boundaries. The landfill is the source of groundwater contamination that is being monitored by the VaARNG and VDEQ. The landfill is enclosed by fencing and is not suitable for development. Refer to **Section 3.2.11** for additional details.

3.2.4.3 Grid Parcel

The Grid Parcel is currently part of Fort Pickett and therefore not zoned. It borders the eastern boundary of LRA Parcel 9 and is located west of Parcel 21/20. The Grid Parcel is mostly forested with minor developments consisting of roadways, utilities (including gasoline pipeline), and an aggregate storage area. In the mid-1970s, a majority of the structures on the Grid Parcel were demolished. The remaining structures located along Military Road were demolished in 2012 (Schnabel Engineering 2012c). The Grid Parcel was named for nine existing roads that cross the parcel in an east-west direction and three that traverse the parcel in a north-south direction forming a grid pattern.

3.2.4.4 LRA Parcel 9

The LRA Parcel 9 is owned by Nottoway County and is part of Pickett Park, a 1,675-acre industrial park generally surrounding the Blackstone Army Airfield/Allen C. Perkinson Municipal Airport within the boundaries of Fort Pickett. LRA Parcel 9 is situated near the south side of the airfield and is zoned general industrial by Nottoway County (Nottoway County 2006). Land use on the LRA Parcel 9 is comprised of a mix of recreational, residential, commercial, and administrative and supply/storage. A small portion of land adjacent to the northwest corner of LRA Parcel 9 is zoned business (B-1).

The eastern portion of LRA Parcel 9 is developed with a street network and buildings. Currently, there are residential and commercial tenants leasing space on the LRA parcel. Approximately seven people reside in installation housing. Ten small, private businesses have leases to operate on the property, including Southside Electric Co-op.

The Blackstone Army Airfield/Allen C. Perkinson Municipal Airport runways and associated U.S. Department of Defense (DoD) safety clearance zones are shown in **Figure 3.2-5**. Runway 01-19, oriented north-south on the airfield, was closed in 2012, and is being used for other airfield operations. Military runway clear zones (CZ) and accident potential zones (APZ), which extend over LRA Parcel 9, are defined in the DoD Unified Facilities Criteria 3-260-01 (DoD 2008). Only agriculture and open space are considered compatible within the CZ. Certain recreational and business activities are compatible with APZ I; education facilities are not. For transportation uses, no above ground utilities are allowed in APZ I. A wider range of business uses are compatible with APZ II.

For manufacturing, the following factors are to be considered in APZ II: labor intensity, structural coverage, explosive characteristics, air pollution, electronic interference with aircraft, height of structures, and potential glare to pilots.

3.2.5 Socioeconomic Environment and Environmental Justice Populations

3.2.5.1 Socioeconomic Environment

Socioeconomics describes the basic attributes and resources associated with the human environment, particularly population, employment, income, and housing. The study area for socioeconomics is defined as the area in which the principal effects arising from implementation of the Proposed Action are likely to occur.

The study area for socioeconomics consists of eight counties located in southern Virginia. The study area is centered on Nottoway County, where the FASTC project would be located, and includes seven other adjacent or otherwise connected counties where employees may reside including Amelia, Brunswick, Chesterfield, Dinwiddie, Lunenburg, Mecklenburg, and Prince Edward. With the exception of portions of Chesterfield County, the bulk of the study area can be classified as rural; typically counties in the study area have low population density (large land area with a relatively small population).

Socioeconomic Characteristics of the Study Area

- Total population for the eight county study area is 459,223
- Population growth rate of study area is higher than the state average
- Population growth is expected through 2030 except in Nottoway County
- Chesterfield is the most populous of the counties
- Education and health care are the largest employers
- Unemployment rates are higher than Virginia overall, except in Amelia and Chesterfield Counties

During the twentieth century, the rural areas of the study area built their economies on agriculture and a strong manufacturing base. Fort Pickett became a major contributor to the economy of the study area in 1942 and today remains host to various training activities and an integral part of the community. However, overall activity and contribution to the local economy have declined since the mid-1990s. The

manufacturing sector has also declined in recent years, leading directly to lower employment and an economy without a primary driving force.

Population

In 2010, the total resident population in the eight county study area was 459,223. Since 1990, the population in the study area has grown faster than the population of the state of Virginia as a whole, having increased by 40% and 29.3%, respectively. Population in the study area is concentrated in Chesterfield County, which had 316,236 total residents in 2010 (69% of the total). From 1990 to 2010 Chesterfield County's population grew 51.1%, faster than any other county in the study area and Virginia overall. Compared to Chesterfield County, other counties in the study area have small populations. Mecklenburg County, with a 2010 population of 32,717, has a tenth of Chesterfield's population. Dinwiddie County (28,001) and Prince Edward County (23,368) were the only other counties in the study area with populations greater than 20,000; from 1990 to 2010, population in these counties grew quicker than Virginia overall but less quickly than the study area average. Nottoway County, where the town of Blackstone is located, had a 2010 population of 15,853 and population growth of 5.7% from 1990 to 2010; population growth was slower in Nottoway County than any other county in the study area and slower than Virginia overall. Population in Nottoway County increased by only 0.8% from 2000 to 2010, in part due to a decline in population of 1.5% in Blackstone. Blackstone had a 2010 population of 3,621 and population only grew 3.6% from 1990-2010, slower than Nottoway County overall and far slower than Virginia overall. Population totals and growth since 1990 for the study area, individual counties, and Blackstone are shown in **Table 3.2-10**.

Table 3.2-10. Population, 1990-2010

	1990	2000	2010	% Change 1990-2000	% Change 2000-2010	% Change 1990-2010
Amelia County	8,787	11,400	12,690	29.7%	11.3%	44.4%
Brunswick County	15,987	18,419	17,434	15.2%	-5.3%	9.1%
Chesterfield County	209,274	259,903	316,236	24.2%	21.7%	51.1%
Dinwiddie County	20,960	24,533	28,001	17.1%	14.1%	33.6%
Lunenburg County	11,419	13,146	12,914	15.5%	-1.8%	13.1%
Mecklenburg County	29,241	32,380	32,727	10.7%	1.1%	11.9%
Nottoway County	14,993	15,725	15,853	4.9%	0.8%	5.7%
Blackstone	3,497	3,675	3,621	5.0%	-1.5%	3.6%
Prince Edward County	17,320	19,720	23,368	13.9%	18.5%	34.9%
Study Area Totals	**327,981**	**395,226**	**459,223**	**20.5%**	**16.2%**	**40.0%**
Virginia	6,187,358	7,078,515	8,001,024	14.4%	13.0%	29.3%

Sources*: U.S. Census 1990, U.S. Census 2000, U.S. Census 2010a*

Table 3.2-11 provides population projections for the study area and Virginia overall for the years 2020 and 2030. By 2030, population in the study area is expected to increase 28.2% from the 2010 level, more than the expected 22.8% increase expected for Virginia overall. Population is expected to remain concentrated in Chesterfield County, which would, by 2030, constitute 73% of the population total for the study area. Population in Chesterfield County is expected to continue to grow at a faster rate than other counties in the study area and Virginia overall (36.1% from 2010 to 2030). Amelia and Dinwiddie Counties are also expected to grow at rates in excess of the study area (34.8% and 34.1%, respectively,

from 2010 to 2030). Nottoway County is the only county in the study area where population is expected to decline by 2030; projections show a 5.2% decline in Nottoway County from 2010 to 2030.

Table 3.2-11. Population, 2010 and Population Projections, 2020-2030

	2010	2020	2030	% Change 2010-2020	% Change 2020-2030	% Change 2010-2030
Amelia County	12,690	15,123	17,104	19.2%	13.1%	34.8%
Brunswick County	17,434	18,258	18,258	4.73%	0.0%	4.7%
Chesterfield County	316,236	372,532	430,266	17.8%	15.5%	36.1%
Dinwiddie County	28,001	33,075	37,563	18.1%	13.6%	34.1%
Lunenburg County	12,914	13,290	13,478	2.9%	1.4%	4.4%
Mecklenburg County	32,727	32,511	32,755	-0.7%	0.8%	0.1%
Nottoway County	15,853	15,041	15,032	-5.1%	-0.1%	-5.2%
Blackstone[1]	3,621	N/A	N/A	N/A	N/A	N/A
Prince Edward County	23,368	22,719	24,285	-2.8%	6.9%	3.9%
Totals	**459,223**	**522,549**	**588,741**	**13.8%**	**13%**	**28.2%**
Virginia	8,001,024	8,917,396	9,825,019	11.5%	10.2%	22.8%

Sources: *U.S. Census 2005; Virginia Employment Commission 2011*
Notes: *[1] Population projections not available for Blackstone*

Race and Ethnicity

As shown in **Table 3.2-12**, the study area is characterized primarily by two racial groups: White and Black or African American. Nearly 92% of Virginia is either White or Black or African American, and each county in the study area has a higher concentration of these two races than Virginia overall. Amelia County has the highest percentage of Whites (74.7%) in the study area and is the only county in the study area with a higher percentage of Whites than Virginia overall. Every county in the study area has a higher percentage of Black or African Americans than Virginia overall. Brunswick County has the highest percentage of Black or African Americans in the study area (58%) and is the only county in the study area where Black or African Americans make up a greater proportion of the population than Whites. Whites and Black or African Americans comprise 97.5% of Nottoway County (57.6% White and 39.9% Black or African American). Blackstone is 96.7% White or Black or African American (47.4% White and 49.3% Black or African American).

Table 3.2-12. Race and Hispanic Origin, 2010

	White	Black or African American	Hispanic or Latino	Asian	American Indian or Alaska Native	Native Hawaiian or Other Pacific Islander
Amelia County	74.7%	23.8%	1.3%	0.4%	1.1%	0.1%
Brunswick County	41.1%	58.0%	0.8%	0.4%	0.6%	0.1%
Chesterfield County	70.4%	23.3%	3.6%	4.0%	1.0%	0.2%
Dinwiddie County	65.2%	33.7%	1.0%	0.7%	0.8%	0.1%
Lunenburg County	62.2%	35.8%	2.3%	0.4%	0.9%	0.1%
Mecklenburg County	61.1%	37.8%	0.9%	0.8%	0.7%	0.1%
Nottoway County	57.6%	39.9%	2.3%	0.5%	0.9%	0.1%
Blackstone	47.4%	49.3%	3.3%	0.6%	0.9%	0.0%
Prince Edward County	64.7%	34.2%	0.6%	1.1%	0.8%	0.1%
Virginia	71.0%	20.7%	3.4%	6.5%	1.0%	0.2%

Source: *U.S. Census 2010a*

Table 3.2-13 shows household characteristics for the study area and for Virginia in 2010. Most counties in the study area had a smaller average household size than Virginia overall; only Chesterfield and Dinwiddie Counties had a larger average household size. Most households in the study area are family households, at rates similar to Virginia overall.

Median household income for counties in the study area was generally lower than Virginia overall, which had a median household income of $61,406. Of counties in the study area, only Chesterfield County ($71,321) had a higher median household income than Virginia overall. As measured by median household income and income per household member, respectively, Brunswick and Prince Edward are the counties in the study area with the lowest household incomes. In addition, Brunswick County had the highest percentage of households with incomes below the poverty line, at 21%. Nottoway County median household income ($37,344) and income per household member ($14,938) were lower than Virginia overall ($61,406 and $23,534), and the percentage of households with incomes below the poverty line was higher than Virginia overall (19% compared to 10%). The town of Blackstone had lower median household income and income per household member as compared with the counties in the study area; median household income was $32,257 and income per household member was $13,007.

Table 3.2-13. Household Characteristics

	Population in Household[1]	Total House-holds	Avg. House-hold Size	% Family Household	Median Household Income	Income Per House-hold Member	House-holds Below Poverty Level	% House-holds Below Poverty Level
Amelia County	12,562	4,901	2.56	70.0%	$50,135	$19,560	557	11%
Brunswick County	15,250	6,086	2.51	65.9%	$35,184	$14,041	1,277	21%
Chesterfield County	311,585	112,404	2.77	75.3%	$71,321	$25,729	6,121	5%
Dinwiddie County	27,082	9,800	2.76	72.7%	$51,459	$18,621	952	10%
Lunenburg County	11,711	4,515	2.59	66.5%	$37,424	$14,428	685	15%
Mecklenburg County	30,987	12,594	2.46	64.4%	$36,431	$14,807	2,147	17%
Nottoway County	14,017	5,607	2.50	70.6%	$37,344	$14,938	1,042	19%
Blackstone	3,462	1,396	2.48	68.2%	$32,257	$13,007	236	17%
Prince Edward County	19,050	7,314	2.60	62.2%	$36,191	$13,895	1,139	16%
Virginia	7,761,190	2,974,481	2.61	67.2%	$61,406	$23,534	299,162	10%

Source: *U.S. Census 2010b*

Notes: [1] *By definition, population in households consists of the resident population excluding people living in group quarters (i.e., 9 or more people living together who are unrelated to the householder)*

Employment and Income

Table 3.2-14 provides labor force, employment, and unemployment statistics for the study area and Virginia overall for 2001 and 2010. Most counties in the study area saw an increase in labor force from

2001 to 2010; only Mecklenburg County had a decline in labor force. Prince Edward County had the largest increase in labor force (25% increase); only Chesterfield County (17% increase) joined Prince Edward in exceeding the Virginia overall increase of 14%. Likewise, only Prince Edward and Chesterfield Counties exceeded the 10% growth in number of employed individuals seen in Virginia overall (at 17% and 12% growth, respectively).

Brunswick, Lunenburg, and Mecklenburg Counties each had fewer employed individuals in 2010 than in 2001. Every county in the study area had more unemployed individuals in 2010 than in 2001 with the largest percentage increases found in Amelia (247% increase), Chesterfield (214% increase), and Prince Edward Counties (192% increase). From 2001 to 2010, the unemployment rate increased by more in every county of the study area than it did in Virginia overall (on a percentage point basis). As of 2010, the highest unemployment rates in the study area were found in Brunswick (11.7%), Mecklenburg (11.5%), Lunenburg (10%), and Prince Edward (9.8%) counties. In Nottoway County, from 2001 to 2010, the number of unemployed individuals more than doubled from 248 to 553 and as of 2010, the unemployment rate was 8.3%. Since 2010, unemployment rates have improved by approximately one percentage point in all counties except Prince Edward County where the rate has increased (Virginia Employment Commission 2012).

Table 3.2-14. Labor Force, Employment, and Unemployment, 2001 and 2010

		Labor Force	Employed	Unemployed	Unemployment Rate[1]
Amelia County	2001	5,897	5,747	150	2.5%
	2010	6,716	6,196	520	7.7%
	% Change	**14%**	**8%**	**247%**	**5.2**
Brunswick County	2001	6,830	6,461	369	5.4%
	2010	7,047	6,222	825	11.7%
	% Change	**3%**	**-4%**	**124%**	**6.3**
Chesterfield County	2001	144,404	140,677	3,727	2.6%
	2010	169,486	157,790	11,696	6.9%
	% Change	**17%**	**12%**	**214%**	**4.3**
Dinwiddie County	2001	11,933	11,573	360	3.0%
	2010	13,145	12,131	1,014	7.7%
	% Change	**10%**	**5%**	**182%**	**4.7**
Lunenburg County	2001	5,377	5,135	242	4.5%
	2010	5,564	5,007	557	10.0%
	% Change	**3%**	**-2%**	**130%**	**5.5**
Mecklenburg County	2001	14,113	13,292	821	5.8%
	2010	14,022	12,410	1,612	11.5%
	% Change	**-1%**	**-7%**	**96%**	**5.7**
Nottoway County	2001	6,240	5,992	248	4.0%
	2010	6,629	6,076	553	8.3%
	% Change	**6%**	**1%**	**123%**	**4.3**

Table 3.2-14. Labor Force, Employment, and Unemployment, 2001 and 2010

		Labor Force	Employed	Unemployed	Unemployment Rate[1]
Prince Edward County	2001	8,198	7,855	343	4.2%
	2010	10,223	9,221	1,002	9.8%
	% Change	**25%**	**17%**	**192%**	**5.6**
Virginia	2001	3,655,371	3,537,719	117,652	3.2%
	2010	4,185,321	3,896,167	289,154	6.9%
	% Change	**14%**	**10%**	**146%**	**3.7**

Source: *U.S. Bureau of Labor Statistics (BLS) 2011a*
Notes: *[1] Changes in the unemployment rate, from 2001 to 2010, are expressed in terms of percentage points.*

Table 3.2-15 shows a percentage breakdown of employment by industry for the study area and Virginia overall, for 2010. The education and health care industry was the leading employer in every county in the study area and Virginia overall. Retail trade, manufacturing, and construction are the leading private sector employers, and public administration is also a top employer among counties in the study area. The construction industry is a relatively larger employer in the study area than Virginia overall, as all but one county (Prince Edward) in the study area has a higher percentage of employment in construction than Virginia overall. The manufacturing industry is also, generally, a larger employer in the study area than Virginia overall, as five of the eight counties in the study area have a higher percentage of employment in manufacturing than Virginia overall. Nottoway County's largest industries in terms of employment in 2010 were education and health care, retail trade, construction, public administration, and manufacturing.

Table 3.2-15. Employment by Industry, 2010

	Amelia County	Brunswick County	Chesterfield County	Dinwiddie County	Lunenburg County	Mecklenburg County	Nottoway County	Prince Edward County	Virginia
Agriculture, forestry, fishing/hunting, mining	7%	3%	0%	2%	2%	5%	3%	2%	1%
Construction	15%	10%	8%	10%	9%	9%	14%	6%	8%
Manufacturing	7%	13%	10%	11%	14%	13%	8%	5%	8%
Wholesale trade	2%	3%	3%	4%	4%	3%	4%	1%	2%
Retail trade	13%	12%	12%	15%	16%	11%	15%	11%	11%
Transportation and utilities	7%	5%	5%	6%	9%	7%	5%	3%	4%
Information	2%	2%	2%	1%	1%	2%	1%	2%	3%
FIRE[1]	5%	4%	10%	5%	3%	4%	3%	4%	7%
Professional, scientific, management	9%	5%	11%	8%	2%	6%	4%	4%	14%
Education and health care	17%	24%	20%	20%	19%	21%	20%	38%	20%
Entertainment, accommodation, food services	4%	6%	7%	5%	7%	7%	6%	10%	8%
Other services	6%	4%	5%	5%	5%	4%	6%	4%	5%
Public administration	7%	11%	8%	10%	12%	8%	12%	8%	9%

Source: *U.S. Census 2010b*
Notes: *[1] Finance, Insurance, and Real Estate*

Table 3.2-16 identifies the top five largest employers for each county in the study area as of the first quarter (January through March) of 2011. In six of the eight counties, school boards are the top employer, and the top employer in every county is, in some way, related to education. Other top employers in the study area include health care establishments (such as hospitals and health insurance companies), correctional facilities, county governments, and the DoD.

Table 3.2-16. Top Employers, 2011

	Largest Employer	Second Largest Employer	Third Largest Employer	Fourth Largest Employer	Fifth Largest Employer
Amelia County	Amelia County School Board	Amelia Life Care LLC	County of Amelia	Star Children's Dress Company	Old River Cabinets Inc.
Brunswick County	Brunswick County School Board	Wackenhut Corrections	Southside Virginia Community College	Saint Paul's College	County of Brunswick
Chesterfield County	Chesterfield County School Board	County of Chesterfield	U.S. Department of Defense	E.I. DuPont De Nemours Company	Wal Mart
Dinwiddie County	Southside Virginia Training Center	Wal Mart	Central State Hospital	Dinwiddie County School Board	Chaparral
Lunenburg County	Lunenburg County Public School	Lunenburg Correctional Center	Virginia Marble Manufacturing	Southside Training Employment Program	S & M Brands
Mecklenburg County	Mecklenburg County School Board	Community Memorial Health	Jones Distribution Corp	Peebles	Mecklenburg Correctional Center
Nottoway County	Nottoway County Public School Board	Piedmont Geriatric Hospital	Nottoway Correctional Center	U.S. Department of Defense	VDMA
Prince Edward County	Longwood University	Prince Edward County Public Schools	Centra Health	Wal Mart	Hampden-Sydney College

Source: *Virginia Employment Commission 2011*

Table 3.2-17 lists the average annual pay for employees in the study area and Virginia overall for 2001 and 2010. Average annual pay increased 35.2% from 2001 to 2010 in Virginia overall, more than in any county in the study area except for Mecklenburg, which increased 36%. Average annual pay in Nottoway County increased from $23,347 in 2001 to $30,688 in 2010 (a 31.4% increase).

The highest average annual pay in the study area was in Chesterfield County ($42,566 in 2010) and the lowest was in Brunswick County ($29,113 in 2010). Every county in the study area had lower average annual pay than Virginia overall in both 2001 and 2010.

Table 3.2-17. Average Annual Pay, 2001-2010

	2001	2010	% Change
Amelia County	$23,922	$31,568	32.0%
Brunswick County	$23,446	$29,113	24.2%
Chesterfield County	$32,957	$42,566	29.2%
Dinwiddie County	$28,651	$37,773	31.8%
Lunenburg County	$25,370	$30,847	21.6%
Mecklenburg County	$21,628	$29,409	36.0%
Nottoway County	$23,347	$30,688	31.4%
Prince Edward County	$22,708	$30,506	34.3%
Virginia	$36,733	$49,651	35.2%

Source: *BLS 2011b*
Notes: *Average annual pay for all employees covered by unemployment insurance*

Housing

Table 3.2-18 provides information on the number of total housing units, occupied housing units, and vacant housing units and the percentage of vacant units for counties in the study area, as of 2010. Most of the housing units in the study area are located in Chesterfield County. Of the 122,555 housing units in Chesterfield County, 115,680 are occupied and 6,875 are vacant. The 6,875 vacant units in Chesterfield County represent 37.4% of the total number of vacant housing units within the study area. Mecklenburg County, which has 5,096 vacant units, has 27.7% of the vacant housing units located within the study area. As of 2010 there were 6,650 total housing units in Nottoway County, 944 of which were vacant (5.1%). Blackstone had 1,698 total housing units, 248 of which were vacant (comprising 1.3% of vacant units in the study area and 26% of the vacant units in Nottoway County).

Table 3.2-18. Number of Total, Occupied, and Vacant Housing Units, 2010

	Total	Occupied	Vacant	% of Study Area Vacant
Amelia County	5,359	4,821	538	2.9%
Brunswick County	8,166	6,366	1,800	9.8%
Chesterfield County	122,555	115,680	6,875	37.4%
Dinwiddie County	11,422	10,504	918	5.0%
Lunenburg County	5,935	4,957	978	5.3%
Mecklenburg County	18,591	13,495	5,096	27.7%
Nottoway County	6,650	5,706	944	5.1%
Blackstone	1,698	1,450	248	1.3%
Prince Edward County	9,149	7,916	1,233	6.7%
Study Area Totals	187,827	169,445	18,382	

Source: *U.S. Census 2010a*

Not all vacant units are available to be lived in; some vacant units are kept as vacation homes, seasonal rentals, or have already been rented or sold but have not yet been occupied. The U.S. Census Bureau

defines available housing as housing units either for rent or for sale. **Table 3.2-19** identifies the number of available housing units within each county of the study area, in 2010. Additionally, **Table 3.2-19** also identifies the percentage of total available study area housing that is available in each county. Most of the available housing in the study area was in Chesterfield County (68.4%). There were 2,934 housing units for rent in Chesterfield County and 1,714 for sale. Most of Mecklenburg County's vacant housing was not available to be lived in; only 614 of Mecklenburg's 5,096 vacant units were considered available in 2010. There were 308 available housing units in Nottoway County in 2010, 4.5% of the study area total. Blackstone had 123 available units in 2010, 95 for rent and 28 for sale.

Table 3.2-19. Vacancy Status and Available Housing Units, 2010

	Total Vacant	For Rent	For Sale	Available Housing	% of Study Area Available Housing
Amelia County	538	48	78	126	1.9%
Brunswick County	1,800	122	86	208	3.1%
Chesterfield County	6,875	2,934	1,714	4,648	68.4%
Dinwiddie County	918	219	113	332	4.9%
Lunenburg County	978	117	95	212	3.1%
Mecklenburg County	5,096	326	315	641	9.4%
Nottoway County	944	225	83	308	4.5%
Blackstone	248	95	28	123	1.8%
Prince Edward County	1,233	206	110	316	4.7%
Study Area Totals	18,382	4,197	2,594	6,791	

Source: *U.S. Census 2010a*

Table 3.2-20 presents selected characteristics of housing units in the study area and Virginia overall as of 2010. The largest housing units in the study area were in Chesterfield County where the median number of rooms per unit (6.7) and average number of bedrooms per unit (3.24) exceeded every other county in the study area and Virginia overall. Amelia County had the second most rooms per unit, 5.9, which was the same number as Virginia overall. Nottoway County had slightly fewer rooms per unit than Virginia overall (5.6 compared to 5.9) but had the same average number of bedrooms per unit (2.88). Blackstone had fewer rooms per housing unit but a higher average number of bedrooms than Virginia overall.

Every county in the study area had a median housing value lower than Virginia overall, which was $255,100. Chesterfield County had the highest median value in the study area, at $235,600. Counties in the study area with the lowest median housing unit value were Brunswick County ($97,500), Lunenburg County ($101,500), and Mecklenburg County ($115,000). Median housing unit value was $126,100 in Nottoway County and $117,300 in Blackstone. Median monthly owner costs were higher in Virginia overall ($1,728) than in any county in the study area, but, in most counties, the cost of owning a home was over $1,000 per month. Median rents were higher in Chesterfield County than in any other county in the study area and higher than Virginia overall. Median rent was $700 per month in Nottoway County and $818 per month in housing located on LRA Parcel 9.

Table 3.2-20. Housing Characteristics, 2010

	Median Rooms	Average Bedrooms	Median Value	Median Monthly Owner Costs[1]	Median Gross Rent
Amelia County	5.9	2.99	$189,800	$1,194	$672
Brunswick County	5.6	2.90	$97,500	$970	$608
Chesterfield County	6.7	3.24	$235,600	$1,608	$988
Dinwiddie County	5.7	2.89	$163,800	$1,312	$817
Lunenburg County	5.5	2.82	$101,500	$980	$619
Mecklenburg County	5.4	2.78	$115,000	$943	$593
Nottoway County	5.6	2.88	$126,100	$1,104	$700
Blackstone	5.4	2.94	$117,300	$1,130	$818
Prince Edward County	5.4	2.84	$155,400	$1,169	$713
Virginia	5.9	2.88	$255,100	$1,728	$970

Source: *U.S. Census 2010b*
Notes: [1] *Median monthly owner costs for housing units that have a mortgage.*

Housing and Businesses of the Study Area Parcels

GSA has initiated relocation planning and outreach to identify the existing occupied buildings of the study parcels and their tenants/residents. The outreach conducted in April 2012 documented 13 commercial buildings and six residential buildings on LRA Parcel 9 (GSA 2012). Eleven of the thirteen commercial buildings were occupied at that time and five of the six residential buildings were occupied.

The occupied residential buildings consist of one three-bedroom home and four single-bedroom homes on Garnet Avenue and East Parade Avenue. Three of these homes have single occupants; the others are occupied by two-person families.

The occupied commercial buildings are predominantly warehouses with small office spaces. All of the buildings are owned by LRA and leased to occupants. The commercial buildings and their occupants are summarized in **Table 3.2-21.**

Table 3.2-21. Occupied Commercial Buildings on LRA Parcel 9

Lessee	Address	Area	Use
Southside Electric Cooperative	507 Garnett Avenue	2,500 sf[1]	Storage
Osen-Hunter Group	583 Garnett Avenue	3,906 sf	Storage and training
Robert Thacker	667 Garnett Avenue	2,750 sf	Storage
R&L Mohr Inc	697 Garnett Avenue	2,750 sf	Storage
Structural Concepts & Components	1000 Garnett Avenue	9,225 sf	Storage
Global Integrated Services	120 Armistead Avenue	3,906 sf	Storage
Robert Thacker	326 Armistead Avenue	9,548 sf	Storage
DRS C3 & Aviation Company	1112 Armistead Avenue	8,290 sf	Storage
UAV Pros	873 West Parade Avenue	2,881 sf	Research and Development

Notes: [1]*square feet (sf)*

Schools

Nottoway County has seven schools providing education to its children that are located in Blackstone, Crewe, Burkeville, and Jetersville. There are two schools located in proximity to the study area parcels. Blackstone Primary is a public elementary school located off West Entrance Road. Kenston Forest School, also located off West Entrance Road, is a private day school with students from Pre-K3 to Grade 12. Blackstone Primary and Kenston Forest School are located approximately two miles from LRA Parcel 9, three miles from the Grid Parcel, and four miles from Parcel 21/20.

Amelia County has four schools, one each elementary, middle, high, and technical school. Brunswick County has three elementary schools, a middle school, and a high school. Dinwiddie County has five elementary schools, a middle school, and a high school. Lunenburg County has two elementary schools, a middle school, and a high school. Prince Edward County has one each elementary, middle and high school, as well as a career technical school.

Chesterfield County has the largest school district in the study area with 62 schools, of which 38 are elementary, 12 are middle schools, and 12 are high schools.

Fiscal Setting

Table 3.2-22 displays government revenues for each county in the study area, by source, for fiscal year (FY) 2008, the most recent data published (Virginia Department of Housing and Community Development [VDHCD] 2009a). For each county in the study area, property tax revenue was the largest contributor to total county revenue. Real property tax (tax on land and improvements on land) revenue made up the largest portion of overall property tax revenue. In Chesterfield and Dinwiddie Counties, all other tax revenue, including local sales taxes and tax on business licenses, made up the second largest portion of total revenues. In all other counties in the study area non-tax revenue, such as permit fee revenue and revenues from investments, was the second leading source of revenue generation. Nottoway County had FY 2008 total revenue of $12.9 million; nearly half of that revenue ($5.97 million) was from property taxes and a large portion ($3.56 million) came from non-tax charges for services.

Table 3.2-22. County Government Revenues by Source, FY 2008 ($1,000s)

	Amelia County	Brunswick County	Chesterfield County	Dinwiddie County	Lunenburg County	Mecklenburg County	Nottoway County	Prince Edward County
Total Revenue	**$13,016**	**$15,903**	**$543,708**	**$32,266**	**$10,707**	**$32,332**	**$12,935**	**$19,803**
Property Tax Revenue	**$6,465**	**$8,066**	**$367,785**	**$21,022**	**$5,037**	**$18,619**	**$5,977**	**$9,870**
Real Property Tax	$4,237	$4,775	$296,256	$13,590	$2,815	$10,407	$3,859	$5,858
General Personal Property Tax	$1,882	$2,324	$53,033	$5,592	$1,844	$6,103	$1,383	$2,982
Other Property Tax	$346	$967	$18,497	$1,840	$379	$2,109	$736	$1,031
All Other Tax Revenue	**$1,928**	**$1,982**	**$97,906**	**$6,373**	**$1,104**	**$5,656**	**$1,979**	**$3,995**
Local Sales and Use	$707	$716	$40,737	$1,374	$366	$3,235	$964	$2,891

Table 3.2-22. County Government Revenues by Source, FY 2008 ($1,000s)

	Amelia County	Brunswick County	Chesterfield County	Dinwiddie County	Lunenburg County	Mecklenburg County	Nottoway County	Prince Edward County
Consumers' Utility	$210	$299	$7,449	$564	$180	$568	$157	$281
Business License	$210	$0	$17,499	$733	$0	$0	$168	$0
Communication Sales and Use	$291	$480	$12,091	$1,058	$237	$767	$399	$357
Other Non-Property	$510	$486	$20,130	$2,643	$322	$1,086	$291	$465
Non-Tax Revenue	**$4,623**	**$5,855**	**$78,016**	**$4,871**	**$4,565**	**$8,057**	**$4,978**	**$5,938**
Permits, Fees, and Licenses	$230	$86	$6,412	$432	$37	$304	$60	$101
Charges for Services	$3,282	$4,273	$49,182	$2,452	$3,877	$4,458	$3,558	$4,777
Investments	$365	$465	$10,505	$1,015	$253	$818	$467	$351
Rental of Property	$38	$24	$2,210	$75	$0	$56	$513	$265
Miscellaneous Non-Tax	$708	$1,007	$9,708	$896	$399	$2,421	$381	$444

Source: *VDHCD 2009a*

Table 3.2-23 shows operating expenditures for counties in the study area during FY 2008. Expenditures on education made up the largest portion of expenditures for every county in the study area. Expenditures on public safety and health and welfare were generally the second largest portion of county operating expenditures, after education. Chesterfield County had, by far, the largest operating expenditures in the study area ($857 million), followed by Mecklenburg County ($73.2 million), Dinwiddie County ($64.5 million), and Prince Edward County ($45 million). Nottoway County had expenditures of $34.8 million in FY 2008. Nottoway County spent more on education ($22.4 million) than on any other category; health and welfare ($6.7 million) was the second largest expenditure and public safety was the third largest ($4.49 million).

Table 3.2-23. County Government Operating Expenditures, FY 2008 ($1,000s)

	Amelia County	Brunswick County	Chesterfield County	Dinwiddie County	Lunenburg County	Mecklenburg County	Nottoway County	Prince Edward County
Total Expenditures	$25,400	$38,977	$857,222	$64,572	$28,765	$73,232	$34,831	$45,085
General Government Administration	$1,346	$1,258	$32,281	$2,148	$1,149	$2,801	$1,044	$1,606
Judicial Administration	$663	$1,078	$14,294	$1,729	$559	$2,924	$634	$1,488
Public Safety	$4,002	$4,660	$149,546	$8,469	$3,409	$8,282	$3,819	$4,492
Public Works	$838	$1,342	$20,196	$2,930	$1,037	$2,169	$1,573	$2,033
Health and Welfare	$514	$5,845	$69,465	$5,011	$4,312	$10,385	$4,077	$6,704
Education	$17,249	$23,957	$540,171	$42,642	$17,075	$43,541	$22,412	$27,582
Parks, Recreation, and Cultural Services	$458	$438	$17,227	$858	$209	$593	$179	$342

Table 3.2-23. County Government Operating Expenditures, FY 2008 ($1,000s)

	Amelia County	Brunswick County	Chesterfield County	Dinwiddie County	Lunenburg County	Mecklenburg County	Nottoway County	Prince Edward County
Community Development	$329	$398	$14,042	$785	$1,015	$2,536	$1,092	$839

Source: *VDHCD 2009b*

Table 3.2-24 displays federal aid in support of county operating expenditures for counties in the study area during FY 2008. The majority of federal aid to each county in the study area went to support education. Federal aid in support of county expenditures on health and welfare was the second largest, and the only other category of expenditure for which all counties in the study area received federal support. Nottoway County received federal aid in support of education ($3.375 million), health and welfare ($1 million), and public safety ($102,000).

Table 3.2-24. Federal Aid in Support of County Operating Expenditures, FY 2008 ($1,000s)

	Amelia County	Brunswick County	Chesterfield County	Dinwiddie County	Lunenburg County	Mecklenburg County	Nottoway County	Prince Edward County
Total Expenditures	$2,107	$4,529	$41,285	$4,155	$2,915	$6,141	$4,491	$4,128
General Government Administration	$0	$0	$200	$0	$0	$0	$0	$0
Judicial Administration	$0	$2	$246	$0	$0	$0	$0	$0
Public Safety	$14	$15	$3,044	$26	$7	$162	$102	$47
Public Works	$0	$0	$7	$0	$0	$0	$0	$0
Health and Welfare	$615	$1,334	$11,455	$1,444	$757	$1,694	$1,014	$1,339
Education	$1,478	$3,178	$25,151	$2,684	$2,139	$4,286	$3,375	$2,742
Parks, Recreation, and Cultural Services	$0	$0	$0	$0	$0	$0	$0	$0
Community Development	$0	$0	$1,181	$0	$12	$0	$0	$0

Source: *VDHCD 2009c*

3.2.5.2 Environmental Justice Populations

EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (Environmental Justice), was issued in 1994 to focus the attention of federal agencies on human health and environmental conditions in minority and low-income populations. This EO was also established to ensure that, if there were a disproportionately high and adverse human health or environmental effects of federal actions on these populations, those effects would be identified and addressed. Environmental justice is achieved if minority and low-income communities are not subjected to disproportionately high or adverse environmental effects. The environmental justice analysis addresses the characteristics of race, ethnicity, and low income status for populations residing in areas potentially affected by implementation of the Proposed Action.

The study area for environmental justice consists of census block groups within Nottoway, Brunswick, Dinwiddie, and Lunenburg Counties that are near or adjacent to the study area parcels. The study area

for environmental justice encompasses the area where potential direct, indirect, and cumulative impacts have been identified.

As defined for the purposes of identifying relevant populations, minority population areas are census block groups with a racial minority population – defined as Black or African American, Hispanic or Latino, Asian, American Indian, Native Alaskan, or Native Hawaiian or Other Pacific Islander – of 50% or higher or there is a meaningfully higher percentage of the population consisting of racial minorities than a comparison population (GSA 1999). For the purposes of this analysis, the comparison population is the county in which the census block group is located and a census block group is considered to be a minority population if it has a higher minority percentage than the county.

Low income populations are defined as census block groups where a higher percentage of the population lives in households with incomes below the poverty line, as defined by U.S. Census 2012, than the comparison population. For the purposes of this analysis, if a census block group has a higher percentage of its population living below the poverty line than the county in which the census block group is located, that census block group is identified as a low income population area.

Minority Populations of the Study Area

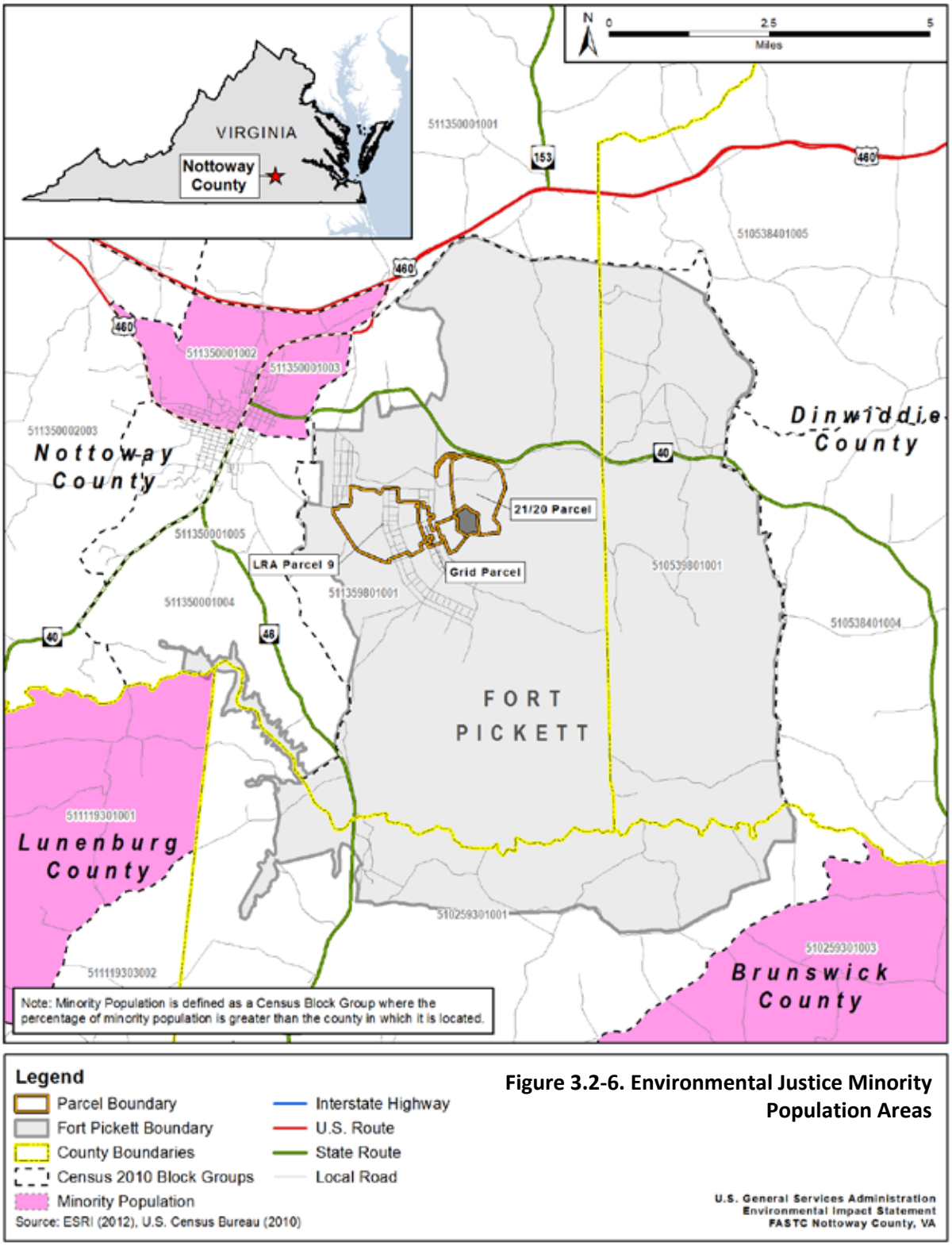
Table 3.2-25 provides information on minority population areas as compared with the county. Nottoway, Brunswick, Dinwiddie, and Lunenburg Counties all have overall minority populations higher than the state average of 29%. If a particular census block group has a minority percentage that is higher than the county, the census block group is considered an environmental justice minority population of concern. Census block groups of concern for environmental justice are shown in **bold text** in **Table 3.2-25**.

Table 3.2-25. Minority Population Status for Census Block Groups in the Environmental Justice Study Area

Block Group Number	Block Group Name	Minority % of Population
	Brunswick County	
510259301001	Block Group 1, Census Tract 9301	44.5%
510259301003	**Block Group 3, Census Tract 9301**	**65.9%**
	County Average	59.8%
	Dinwiddie County	
510538401004	Block Group 4, Census Tract 8401	19.8%
510538401005	Block Group 5, Census Tract 8401	28.1%
510539801001	Block Group 1, Census Tract 9801	No Population
	County Average	36.1%
	Lunenburg County	
511119301001	**Block Group 1, Census Tract 9301**	**46.7%**
511119303002	Block Group 2, Census Tract 9303	36.6%
	County Average	39.3%
	Nottoway County	
511350001001	Block Group 1, Census Tract 1	32.9%
511350001002	**Block Group 2, Census Tract 1**	**68.2%**
511350001003	**Block Group 3, Census Tract 1**	**69.9%**
511350001004	Block Group 4, Census Tract 1	36.8%
511350001005	Block Group 5, Census Tract 1	33.2%
511350002003	Block Group 3, Census Tract 2	34.8%
511359801001	Block Group 1, Census Tract 9801	29.4%
	County Average	43.4%
Virginia	State Average	29%

Source: *U.S. Census 2010b*
Note: ***Bold text*** *indicates environmental justice minority population*

Figure 3.2-6 shows the environmental justice minority population census block groups in the study area. The nearest minority population is in the northern portion of Blackstone, Census Block Group 511350001002 and Census Block Group 511350001003. These two block groups are divided by U.S. Route 460, with Census Block Group 2 to the northwest and Census Block Group 3 to the southwest of the highway. Census Block Group 511350001003 is nearest to the proposed project site; at their closest points, the project site would be separated from this environmental justice minority area by approximately 1 mile from LRA Parcel 9 and 2.3 miles from Parcel 21/20. A second minority population is Census Block Group 511119301001 in Lunenburg County, 3 miles from LRA Parcel 9. A third minority population is Census Block Group 510259301003, 7.5 miles to the south of Parcel 21/20 in Brunswick County.



Legend

- Parcel Boundary
- Fort Pickett Boundary
- County Boundaries
- Census 2010 Block Groups
- Minority Population
- Interstate Highway
- U.S. Route
- State Route
- Local Road

Source: ESRI (2012), U.S. Census Bureau (2010)

Figure 3.2-6. Environmental Justice Minority Population Areas

U.S. General Services Administration
Environmental Impact Statement
FASTC Nottoway County, VA

Low Income in the Study Area

Table 3.2-26 provides information on the percentage of study area residents that live below the poverty line by census block group as of 2010. Nottoway, Brunswick, Dinwiddie, and Lunenburg Counties all have overall poverty percentages higher than the state average of 10.3%. A census block group where the percentage of people that live below the poverty level is greater than percentage in the county overall is considered to have an environmental justice low income population. Environmental justice low income populations are shown in **bold text** in **Table 3.2-26**.

Table 3.2-26. Low Income Population Status for Census Block Groups in the Environmental Justice Study Area

Block Group Number	Block Group Name	Low Income % of Population
	Brunswick County	
510259301001	**Block Group 1, Census Tract 9301**	**30.0%**
510259301003	Block Group 3, Census Tract 9301	15.0%
	County Average	21.0%
	Dinwiddie County	
510538401004	Block Group 4, Census Tract 8401	0.8%
510538401005	Block Group 5, Census Tract 8401	9.0%
510539801001	Block Group 1, Census Tract 9801	No Population
	County Average	11.8%
	Lunenburg County	
511119301001	Block Group 1, Census Tract 9301	11.6%
511119303002	**Block Group 2, Census Tract 9303**	**18.0%**
	County Average	16.3%
	Nottoway County	
511350001001	Block Group 1, Census Tract 1	12.5%
511350001002	**Block Group 2, Census Tract 1**	**38.5%**
511350001003	Block Group 3, Census Tract 1	8.3%
511350001004	Block Group 4, Census Tract 1	12.5%
511350001005	Block Group 5, Census Tract 1	10.7%
511350002003	Block Group 3, Census Tract 2	6.8%
511359801001	Block Group 1, Census Tract 9801	No population
	County Average	17.3%
Virginia	State Average	10.3%

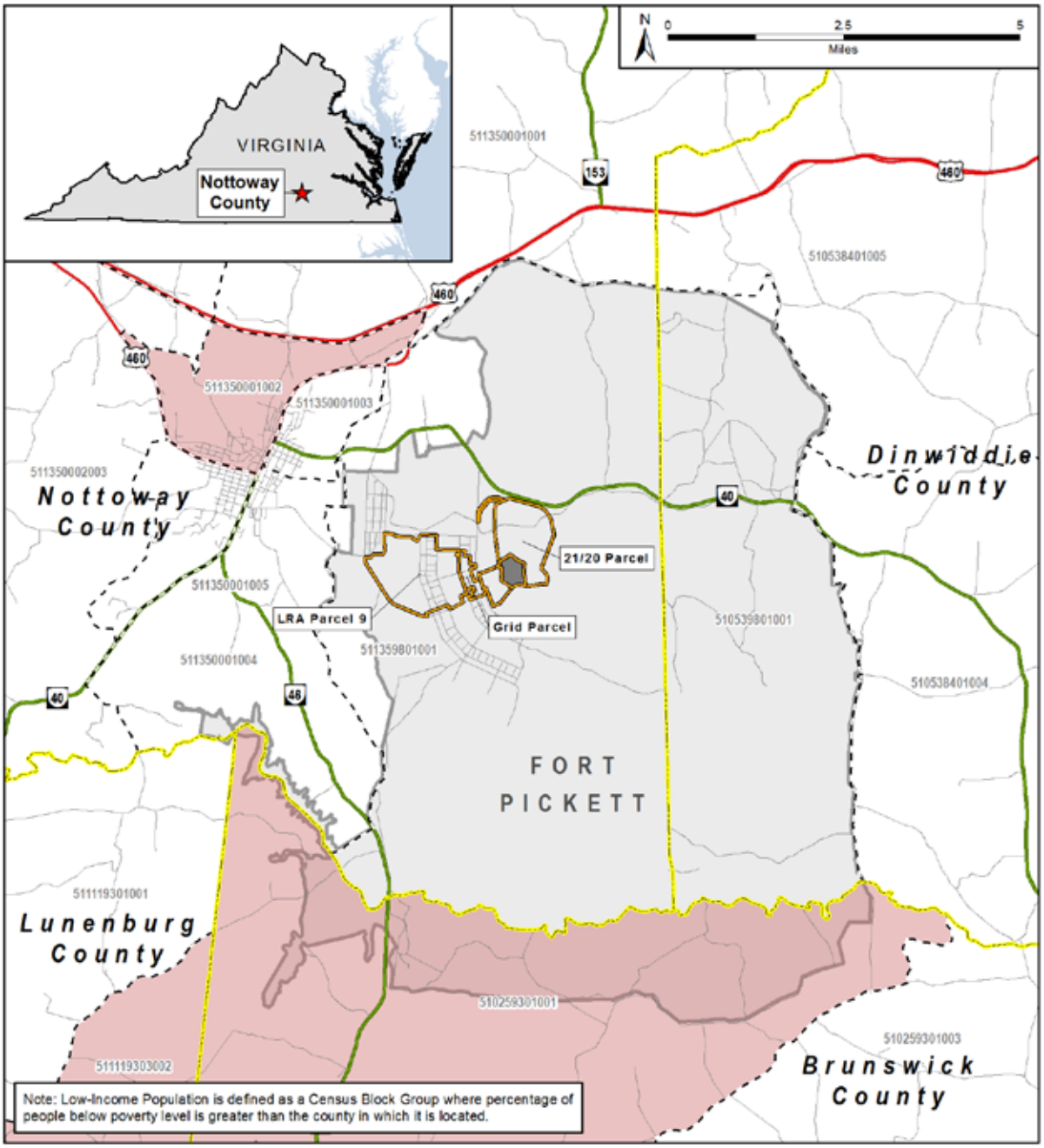
Source: *U.S. Census 2010b*
Note: ***Bold text*** *indicates environmental justice low income population*

Figure 3.2-7 identifies environmental justice low income areas near the proposed project site. The nearest low income area is the census block group that constitutes the northwestern portion of Blackstone – Census Block Group 511350001002 in Nottoway County. At their closest points, the project site would be separated from this low income area by 2 miles from LRA Parcel 9 and 2.3 miles from Parcel 21/20. A second low income area is Census Block Group 511119301001 in Lunenburg, 3 miles from LRA Parcel 9. Census Block Group 510259301001, 2.5 miles southwest of LRA Parcel 9 in Brunswick County, is also a low income area.

3.2.5.3 Protection of Children

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (Protection of Children) was issued in 1997 to identify and address issues that affect the protection of children. The EO requires all federal agencies to identify and assess environmental health and safety risks that may affect children. The EO defines environmental health and safety risks as "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink and use for recreation, the soil we live on and the products we use or are exposed to)." Children may suffer disproportionately more environmental health and safety risks than adults because of various factors such as: children's neurological, digestive, immunological, and other bodily systems are still developing; children eat more food, drink more fluids, and breath more air in proportion to their body weight than adults; children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves; and children's size and weight may diminish their protection from standard safety features.

There is one known resident child living in one of the houses on LRA Parcel 9 that will be relocated prior to construction. There is a daycare center for children operating in the Officers Club building adjacent to the southern boundary of LRA Parcel 9. This facility hosts 45 children between 15 months and 12 years of age. There are two schools approximately two miles from LRA Parcel 9, three miles from the Grid Parcel, and four miles from Parcel 21/20. The Kenston Forest School is located at 75 Ridge Road in Blackstone and enrolls nearly 400 students in grades Pre-K3 to Grade 12. The Blackstone Primary School is located at 615 East Street in Blackstone and enrolls approximately 470 students from Pre-K though fourth grade.



Legend

- Parcel Boundary
- Fort Pickett Boundary
- County Boundaries
- Census 2010 Block Groups
- Low-Income Population
- Interstate Highway
- U.S. Route
- State Route
- Local Road

Source: ESRI (2012), U.S. Census Bureau (2010)

Figure 3.2-7. Environmental Justice Low Income Areas

U.S. General Services Administration
Environmental Impact Statement
FASTC Nottoway County, VA

3.2.6 Traffic and Transportation

The analysis of traffic and transportation describes both personal and public vehicle movement throughout a road and highway network. The study area for traffic and transportation includes the road and highway networks in Nottoway County, the town of Blackstone, and Fort Pickett that surround and provide access to the proposed FASTC site.

3.2.6.1 Traffic

This section addresses local traffic circulation and traffic conditions. The traffic impact analysis prepared for the 2012 Draft EIS has been updated for this Supplemental Draft EIS to analyze changes in the proposed action. The updated analysis is provided in **Appendix H**.

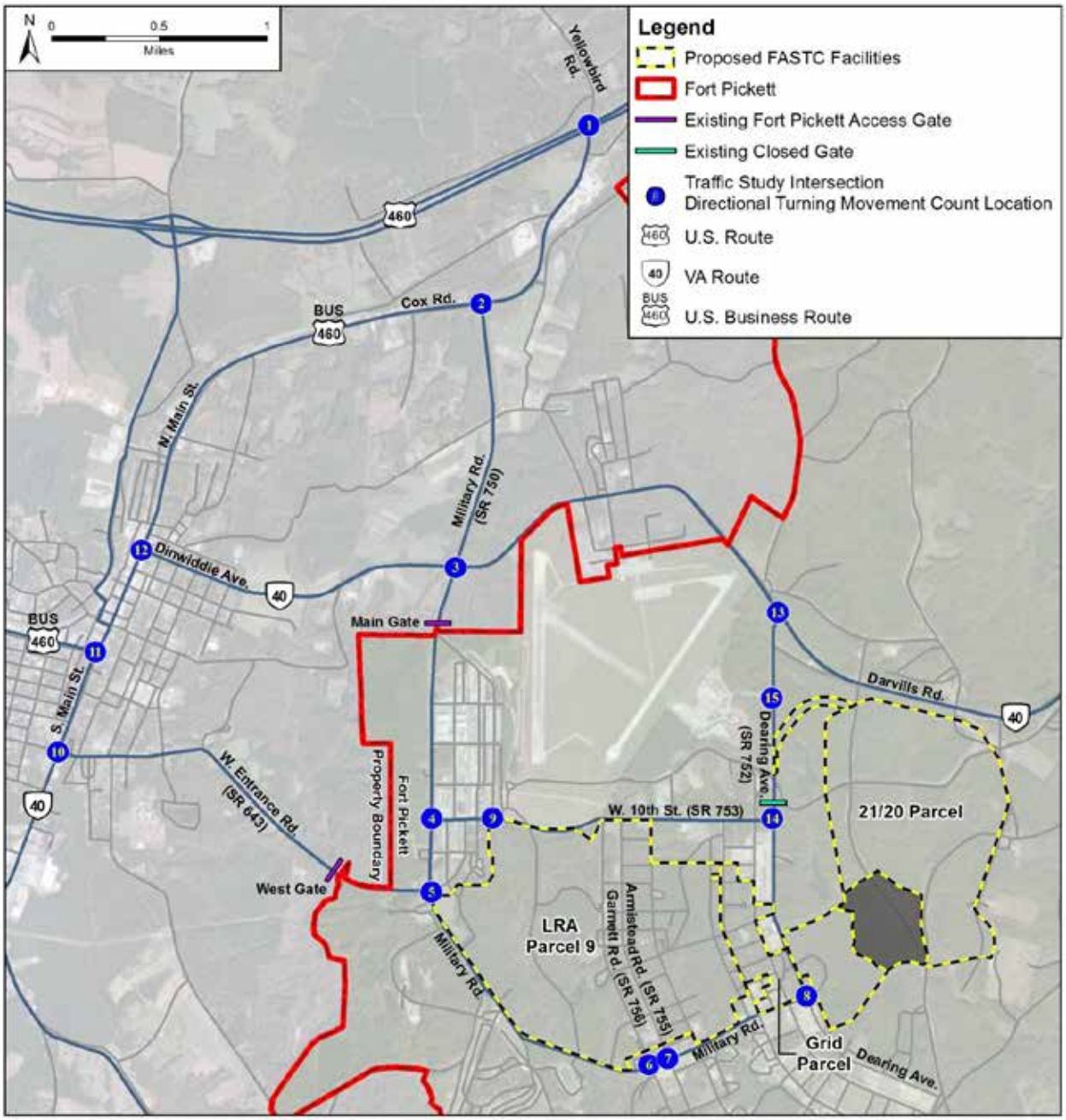
Local Traffic Circulation

Major roadways servicing Fort Pickett and the town of Blackstone include Virginia Primary Route 40 (VA Route 40), U.S. Route 460, U.S. Route 460 Business, Virginia Secondary Route 643 (SR 643, West Entrance Road), and Virginia Secondary Route 750 (SR 750, Military Road) (**Figure 3.2-8**). These roadways have functional classifications that describe the service they are intended to provide and how traffic should flow through the roadway system. In rural areas functional classifications include principal arterials, minor arterial roads, collector roads, and local roads. Rural principal arterials are those roadways that have continuous routes that lend themselves to statewide or interstate travel and typically have limited access. Rural minor arterial roads provide links between cities and towns and are used for inter-county or interstate travel. Rural collector roads are divided into major and minor collector roads. Major collector roads are used for inter-county travel or for carrying vehicles to routes of higher classification (principal arterials and minor arterials). Minor collector roads collect traffic from local roads and carry it to major collector roads, minor arterial roads, and/or principal arterials. The local road system provides access to the immediate area and service over relatively short distances. The functional classifications of the major roadways within the study area include:

- VA Route 40 is a two-lane, undivided roadway classified as a rural minor arterial.
- U.S. Route 460 is a four-lane divided highway classified as a rural principal arterial.
- U.S. Route 460 Business is a two lane, undivided roadway classified as a rural minor arterial.
- SR 643 is a two-lane undivided road classified as a rural major collector
- SR 750 is a two-lane undivided road and has no functional classification.

Local roads include:

- West 10th Street (SR 753)
- Garnett Avenue (SR 756)
- Dearing Avenue (SR 752)
- Warehouse Street



Source: ESRI 2014

Directional Turning Movement Count Locations:

1. US Route 460 (W. Colonial Trial Hwy.)/Cox Rd. (US Route 460 Business)/Yellowbird Rd. (SR 609)
2. Cox Rd. (US Route 460 Business) at Military Rd. (SR 750)
3. Military Rd. (SR 750)/Darvills Rd. (VA Route 40)
4. Military Rd./W. 10th St.
5. Military Rd./ W. Entrance Rd.
6. Military Rd./Garnett Ave. (SR 756)
7. Military Rd./Armistead Ave. (SR 755)
8. Military Rd./Dearing Ave.
9. W. 10th St. (SR 753)/Warehouse St.
10. W. Entrance Rd. (SR 643)/8th St./S. Main St. (VA Route 40/US Route 460 Business)
11. Church St. (US Route 460 Business)/S. Main St. (VA Route 40/US Route 460 Business)
12. Dinwiddie Ave. (VA Route 40)/N. Main St. (VA Route 40/US Route 460 Business)
13. Darvills Rd. (VA Route 40)/Dearing Ave. (SR 752)
14. W. 10th St. (SR 753)/Dearing Ave. (SR 752)
15. Business Driveway/Dearing Ave. (SR 752)

Figure 3.2-8. Roadways and Study Intersections

The roadways within the study area are maintained by three different agencies: the Virginia Department of Transportation (VDOT), the town of Blackstone, and VaARNG. In general, VDOT maintains the roadways and traffic control devices (e.g., traffic signals and stop signs) in Nottoway County (excluding Fort Pickett); the town of Blackstone maintains the roadways and traffic control devices within the town limits, and VaARNG maintains most of the roadways and traffic control devices within the boundaries of Fort Pickett. VDOT currently maintains portions of six roadways within Fort Pickett. Three of these roadways, SR 754 (Garnett Avenue), SR 755 (West Parade Avenue), and SR 756 (Armistead Avenue) traverse LRA Parcel 9.

Traffic Analysis Methods

Operating conditions at unsignalized and signalized intersections under various traffic volume loads are described in terms of levels of service (LOS). At unsignalized and signalized intersections, LOS is based on the average control delay (in seconds per vehicle). LOS provides an index to the operational qualities of an intersection. LOS designations range from A to F, with LOS A representing free flowing operating conditions and LOS E or F representing unacceptable congestion and delay. To determine existing operating conditions, a traffic impact analysis was conducted to identify the LOS at which study intersections are currently operating. Analysis of future LOS is discussed in **Chapter 4, Section 4.2.6**. All data and calculations of the Traffic Impact Analysis are provided in **Appendix H**. **Table 3.2-27** depicts LOS criteria.

How is traffic congestion measured?

Level of Service

- A = free flowing
- B = acceptable minor delay
- C = acceptable with
- occasional backups
- D = acceptable but more restricted
- E = unacceptable delay and congestion
- F = unacceptable failure of traffic flow

Table 3.2-27. Level of Service Criteria

Level of Service	Control Delay per Vehicle (sec/veh)	Level of Service	Average Control Delay (sec/veh)
A	≤ 10	A	0 to 10
B	> 10 ≤ 20	B	> 10 ≤ 15
C	> 20 ≤ 35	C	> 15 ≤ 25
D	> 35 ≤ 55	D	> 25 ≤ 35
E	> 55 ≤ 80	E	> 35 ≤ 50
F	> 80	F	> 50

Source: *Exhibit 16-2 and 17-2 from the Transportation Research Board's "Highway Capacity Manual 2000"*
Notes: *sec/veh is seconds per vehicle; ≤ = less than or equal to; > = greater than*

Existing Traffic Operations

To assess existing and future operating conditions, a study area for conducting the traffic impact analysis was defined through coordination with VDOT, Nottoway County, the town of Blackstone, VaARNG, GSA, and DOS. The study for the 2012 traffic impact analysis included the following intersections:

1. U.S. Route 460 (West Colonial Trail Highway)/ U.S. Route 460 Business (Cox Road) and Yellowbird Road (U.S. Route 609)
2. U.S. Route 460 Business (Cox Road)/Military Road (SR 750)
3. Military Road (SR 750)/Darvills Road (VA Route 40)

4. Military Road /West 10th Street (SR 753)
5. Military Road/West Entrance Road
6. Military Road/Garnett Avenue (SR 756)
7. Military Road/Armistead Avenue (SR 755)
8. Military Road/Dearing Avenue
9. West 10th Street (SR 753)/Warehouse Street
10. West Entrance Road (SR 643)/8th Street at South Main Street (VA Route 40/U.S. Route 460 Business)
11. Church Street (U.S. Route 460 Business)/South Main Street (VA Route 40/U.S. Route 460)
12. Dinwiddie Avenue (VA Route 40)/Main Street (VA Route 40/U.S. Route 460 Business)

Intersections added to the traffic impact analysis for this Supplemental Draft EIS are the following:

13. Darvills Road (VA Route 40)/Dearing Avenue (SR752)
14. West 10th Street Dearing Avenue
15. Business driveway/Dearing Avenue

Figure 3.2-8 depicts the locations of each intersection studied in the traffic impact analysis. Peak hour turning movement/traffic volume counts for intersections 1 through 12 were collected in support of the 2012 traffic impact analysis in April 2012. Counts at intersections 13 through 15 were completed in August 2014. A compounded annual growth rate of 1% per year was applied uniformly to all movements in the 2012 counts to provide a consistent basis for evaluating 2014 traffic conditions. The peak hours are 6:30 to 7:30 a.m. and 4:00 to 5:00 p.m. The results of the analysis of 2014 traffic conditions are as follows:

- The three signalized intersections within the town of Blackstone (10, 11, and 12) operate at an overall LOS C or better during the a.m. and p.m. peak hours.
- All of the unsignalized movements at the other intersections operate at LOS A or B during the a.m. and p.m. peak hours.

All intersections are considered to be operating at acceptable levels of service.

Planned Improvements

Within the study area there is one VDOT planned improvement, to replace the existing bridge on Cox Road over the Norfolk-Southern railroad tracks. This replacement is anticipated to occur in 2015. However, this improvement would not affect operations at the intersections within the study area.

Existing Traffic Operations Associated with Fort Pickett

Access to Fort Pickett is controlled by two gates: the Main Gate and the West Gate (**Figure 3.2-8**). These gates are manned based on the number of vehicles per hour per lane as determined by the VaARNG (**Table 3.2-28**).

Table 3.2-28. Gate Vehicles per Hour per Lane and VaARNG Gate Staffing Guidelines

Vehicles per Hour per Lane	Number of Guards
<375	1
≥375 and <675	2
≥675	3

Notes: *< = less than; ≥ = greater than or equal to*

Currently, the Main Gate and the West Gate each have two lanes, and vehicles per hour per lane are less than 375 during both a.m. and p.m. peak hours. As a result there is currently one guard assigned to each lane.

3.2.6.2 Transportation

Pedestrian and Bicycle Facilities

Within the study area, sidewalks are provided in the town of Blackstone along Main Street, Dinwiddie Avenue, Church Street, and West Entrance Road. There are no sidewalks provided along VDOT maintained roadways or along the roadways within Fort Pickett.

There are no designated bicycle facilities provided within the study area.

Bus Service

Bus service within the town of Blackstone is provided by the Blackstone Area Bus System (BABS). BABS makes 12 stops around the town of Blackstone. These stops include Downtown, Blackstone Medical Center, Patterson and Harris, Carver and Tucker, Cralle and Northwest, Pinewood Apartments, Hardy and Falls, Blackstone Conference and Retreat Center, 8th and Main Streets, Food Lion, Walmart, and Lester and West Entrance Road. Other bus lines provide transportation to Crewe, Burkeville, Alberta, Lawrenceville, Victoria, Kenbridge, Farmville Buckingham, Cumberland Prince Edward, Amelia, McKenney, DeWitt, and Dinwiddie.

While there are no designated BABS routes or scheduled service to Fort Pickett, BABS does provide on-call shuttle service between Fort Pickett and the Main Street business district in Blackstone. BABS also provides bus service between Fort Pickett and Blackstone from 6:00 p.m. to 11:00 p.m. on Fridays and Saturdays. Pick-ups are made at the gym, post exchange, and billeting office. The bus travels through the Main Gate on Military Road.

Rail

Blackstone is serviced by the Norfolk Southern Railroad. This main line serves the industrial sites at Burkeville, Crewe, Blackstone, and Fort Pickett and links major population centers and the Port of Hampton Roads.

Air

The Blackstone Army Airfield/Allen C. Perkinson Airport on Fort Pickett is open to military and commercial service. This airport is located northeast of Parcel 21/20 and the Grid Parcel, and north of LRA Parcel 9.

3.2.7 Recreation

Recreational resources are defined in this section as any type of outdoor activity in which area residents, visitors, or tourists may participate. Typically (though not exclusively) focused on weekends or vacation periods, such activities may include hiking, fishing, and boating. Recreational opportunities and resources can be a very important component of an area's economy and the lifestyle of its residents. Recreational resources analyzed in this chapter are primarily associated with the natural resources, such as forests, lakes, and streams.

The study area for recreational resources includes those resources located in Nottoway County that may be affected by the Proposed Action, and Parcel 21/20, the Grid Parcel, and LRA Parcel 9. Many of the recreational resources in the study area are currently managed by Fort Pickett. Maintaining public access for these recreational activities is an important aspect of the installation's community relations. Recreational resources within the study areas are described individually.

Recreation

- The Blackstone Recreational Association and the Crewe-Burkeville Recreation Association both manage youth activities in the area
- Two nearby country clubs and nearby lakes provide additional recreational activities
- Fort Pickett allows hunting and fishing with the proper permits and licenses
- Fort Pickett has a fitness center in the cantonment area
- Nottoway County has a public campground adjacent to LRA Parcel 9
- LRA Parcel 9 contains tennis courts and a ball field

Nottoway County

Organized recreational activities within Nottoway County are managed by two recreation associations; the Blackstone Recreational Association and the Crewe-Burkeville Recreation Association. The Blackstone Recreational Association organizes sports activities for young people ages 3 to 18. Using three lighted fields, they sponsor Dixie Youth baseball, softball, T-ball, football, and cheerleading. The Crewe-Burkeville Recreation Association holds its activities at Beamer Field and Hackney Field in Crewe and in the Burkeville Recreational Park. They sponsor Dixie Youth baseball and softball, T-ball, and soccer for children ages 4 to 18. The associations work together on basketball programs.

There are two country clubs open for membership. Both the Crewe Country Club and the Nottoway River Country Club in Blackstone have nine-hole golf courses, swimming pools, and clubhouse facilities. The Nottoway River Country Club also has tennis courts.

Nottoway County has several public lakes available for boating, fishing, swimming, and picnicking. These include Nottoway Lake (Lee Lake), Crystal Lake, and the Fort Pickett reservoir. Hunting is also widely available in Nottoway County and surrounding areas. The area supports robust stock of small and large game.

The Nottoway County Pickett RV Park, a public recreational vehicle campground, is present just outside the northwest border of LRA Parcel 9. The campground is equipped with electrical and water/sewer hookups for 25 campsites.

Parcel 21/20

Approximately 35,000 acres are currently open to recreational hunting and fishing on Fort Pickett. Fort Pickett allows recreational hunting to occur on Parcel 21/20 year round during state specified open seasons. All 549 acres of Parcel 21/20 are available for hunting. There are 17 designated locations for bow hunting tree stands on Parcel 21/20 (ARNG-MTC Fort Pickett 2010). The southeastern portion of the parcel is also open to black powder and shotgun hunting. Fishing is permitted on Parcel 21/20 year round; however, stream habitat on this parcel is shallow and slow moving and is not ideal for fishing. Just west of Parcel 21/20 is an area containing two man-made lakes that are used for hunting and fishing. Individuals participating in activities on Fort Pickett must have in their possession a current Fort Pickett permit, a valid Virginia hunting, fishing or trapping license, and a state or federal game stamp, if required by law.

The public is required to check in at designated locations before accessing hunting and fishing areas, at which point they are informed about areas that are closed for military training or security purposes. Trotline, bank poles, throw nets, snagging, or jug fishing on Fort Pickett is prohibited.

Grid Parcel

The Grid Parcel supports limited hunting on 52 forested acres and contains two locations for bow hunting tree stands (ARNG-MTC Fort Pickett 2010).

LRA Parcel 9

Compass Pond is a small pond on LRA Parcel 9 that supports year round fishing. However, during fieldwork conducted in 2011 and 2012, the pond was observed to be well below capacity and no longer suitable for fishing. Hunting is also allowed on LRA Parcel 9, and approximately 591 acres are available for hunting within the parcel boundaries. There are 17 designated locations for bow hunting tree stands on the parcel (ARNG-MTC Fort Pickett 2010).

An outdoor recreational area that contains six outdoor tennis courts and a ball field is located on LRA Parcel 9. This area is located just west of the intersection of Garnett Road and West 15 ½ Street.

3.2.8 Utilities and Infrastructure

Infrastructure refers to the system of public works, such as utilities, that provides the underlying framework for a community. Infrastructure components and utilities discussed in this Supplemental Draft EIS include water supply, wastewater, electrical supply, telecommunications, and solid waste management.

The study area for utilities includes the three study area parcels and the proposed area that would provide utility services, the town of Blackstone, and Nottoway County. As such, the infrastructure of the area is discussed from a

Utilities and Infrastructure

- Blackstone owns and operates the water treatment plant that is permitted for 3.5 million gallons per day
- Blackstone owns and operates the wastewater treatment plant that is permitted for 2.0 million gallons per day
- Southside Electric Cooperative provides electric service to Fort Pickett
- Mid-Atlantic Broadband and Century Link are service providers that have fiber optic nodes in the area
- Solid waste is delivered to the Nottoway County Landfill

municipal/county perspective and then the available utilities are described individually for each parcel. Solid waste is managed in a similar fashion in the study area and the region and, thus, is discussed jointly.

3.2.8.1 Potable Water

The town of Blackstone and Fort Pickett share a common water source, the Fort Pickett Reservoir. The Fort Pickett Reservoir, an impounded section of the Nottoway River, is 384 acres in size with an average yield capacity of 7.72 million gallons per day (mgd) (VDMA 2011) and a safe yield capacity of 9.0 mgd (Nottoway County 2009). Water drawn from the reservoir is treated at the plant that is located in the cantonment area south of LRA Parcel 9. The water treatment plant, which operates under a Virginia Department of Health Office of Drinking Water Permit #VA0005827, is also shared by the town and the installation (VDMA 2011). The water treatment plant has a design capacity of 4.5 mgd, but is currently permitted for 3.5 mgd due to raw water pump capacity (Nottoway County 2009). The U.S. Army has a stipulation stating that the town must always reserve an available capacity of 75%, or 2.625 mgd, for the Army in the event it is needed for a full mobilization at Fort Pickett, leaving an available capacity of 875,000 gallon per day for the town. The plant can be enlarged, but there are no plans to do so until it is required by demand (Nottoway County 2010).

Data provided by the town of Blackstone show that between May 2011 and May 2012 the average monthly demand was 14.4 million gallons. This equates to a daily average of about 0.473 mgd (Blackstone 2012). In 2009, the maximum single day withdrawal was 1.920 mgd (Nottoway County 2010). According to the 2009 Nottoway Water Supply Plan, in 2006 Fort Pickett water demand was approximately 20% of the daily usage while the town withdrew nearly 80%. Nottoway County has the infrastructure and capacity for estimated water demands until 2050 (Nottoway County 2009).

In addition to the plant, water distribution mains, three elevated storage tanks, and three pumping stations are located throughout the area within the boundaries of Fort Pickett (VDMA 2011). Water meters are installed on buildings on the town side of the system but there are no meters on any Fort Pickett buildings. According to local public works officials, the aging water distribution system has deteriorated and is leaking in many places.

Parcel 21/20

Potable water distribution lines occur on Parcel 21/20 along the roadways at the southwestern boundary of the parcel (**Figure 3.2-9**). The distribution system does not extend into the parcel interior. Distribution piping ranges in size from six to 16 inches in diameter.

Grid Parcel

There are several water lines that traverse the Grid Parcel. Lines run north-south along East Parade, Kemper, and Dearing Avenues. Lines also run east-west along Military, 18 ½th, 18th, 17th, 16th, 15th, and 14th Streets.

LRA Parcel 9

Potable water lines occur along Military Road at the western parcel boundary and along the roadway network that comprises a large portion of the eastern half of the parcel. There is one potable water storage tank located near West Parade Avenue and West 15 ½ Street (**Figure 3.2-9**).

Legend

- Fort Pickett
- Site Boundary
- Rivers and Streams
- Primary Highway
- Secondary Highway
- Local Road

Utilities

- Sewer Lines
- Water Lines

Source: ESRI, Transystems (2012)

Figure 3.2-9. Potable Water and Sewer

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3.2.8.2 Wastewater Treatment

The study area is serviced by a wastewater treatment plant (WWTP) that is owned by the town of Blackstone. Blackstone does not have a Municipal Separate Storm Sewer System (MS4) permit. The WWTP is located near the potable water treatment plant south of LRA Parcel 9 and operates under Virginia Pollutant Discharge Elimination System permit #VA00025194. The WWTP provides primary, secondary, and tertiary treatment that includes grit removal, trickling filters, clarifiers, chlorination, and dechlorination. The plant is permitted for a treatment capacity of 2.0 mgd, with an average discharge of 0.637 mgd; a high discharge of 1.822 mgd was recorded in March 2012 (Blackstone 2012). The town of Blackstone is required to maintain availability of 75% of the capacity (1,500,000) for Fort Pickett in the event of a full mobilization (Blackstone 2014) leaving an available capacity of 500,000 gallons per day for the town. According to 2011-2012 wastewater treatment data (Blackstone 2012), the Blackstone WWTP currently treats approximately 514,000 gpd. Therefore, under typical conditions, the WWTP has ample capacity to meet wastewater flow from the town. However, in the event Fort Pickett becomes fully mobilized, the town of Blackstone would need to maintain a wastewater treatment capacity reserve of 1.5 mgd. If full mobilization were to occur, the capacity of the WWTP would not be sufficient to handle municipal flows in addition to the 1.5 mgd from Fort Pickett under the existing conditions. The WWTP discharges to an unnamed tributary of Hurricane Branch (VDMA 2011). With the exception of two buildings in the cantonment area that utilize septic tanks and drain fields, the WWTP services the entire cantonment area (VDMA 2011).

The wastewater collection system piping ranges from eight inches to 30 inches in diameter, increasing in size as it approaches the WWTP. According to Fort Pickett, the collection system has been cleaned and re-lined. The town of Blackstone is required to perform upgrades to the system under a consent order with VDEQ due to overflow problems at some pump stations. Flows from the FASTC facility would not go through these pump stations. The upgrades would be located in a residential area of Blackstone between College, Brunswick, and Lunenburg Avenues and would not occur on the study area parcels (Courier Record 2012a).

Parcel 21/20

The wastewater collection system on Parcel 21/20 is limited to the southwest portion of the parcel. The collection system occurs along the parcel boundary at Dearing Avenue and briefly extends into the parcel at Military Road (**Figure 3.2-9**).

Grid Parcel

There are several sewer lines that traverse the Grid Parcel. Lines run east-west between Kemper and Dearing, and Kemper and East Parade Avenues. Lines also run east-west along Military, 18 ½th, 18th, 17th, 16th, 15th, and 14th Streets.

LRA Parcel 9

The collection system on LRA Parcel 9 is concentrated on the eastern half of the parcel; however, mains do occur near Compass Trail and along Military Road on the western portion of the parcel. The system

generally follows the street grid and abandoned lines may remain in areas where demolition activities have occurred (**Figure 3.2-9**).

3.2.8.3 Electricity

Electrical services and the associated infrastructure in the region is owned and maintained by Southside Electric Cooperative (VDMA 2011). An electrical transmission line originates from the Farmville switching station, approximately 30 miles west of Fort Pickett, and ends at a substation located adjacent to LRA Parcel 9 at the intersection of West Entrance and Military Roads. This substation services the installation through above ground radial lines (VDMA 2011). Southside Electric Cooperative is making infrastructure improvements including new lines, new substations, new switching stations, and improvements to more than 700 miles of transmission lines. Substations will be converted from 12.47 kilovolts to 24.94 kilovolts to reduce line loss and increase service reliability (Southside Electric Cooperative 2012).

Parcel 21/20

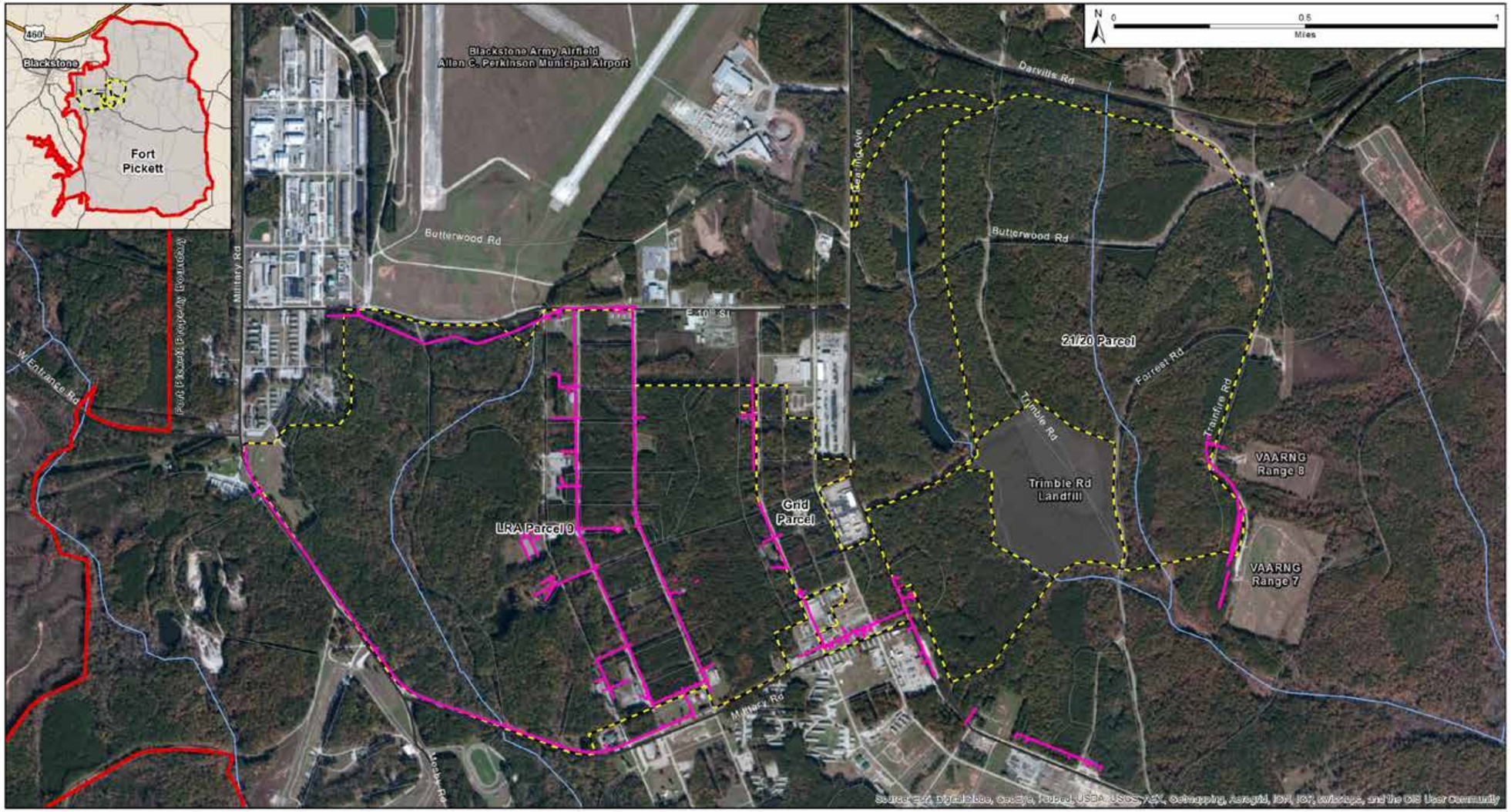
Limited electrical service is currently available on Parcel 21/20 and mainly serves to provide lighting to the various ranges. Electrical main lines for the parcel are located along Dearing Avenue (**Figure 3.2-10**). As of April 1, 2014, these mains and the distribution system are owned and maintained by Southside Electric Cooperative (Southside Electric Cooperative 2014).

Grid Parcel

There are several electrical lines on the Grid Parcel. They are evenly spread out on the parcel running along most of the roads.

LRA Parcel 9

The electrical distribution system on LRA Parcel 9 is concentrated on the eastern half of the parcel and primarily occurs along Armistead, West Parade, and East Parade Avenues. Electrical lines also occur along the western parcel boundary along Military Road and along the northern parcel boundary near West 10th Street. The system generally follows the street grid in a north-south direction (**Figure 3.2-10**).



Legend

- Fort Pickett
- Site Boundary
- Rivers and Streams
- Primary Highway
- Secondary Highway
- Local Road

Utilities

- Electrical Lines

Source: ESRI, Transystems (2012)

Figure 3.2-10. Electrical Service

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3.2.8.4 Telecommunications

There are two service providers, Mid-Atlantic Broadband and Century Link. Both have fiber optic nodes in the area. The telecommunication distribution system is comprised of a 144 strand, single-mode, long haul, fiber optic cable. Telecommunication lines parallel Military Road and run to the Telephone Exchange Building (VDMA 2011). From the Telephone Exchange Building, service is achieved through the use of aerial cables, direct burial cable, and a conduit system (VDMA 2011). There are two fiber optic nodes on Fort Pickett. One, owned by CenturyLink, is located near the corner of Military Road and West 10th Street. The other is owned by Mid-Atlantic Broadband Cooperative and is located at 520 West Parade Avenue on LRA Parcel 9 near the water tower. A cellular telephone tower is also located on the northeast portion of LRA Parcel 9 near East Parade Avenue and East 13th Street. Fiber optic cable has been installed along major roadways at Fort Pickett and service to all developable areas is anticipated within five years (Fort Pickett Vision Plan Final, February 2012).

Parcel 21/20

Parcel 21/20 is mostly undeveloped, and telecommunications service is limited. Fiber optic lines run from Dearing Avenue to Trimble Road at the Trimble Landfill. Service is available along Dearing Avenue outside of the parcel boundary.

Grid Parcel

Fiber optic service on the Grid Parcel is present along East Parade Avenue and Dearing Avenue.

LRA Parcel 9

Fiber optic service on LRA Parcel 9 is along West 10th Street, Military Road and West Parade Avenue.

3.2.8.5 Solid Waste

EO 12873, *Federal Acquisition, Recycling, and Waste Prevention*, requires all federal facilities to recycle. The Fort Pickett recycling facility is located at Building 2360 and accepts cardboard, aluminum, paper, and metal. The facility does not accept plastic, glass, or wood. Non-recyclable solid waste is disposed of as solid waste.

Solid waste generated in Nottoway County is collected and taken to the Nottoway County Landfill located on Livestock Road in Blackstone. The landfill facility does not accept waste from any out-of-county source, nor does it accept any type of hazardous waste. The Nottoway County landfill is expected to have capacity until the year 2027 (Nottoway County 2012a). The county has purchased 160 acres of land near the intersection of U.S. Route 460 and Highway 614 for the location of a new county landfill.

3.2.9 Public Health and Safety

Public health and safety addresses issues related to the health and well-being of FASTC trainees and employees as well as the community living in the vicinity of the proposed FASTC facility. The study area for public health and safety is discussed jointly and includes the study area parcels, town of Blackstone, and Nottoway County.

Public Health and Safety

- Fort Pickett has a fully staffed and equipped police and fire department
- Practices and contingency plans are in place at Fort Pickett to prevent the release of hazardous materials
- The town of Blackstone has a volunteer fire department and a police force with 10 officers, an investigator, and the Chief
- There are eight hospitals within 40 miles of Fort Pickett

The health and safety issues discussed include emergency services, operational safety, environmental health effects, notifiable diseases, traffic accidents, and unexploded ordnance (UXO). Emergency services include: police protection, fire protection, ambulance service, and emergency health care. Operational safety addresses the safety environment for visitors and employees. Environmental health effects include the public health effects of noise, water quality, and air quality in the surrounding community. Notifiable diseases are diseases that are required by law to be reported to government authorities. This section discusses the public health and safety environment.

3.2.9.1 Emergency Services

Fort Pickett has a mutual aid agreement with the Blackstone Volunteer Fire department, Nottoway County Rescue Squad, Dinwiddie, Alberta Volunteer Fire Department, and Brunswick Rescue.

Fort Pickett provides fire, emergency medical services (EMS), and police services to Parcel 21/20 and the Grid Parcel. When requested, Fort Pickett typically responds to emergencies in Pickett Park because of proximity (Blackstone Volunteer Fire Department 2012b). Firefighters and emergency medical technicians are on duty 24 hours a day. The Fort Pickett fire department, operating under the Department of Public Works, provides structural firefighting, EMS, advanced life support, aircraft firefighting, rescue and standbys, wildland firefighting, vehicle rescue and extrication, confined space rescue, trench and high angle rescue, hazardous material incidents operations level, and life safety inspections of buildings and structures. Fort Pickett has two fire engines, two ambulances, two wildland fire trucks, one air crash rescue truck, one Hazmat trailer, and one rescue trailer. The department has 20 full time and two part time employees that operate on three shifts, with six personnel assigned to each shift. The fire chief and one wildland firefighter work Monday through Friday and as needed on weekends. Personal leave, training or other commitments may affect staffing levels on a day to day basis, which can affect emergency response times and capabilities. Additionally, staffing and equipment levels can limit response to multiple simultaneous emergencies. In 2011, Fort Pickett responded to 674 emergency calls.

The towns of Blackstone, Crewe, and Burkeville have nearby volunteer fire and rescue departments. The Blackstone Volunteer Fire Department has a completely volunteer staff of 53 members. Their equipment includes three engines, one ladder, one rescue, one tank truck, one EMS first responder, and two utility

vehicles. The Blackstone Volunteer Fire Department has a mutual aid agreement with the Fort Pickett Fire Department (Blackstone Fire Department 2012a) and provides emergency assistance at Fort Pickett when requested. The department has a First Responders Unit that can provide initial treatment for all life threatening emergencies (Nottoway County 2006). The Crewe Volunteer Fire Department has over 40 members, a First Responder Unit, and is well equipped for emergency response. The Burkeville Volunteer Fire Department has roughly 26 members, many of whom are trained Emergency Medical Technicians.

Nottoway Ambulance has a paid staff of six and 40 volunteers. Their equipment includes five ambulances and two response vehicles. They respond to approximately 170 calls per month. Time of day fluctuations in staffing levels can affect response times during multiple simultaneous emergencies (Nottoway Ambulance 2012).

The Fort Pickett Police Department is composed of the Law Enforcement Division, Security Division, and Communications Division. In addition, Nottoway County and the town of Blackstone both have law enforcement agencies. Nottoway County has a sheriff's department that provides law enforcement and patrols 24 hours a day, seven days a week, serves papers, and conducts criminal investigations among many of its other services (Nottoway County Sheriff's Office 2012). The town of Blackstone has a police force with 10 officers, an investigator, and the Chief. Currently the department has two open positions that have not been filled. In addition to the officers, the town of Blackstone police department employs four dispatchers and an administrative assistant. The force maintains 14 cruisers and one motorcycle. The office fields approximately 600 calls a month, which include fires, EMS, and traffic stops. The department has indicated they are able to provide services without any strain on the department (Blackstone Police 2014).

There are eight hospitals within 40 miles of Fort Pickett in Farmville (one), South Hill (one), Petersburg (one), Chesterfield (two), Richmond (two), and Burkeville (one) (Nottoway County 2006). There are no hospitals in Nottoway County. The closest hospital, Southside Community Hospital, is 25 miles away in Farmville. This hospital is also the smallest of the eight, containing 117 beds. However, it does provide surgery, obstetrics, pediatrics, diagnostic capabilities, and emergency care. Southside is a non-profit hospital serving the residents of Amelia, Appomattox, Buckingham, Charlotte, Cumberland, Lunenburg, Nottoway, and Prince Edward Counties. The largest hospital, the Medical College of Virginia, is part of the Virginia Commonwealth University and is located 40 miles away in Richmond. This hospital provides more specialized care than Southside Community Hospital and is a Level I trauma center.

3.2.9.2 Operations Safety

Explosives Safety

Siting requirements for explosive materials storage (e.g., munitions) and handling facilities are based on safety and security criteria established by the DoD Explosive Safety Board. Explosive safety quantity distance (ESQD) arcs determine the distance between ordnance storage and handling facilities and inhabitable areas. Ammunition and bulk explosives are stored in containers called magazines specifically designed, sited, and designated for this purpose. A magazine's ESQD arc is calculated by the type and amount of ordnance stored in that magazine. ESQD requirements and permissible storage capacities are

approved by the DoD Explosives Safety Board. No explosives are currently stored on any of the site parcels. According to the environmental baseline survey conducted in support of the Base Realignment and Closure (BRAC) action and subsequent transfer of Fort Pickett property to LRA (Woodard-Clyde 1997), no areas within the Grid Parcel or LRA Parcel 9 were identified as being used for the storage of explosives based on current and historical evidence. Therefore, additional investigations with regards to explosives are not warranted. A suspected potential ordnance/explosives burn/disposal area was identified on Parcel 21/20 as part of a Phase I environmental site assessment and is discussed in **Section 3.2.11.2**.

Ordnance is currently stored at the Fort Pickett Ammunition Supply Point and will continue to be stored at this location for the foreseeable future.

Hazardous Substances

Current management practices and contingency plans for the use, handling, storage, transportation, and disposition of hazardous substances ensure exposure to the environment and human contact are minimized.

Unexploded Ordnance

Certain areas within the study area have been historically used for live fire training. Small arms munitions are not considered to be UXO. An extensive analysis of UXO potential was conducted as part of an environmental baseline survey conducted in support of the BRAC action and subsequent sale of Fort Pickett property to LRA (Woodard-Clyde 1997). According to the report, no areas within the Grid Parcel or LRA Parcel 9 were identified as a concern for the presence of UXO based on current and historical evidence. The safety of recreational users on Fort Pickett is protected from training activities by careful control of access through gate checks and area closures. Persons visiting Fort Pickett are instructed never to pick up or move any suspect UXO and to avoid the area where it is found, notify Range Operations immediately, flag the area, and provide a location to Range Operations. Signage is used to warn visitors about keeping away from firing and explosives range areas.

3.2.9.3 Environmental Health

Noise

Various existing activities generate noise in the study area. These activities include (depending on the location) aviation operations, range operations, traffic, construction, and general industrial activities. These activities are described in detail in **Section 3.2.3**. Noise producing activities are conducted in accordance with applicable regulations to protect the general population and workers from excessive noise exposure.

Water

Section 3.1.4 discusses water quality issues that could potentially affect public health. The USEPA and the Virginia Department of Health enforce Safe Drinking Water Act standards and related legislation to protect public health.

The potential for accidental releases of hazardous materials to surface and groundwater to occur during training currently exists as a result of accidental releases from traffic accidents and operations at Fort Pickett. In addition, both underground and above ground storage tanks (USTs and ASTs), which have the potential to leak hazardous materials, have been identified on the Grid Parcel and LRA Parcel 9. These ASTs/USTs are described in detail in **Section 3.2.11**.

Fort Pickett and area businesses that store petroleum products would be subject to the Oil Pollution Prevention Regulation under Section 311 of the CWA. This regulation sets forth requirements for prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. To prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil, the regulation requires these facilities to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans and establishes procedures, methods, and equipment requirements. The term "navigable waters" of the U.S. means "navigable waters" as defined in Section 502(7) of the Federal Water Pollution Control Act (FWPCA), and includes: (1) all navigable waters of the U.S., as defined in judicial decisions prior to the passage of the 1972 Amendments of the FWPCA (Public Law 92-500) also known as the CWA, and tributaries of such waters as; (2) interstate waters; (3) intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and (4) intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

Air

Section 3.2.2 discusses the stationary and mobile source air emissions that can potentially affect public health. USEPA and VDEQ set and enforce these standards to protect public health. Currently, ambient air quality standards are met for the study area and no other issues have been identified that currently pose public health or safety risks from an air quality perspective.

3.2.9.4 Notifiable Diseases

Notifiable diseases are diseases that are required by law to be reported to government authorities. This collation of information allows the authorities to monitor the disease and provides early warning of possible outbreaks. Army personnel deployed overseas and training at Fort Pickett must have Class 1 medical clearance. A Class 1 medical clearance is issued to applicants without any identifiable medical conditions limiting work abroad, making them available for assignments worldwide (DOS 2009).

3.2.10 Aesthetic and Visual Resources

This section describes the existing aesthetic and visual qualities in the study area. While the focus is on the visual resources on those lands being considered under the Proposed Action, it also includes areas within their viewshed. Visual resources include scenic areas, vistas or thoroughfares, and locations that provide natural-appearing or aesthetically-pleasing places or views. Visual resources are also recognized as views and vistas that people are

Aesthetic and Visual Resources

- Study area is largely forested
- Developed areas have older buildings in varying condition
- Two main entrances to Fort Pickett

accustomed to seeing as a general part of the landscape.

3.2.10.1 General Setting

Much of the land at Fort Pickett is forested and has moderately sloping topography that is bisected by streams. The land contains scattered wetlands, small ponds, and rock outcrops. Much of Fort Pickett exists in a natural state and its perimeter is mostly unfenced. There is a main cantonment area that contains most of the existing buildings and landscaped areas. Many of the buildings at Fort Pickett have been in existence since the mid-1940s and are in varying condition.

3.2.10.2 Access Roads

There are three potential access corridors to the proposed project sites: Military Road, West Entrance Road, and Dearing Avenue.

Military Road

Military Road is a two-lane road that runs from U.S. Route 460, approximately one-and-a-half miles north of the Fort Pickett main entrance gate, to Dearing Avenue within the boundaries of Fort Pickett. The road forms the west and southern boundary of LRA Parcel 9. The road also crosses VA Route 40, approximately one-third of a mile north of the main entrance gate to Fort Pickett. Both sides of the road are densely vegetated from VA Route 40 to the Fort Pickett main entrance gate. South of the main entrance gate the western side of the road remains densely vegetated with the exception of a large metal water tower and a small area of development near its intersection with West Entrance Road. The east side of Military Road to the south of the main entrance gate is heavily developed with warehouses and other large structures associated with Pickett Park and the Blackstone Army/Allen C. Perkinson Airport. All of the buildings along Military Road between the main entrance gate and the West Entrance Road intersection were constructed during World War II (**Figure 3.2-11**).

Figure 3.2-11. View of Military Road, Looking North

West Entrance Road

West Entrance Road is a two-lane road, which runs from VA Route 40/U.S. Route 460/South Main Street, to its intersection with Military Road, near a secondary entrance gate to Fort Pickett. West Entrance Road runs roughly east-west, and extends to the Fort Pickett West Gate. Beginning on the westernmost part of the road and traveling east, there is a neighborhood to the south of the road and concrete block storage units and a church to the north of the road (**Figure 3.2-12**). Twentieth-century residential buildings and far fields are located on either side of the road for the duration of its length. These include cottages, split levels, and mobile homes. A cemetery is located to the north of a curve in the road. The cemetery is set back from the road approximately 30 feet and is screened by a stand of coniferous trees. Across the street from the cemetery there is a ruinous nineteenth century, two-story house. Approximately three-quarters of a mile northwest of the West Gate into Fort Pickett is a 1850s house known as Farley's Farmhouse.

Figure 3.2-12. View of Neighborhood Off of West Entrance Road, Looking Southeast

Dearing Avenue

Dearing Avenue extends south from VA Route 40, between the Pickett Park industrial area and Parcel 21/20, and through the Fort Pickett Cantonment Area. This two-lane road provides access to the industrial area, Game Check Station, Blackstone Army Airfield, and serves as a convoy route for Fort Pickett operations. A gate located just north of East 10th Street restricts access from the north into the cantonment area. Both sides of the road between VA Route 40 and East 10th Street and East 17th Street and Military Road are densely vegetated. Between East 10th and 17th Streets, the east side of Dearing Avenue is densely vegetated while the west side includes two separate fenced and paved areas containing warehouses and open storage of military vehicles and equipment (**Figure 3.2-13**).

Figure 3.2-13. View of Dearing Avenue, Looking South

Parcel 21/20

Parcel 21/20 is located in the northwest quarter of Fort Pickett, east of LRA Parcel 9. It encompasses approximately 549 acres of undeveloped land. The topography of Parcel 21/20 has slight hills rising from creek beds (**Figure 3.2-14**). Gravel and dirt roads provide access for tanks and other equipment to the Fort Pickett range areas located east of the parcel. Metal swing gates limit access to these range areas. Range areas have been cleared of trees and are covered with grass. The remaining areas of the parcel are covered with secondary-growth forest and discrete areas of managed pine forest.

Figure 3.2-14. View of Stream and Slope in Parcel 21/20, Looking East

Grid Parcel

The Grid Parcel is located east and adjacent to LRA Parcel 9 between LRA Parcel 9 and Parcel 21/20. The Blackstone Army/Allen C. Perkinson Municipal Airport is located to the northwest. Vegetation within the parcel consists of young growth forest and shrubs in the northernmost portion of the parcel. Patches of cleared land and shrubs, where buildings once stood, occur intermittently throughout the parcel. Much like LRA Parcel 9, the topography of the parcel is relatively flat, most likely as a result of grading during construction of Fort Pickett in 1942.

Similar to LRA Parcel 9, existing buildings on the Grid Parcel are a mix of architectural styles and ages. Various rectangular buildings, many built in the 1940s, are located from Military Road northward to East 18th Street (**Figure 3.2-15**).

Figure 3.2-15. View of typical buildings and open areas in the Grid Parcel, Looking South

LRA Parcel 9

LRA Parcel 9 is located in the northwest quarter of the Fort Pickett boundary and encompasses 727 acres. The Blackstone Army/Allen C. Perkinson Municipal Airport is to its immediate north and Grid Parcel is adjacent to the east. The parcel is largely vegetated on the western half and more developed on the eastern half. Vegetation within the parcel consists of young growth forest and shrubs (**Figure 3.2-16**). On cleared land, where buildings once stood, there is scrub (e.g., an abundance of low trees and shrubs). The topography of the parcel is relatively flat, most likely as a result of grading during construction of Fort Pickett in 1942.

Buildings on LRA Parcel 9 are a mix of architectural styles and age. There is a single-story rectangular building that was constructed in the 1940s located in the northeast corner and another in the center of LRA Parcel 9. A water tower, constructed in 1942, is also located in the center of LRA Parcel 9. The water tower is a cylindrical steel holding container with a conical metal roof on eight steel posts. Like the other water towers found on Fort Pickett, it is painted in a red and white checked pattern. In the southeastern portion of LRA Parcel 9 is a rectangular, concrete block building, which currently is the unmanned vehicle training center and office. In the southern portion of LRA Parcel 9 are two one-story vehicle maintenance buildings, one with aluminum rolling overhead doors.

Figure 3.2-16. View of West Parade Avenue, Looking South

3.2.11 Hazardous Substances

3.2.11.1 Definition of Hazardous Substances

Hazardous substances consist of hazardous materials, hazardous waste, and toxic substances, as defined below.

Hazardous Materials

Hazardous materials are defined as any substance that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a substantial hazard to human health or the environment when treated, handled, used, packaged, stored, transported, or disposed of. This includes ignitable, corrosive, reactive, or toxic materials (Federal Standard 313D). Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Occupational Safety and Health Act; and the Emergency Planning and Community Right-to-Know Act.

Hazardous Waste

The Resource Conservation and Recovery Act (RCRA) of 1976[19] and the Hazardous and Solid Waste Amendments of 1984[20] define hazardous waste as a solid waste or combination of wastes that, due to its quantity, concentration, or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or may pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, disposed of, or otherwise managed. A solid waste is a hazardous waste if it is not excluded from regulation as a hazardous waste[21].

Potential hazardous waste contamination areas on DoD owned property are investigated as part of the Defense Environmental Restoration Program. As part of this program, the DoD created the Installation Restoration Program (IRP) and the Military Munitions Response Program (MMRP). These programs were instituted to satisfy the requirements of CERCLA and RCRA for former and current hazardous waste sites. CERCLA was enacted into law in 1980, and its follow-up amendment, Superfund Amendments and Reauthorization Act (SARA), was passed in 1986. These two laws established a series of programs for the cleanup of hazardous waste disposal and spill sites nationwide. CERCLA and SARA also established cleanup programs for inactive and abandoned hazardous waste sites and are administered by the USEPA.

The Commonwealth of Virginia has adopted USEPA Region 3 Regional Screening Levels (RSLs), issued April 2012, as the action levels for response to environmental contamination. VDEQ has adopted the USEPA Region 3 RSLs under its RCRA Corrective Action Program. RSLs are not national cleanup standards and alone do not trigger the need for response actions or define “unacceptable” levels of contaminants. Generally, at sites where contaminant concentrations fall below RSLs, no further action or study is

[19] 40 CFR Parts 240-280
[20] 40 CFR Part 260
[21] 40 CFR §261.4[b]

warranted under CERCLA. Where contaminant concentrations equal or exceed RSLs, further study or investigation is warranted, but not necessarily cleanup. Sites that support or are proposed for residential uses have stricter RSLs than those that support or are proposed for industrial uses. Remediation is required for sites with contamination concentrations that exceed USEPA Region 3 RSLs and present a human health or ecological risk for the existing or proposed use, as determined by VDEQ screening level risk assessment for RCRA corrective action (VDEQ 2013a).

Installation Restoration Program

The IRP is a comprehensive program to identify, investigate, and clean up hazardous substances, pollutants, contaminants, and petroleum, oils, and lubricants (POL).

Military Munitions Response Program (MMRP)

The MMRP addresses the potential explosives safety, health, and environmental issues caused by past DoD munitions related activities. Congress established the MMRP under the Defense Environmental Restoration Program to address UXO, discarded military munitions (DMM), and munitions constituents (MC) located on current and former defense sites. MMRP-eligible sites are where UXO, DMM, or MC are known or suspected to have been released, and the release occurred prior to September 30, 2002. Properties classified as operational military ranges, permitted munitions disposal facilities, or operating munitions storage facilities are not eligible for the MMRP (U.S. Army Environmental Command 2011).

Toxic Substances

A toxic substance means any chemical or mixture that may be harmful to the environment and to human health if inhaled, swallowed, or absorbed through the skin (USEPA 2012a). Toxic substances are regulated by the USEPA under the Toxic Substances Control Act (TSCA) of 1976. TSCA addresses the production, importation, use, and disposal of specific chemicals including asbestos, lead-based paint, polychlorinated biphenyls (PCBs), and radon.

Asbestos is a common constituent of building materials manufactured prior to 1978 when a federal ban on its use in building materials became effective. Asbestos-containing materials (ACMs) are defined as any material containing more than 1% asbestos. ACMs may be contained in plaster, acoustic ceiling tiles, wallboard, and floor tiles/carpeting mastic, and asbestos particles may be present in building ductwork. ACMs have been classified as HAP by the USEPA, in accordance with Section 112 of the CAA (40 CFR Part 61). BRAC policy defines an ACM to be a hazard when it is friable, accessible, and damaged.

Lead-based paint (LBP) may also be present in buildings or other facilities that would be demolished as part of the Proposed Action. Lead is a common constituent of paint manufactured prior to 1980 when the federal ban on lead paint became fully effective. Any building or portion thereof that was constructed prior to 1980 may contain LBP. Porches, door jams, and window casings are areas where lead paint is commonly found, especially on historic structures.

Based on federal regulations, a LBP hazard exists when one or more of the following conditions exist:

- LBP on a component is deteriorated
- Lead in floor dust wipe samples equals or exceeds 40 micrograms per square foot (µg/sf)
- Lead in interior window sill dust wipe samples equals or exceeds 250 µg/sf

- Lead in window trough samples equals or exceeds 400 µg/sf
- Lead in bare soil play area samples equals or exceeds 400 part per million (ppm)
- Lead in bare soil samples equals or exceeds 1,200 ppm as a yard average

LBP is considered hazardous if lead is detected at concentrations greater than 5 milligrams per liter (mg/l) using the USEPA-approved Toxicity Characteristic Leaching Procedure methodology.

PCBs are common constituents of oils used as dielectric fluids or coolants in electrical equipment manufactured prior to 1979 when a federal ban of the manufacture of PCBs became effective. Although banning their manufacture, the USEPA allowed equipment containing PCBs to remain in use for the remainder of their useful lives. Therefore, PCB-containing electrical equipment (e.g., transformers, capacitors, compressors, etc.) may be present in buildings or other facilities that would be demolished as part of the Proposed Action. PCBs may also be in the capacitors of fluorescent light ballasts, especially any manufactured prior to 1979. Older waste and hydraulic oils may also contain PCBs.

Radon is a carcinogenic, radioactive gas that is generated by the natural decay of uranium, a common soil constituent. Radon vaporizes through the ground to the air above and can accumulate in structures through cracks and other holes in the foundation. The average indoor radon level is estimated to be about 1.3 picocuries per liter (pCi/L), and about 0.4 pCi/L of radon is normally found in the outside air. The U.S. Congress has set a long-term goal that indoor radon levels be no more than outdoor levels.

3.2.11.2 Existing Hazardous Substances Potential

Due to the varying levels of current and historic usage of each of the study area parcels, hazardous substances are discussed individually in the following section. Phase I environmental site assessments (ESAs) were performed within the study area in accordance with ASTM standard E-1527-05. The ESAs determine whether recognized environmental conditions exist that indicate the presence or likely presence of hazardous substances or petroleum products. The ESAs also determine if existing conditions indicate a release, past release, or a material threat of a release of hazardous substances or petroleum products into structures on the properties or into the ground, groundwater, or surface water of the properties. Where recognized environmental conditions were found, subsequent Phase II ESAs were performed to determine whether contamination is present and whether contaminant levels require remedial action. Where contamination was detected follow up environment assessment investigations were performed to delineate the release area (Cardno TEC 2013b).

Parcel 21/20

Hazardous Materials and Wastes

Parcel 21/20 is largely comprised of forested areas containing access roads to adjacent firing areas and has no extensive history of development. Two former landfills and a gasoline pipeline are located adjacent to the parcel boundary.

Former Underground Gasoline Pipeline: The Phase I ESA identified an underground gasoline distribution system occurring on Parcel 21/20. Mapping depicting the location of the pipeline was reviewed. The distribution system was constructed in the 1940s to serve nine fueling stations throughout Fort Pickett and was flushed with water and “abandoned” in 1999.

According to the ESA, seven locations along the pipeline showed evidence of petroleum contamination based on laboratory analysis of soil samples (**Figure 3.2-17**). Two of these locations appeared to be on the Parcel 21/20 western boundary along Dearing Avenue between East 16th Streets and Hospital Road. According to Fort Pickett Department of Public Works, the pipeline is located on the eastern side of Dearing Avenue, approximately 2 to 5 feet from the road (VaARNG 2014b). Available records do not indicate that follow-up actions have been taken at these locations. In a letter dated February 1, 2000, the USEPA recommended that the site history of the pipeline be further investigated to delineate all areas of contamination (Schnabel Engineering 2010).

Soil and groundwater investigation of the pipeline was not permitted along Dearing Avenue. Evidence regarding the decommissioning of the pipeline on the Grid Parcel and LRA Parcel 9, obtained during Phase II ESAs and follow up investigations documented in *Report of Follow up Environment Assessment Work for LRA Parcels 9 and 10, Grid Parcel, and Parcel 21/20* (Cardno TEC 2013a), indicates that all known pipeline releases have been remediated. Therefore, it seems reasonable to assume the releases along Dearing Avenue at the boundary of Parcel 21/20 were also remediated; however, without further investigation or documentation, the possibility of pipeline associated contamination on the boundary of Parcel 21/20 cannot be eliminated completely. The Phase III ESA Risk Management and Remediation Plan prepared for the proposed project sites recommends that if ground disturbing construction is planned for this area, sampling of the pipeline in the area to be disturbed should be conducted well in advance of construction activities to ensure there is no residual contamination that has not been previously addressed (Cardno TEC 2013b).

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Legend

- Parcel Boundary
- U.S. Route
- State Route
- Local Road
- EBS-13 No Excavation
- EBS-13 Fence Line
- Structures
- BCT-22 Monitoring Wells
- Existing UST
- Potential Burn Area
- PA-39
- Pipeline Release
- Verified Pipeline Location (TEC Inc. 2012)
- Reported Pipeline Location (Schnabel 2012)
- Trimble Road Landfill
- Dearing Road Landfill
- BCT-22
- EBS-13

Source: ESRI 2014; Fort Picket GIS; Schnabel Phase II ESA

Figure 3.2-17. Reported and Existing Hazardous Materials Release Sites

U.S. General Services Administration
Environmental Impact Statement
FASTC Nottoway County, VA

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Trimble Road Landfill: A closed landfill located on Trimble Road, adjacent to the central area of Parcel 21/20 (**Figure 3.2-17**), is currently in a monitoring program. The Trimble Landfill is excluded from the proposed project site on Parcel 21/20 and will remain under the control of VaARNG. The landfill is permitted through VDEQ as Solid Waste Permit SWP-333; however, VDEQ records are limited only to the existence of the landfill. Discussions with Fort Pickett environmental personnel revealed that monitoring wells have been placed to monitor a groundwater plume emanating from the landfill. As a result of ongoing coordination with VDEQ, additional monitoring wells have recently been installed in a clustered arrangement to monitor the expansion of the plume. To date, VDEQ has not yet approved the proposed monitoring plan; however, the typical requirement for extended long-term monitoring of groundwater could be as long as 30 years.

The most recent groundwater monitoring data was reviewed from semiannual sampling events in 2006 through December 2011 as part of the 2012 Phase II ESA. The results indicated that the Virginia Groundwater Protection Standards have been exceeded for a number of chemical constituents: arsenic, beryllium, BHC, benzene, cadmium, cobalt, 1, 1-dichloroethane (1, 1-DCA), methylene chloride, tetrachloroethylene, vinyl chloride, and trichloroethylene. The plume of contaminants has become larger and now extends beyond the currently defined landfill boundary. Concentrations of cobalt and tetrachloroethene in wells approximately 200 feet outside the boundary have exceeded the Groundwater Protection Standards (Schnabel Engineering 2012b). The landfill and the plume are excluded from the Parcel 21/20 proposed site boundary.

It is reported that VaARNG will be conducting some form of remediation of the groundwater in order to meet the Groundwater Protection Standards by 2024 (Schnabel Engineering 2012b).

Dearing Avenue Landfill: This landfill is an older, closed landfill located just outside of the southern boundary of Parcel 21/20 (**Figure 3.2-17**). It was permitted in 1978 and the permit was terminated in 1982. The depth and contents of the landfill are unknown and, because the landfill permit was terminated prior to 1988, it does not receive any regulatory oversight by VDEQ. Groundwater monitoring wells have been installed at the landfill but, to date, no groundwater sampling has been conducted. Sampling of nearby surface waters was undertaken in 1997 and no measurable contamination was found. The landfill is separated from the Parcel 21/20 by a stream drainage divide. A Phase I ESA has determined that this landfill is sufficiently distant from Parcel 21/20 that it would not pose a health risk to FASTC operations.

Potential Ordnance/Explosives Burn/Disposal Area: The Phase I ESA identified a small "potential ordnance/explosives burn/disposal" area located at the northernmost portion of Parcel 21/20 (**Figure 3.2-17**). This area was initially identified by the USACE in a 1997 Army Ordnance and Explosives Chemical Warfare Materials, Archives Search Report. No specific information was available, but the site is believed to be located near the intersection of the Butterwood Road tank trail and Trainfire Road.

If the area was used to burn/dispose ordnance/explosives, then some hazardous constituents may exist in subsurface soils and groundwater in this area. Munitions that may have been disposed of at this site include detonators, blasting caps, fuses, primers, squibs, bulk high explosives, demolition charges, and pyrotechnics (flares, signals, simulators, etc.). These items present a potential explosive hazard and risk to human health. Potential current/future human contact or exposure to this potential explosive hazard

could occur through excavation activities or eventual exposure at the ground surface due to natural migration of the items upward from frost heave or erosion processes. Chemical constituents from these materials, such as heavy metals, may leach into groundwater. The Phase II ESA determined the risk to human health for FASTC is low and recommended that GSA avoid disturbance of this area or conduct further investigation for any contaminants in the near surface soils (Schnabel Engineering 2012b).

No additional information regarding this site was obtained during follow up environment assessment investigations conducted in December 2012 (Cardno TEC 2013a). Soil and groundwater investigations have not been authorized on Parcel 21/20; therefore, the presence of this site and any associated contamination could not be confirmed or eliminated.

IRP and MMRP Sites: No IRP or MMRP sites are known to occur on Parcel 21/20. Parcel 21/20 has a long history of supporting live fire training that has resulted in the potential for UXO, MC, and DMM to be present throughout the site. A recent archaeological investigation of the property uncovered MC such as small arms shell casings, shell and bullet fragments, and magazines on the parcel. Small arms munitions are not considered UXO as defined by DoD (DoD 2010).

Toxic Substances

Parcel 21/20 does not contain any structures and, thus, would not contain any toxic substances. Nottoway County is classified by the USEPA as having a predicted average indoor radon screening level greater than 4 pCi/L; therefore, there is potential for radon levels on Parcel 21/20 above the USEPA Action level, or level requiring radon treatment.

Grid Parcel

The Grid Parcel was historically developed as part of the Fort Pickett combat training facility and contained approximately 134 structures used as barracks, dining facilities, recreation areas, and vehicle repair facilities. The majority of these structures were demolished in the mid-1970s and in 2012.

Hazardous Materials and Wastes

According the Phase I ESA conducted on the site, there are no RCRA large quantity, small quantity or conditionally exempt small quantity generators of hazardous waste located on the Grid Parcel, nor are there any RCRA non-generators or hazardous waste treatment, storage, and disposal facilities. Follow up environment assessment investigations were conducted on the parcel in December 2012 and no contamination from historic uses was found on the site that warranted further investigation (Cardno TEC 2013a). The follow up environment assessment investigations included excavation, soil borings, and surficial soil sampling.

Former Underground Gasoline Pipeline: An underground gasoline distribution system was identified on the Grid Parcel along 14th Street and Dearing Avenue. While several areas of petroleum contamination have been noted along this pipeline, none are located on the Grid Parcel in the 1999 pipeline abandonment document (U.S. Army 1999) or in the 1997 pipeline investigation report (Weston 1997). However, a Phase I ESA conducted in 2010 for the adjacent LRA Parcel 9 depicted a pipeline release on this parcel (Schnabel Engineering 2010) (**Figure 3.2-17**). In a letter dated February 1, 2000, the USEPA recommended that the pipeline be further investigated to delineate all areas of contamination. In

December 2012, follow up environment assessment investigations were (conducted on the parcel Cardno TEC 2013a). As part of the ESA, the pipeline on the Grid Parcel was excavated; the surrounding soil was field surveyed for contamination using a hand held photoionization detector; and soil samples were collected in all locations where contamination was suspected. The excavation of the pipeline revealed that the actual pipeline location on the Grid Parcel was to the south of the location reported in the Phase I ESA. The actual location of the gasoline pipeline on the Grid Parcel was recorded in the field with a GPS unit and is depicted on **Figure 3.2-17**). Laboratory analyses of the submitted soil samples detected trace levels of volatile organic compounds (VOCs) and lead in the collected samples. All of the detections were well below USEPA Region 3 residential RSLs and soils along the pipeline are not considered to pose an environmental risk.

USTs/ASTs: All of the approximately 134 buildings formerly located on the Grid Parcel were equipped with USTs used for the storage of heating oil. In the 1970s, most of the buildings on the Grid Parcel were demolished. The USTs for the buildings were reportedly removed as part of the demolition. The remaining buildings on the Grid Parcel were converted to ASTs in the mid-1990s (Schnabel Engineering 2012c). Those buildings were demolished in 2012 and their associated ASTs were removed as part of the demolition.

Information obtained as part of the Phase I ESA indicated that petroleum releases had occurred at the USTs/ASTs formerly located at Buildings 1319 and 1351 (on the Grid Parcel) and at Buildings 564, 761, 1306, 1307, and 1311 (adjacent to the Grid Parcel). As a result, these areas were identified as being potentially contaminated with petroleum. Documentation obtained from VDEQ for Buildings 1319 and 1351 indicate that no further action is required. Copies of this documentation are contained in **Appendix C**. Upon further investigation, it was determined that the adjacent UST/AST locations (Buildings 564, 761, 1306, 1307, and 1311) were prohibitively distant from and/or down gradient to the FASTC parcels and were not likely to affect site conditions. These sites were eliminated from further consideration.

The lack of closure documentation for many of the former USTs on the site presented a substantial data gap (Schnabel Engineering 2012c). Magnetometer surveys were conducted on the Grid Parcel to locate undocumented USTs that may exist on the site. The magnetometer surveys did not detect any USTs or other large metallic anomalies on the parcel that would indicate the possible presence of a UST.

Twenty soil samples were collected in areas where historic buildings were located to determine whether residual contamination was present in the soil from historic USTs. Trace levels of VOCs were detected in several of the soil samples. All of the detections were well below USEPA Region 3 residential RSLs and are not considered to pose an environmental risk.

Groundwater Contamination: The 2012 Phase I ESA conducted on the Grid Parcel indicated that elevated levels of bis(2-ethylhexyl)phthalate were detected in groundwater samples collected in 2003 at Building 767 (site identification PA-39) (**Figure 3.2-17**). The report indicated that the groundwater contamination presented unacceptable carcinogenic risks associated with ingestion of this water. Based on these findings, and the proximity to the Grid Parcel, this offsite adjacent groundwater contamination was considered a recognized environmental condition as defined in ASTM 1527-05. Subsequent groundwater analyses were performed on the Grid Parcel during the December 2012 follow up environment assessment investigations to determine whether activities at Building 767 had affected

groundwater on the Grid Parcel (Cardno TEC 2013a). Groundwater samples were collected from six discrete locations on the Grid Parcel adjacent to Building 767 and analyzed for bis(2-ethylhexyl)phthalate. This contaminant was not detected in any of the groundwater samples.

IRP and MMRP Sites: No active IRP or MMRP sites are present on the Grid Parcel. In a 2006 report to Congress, the DoD reported that no MMRP sites were located on the property to be conveyed to LRA under BRAC and that all restoration remedies were in place at Fort Pickett.

Toxic Substances

The Grid Parcel does not currently contain any structures. The last remaining structures on the parcel were demolished in 2012. Since it is likely that these structures contained LBP and/or ACM and no documentation of their removal or disposal was available for review, site soils were tested as part of the December 2012 follow up environmental assessment investigations (Cardno TEC 2013a). Five surficial soils samples were collected and submitted for lead analysis. Elevated lead concentrations were detected in all the surficial soil samples. All of the detections were well below USEPA Region 3 residential RSLs and are not considered to pose an environmental risk.

An additional five surficial soil samples were collected on the Grid Parcel as part of the December 2012 follow up environment assessment investigations and were analyzed for asbestos. Asbestos was not detected in any of the soil samples (Cardno TEC 2013a).

Nottoway County is classified by the USEPA as having a predicted average indoor radon screening level greater than 4 pCi/L; therefore, there is potential for radon levels on the Grid Parcel above the USEPA Action level.

LRA Parcel 9

Hazardous Materials and Wastes

Various hazardous materials are currently used by LRA Parcel 9 tenants and are stored in small quantities at various locations on the site. The majority of these materials are small volumes of containerized products such as pesticides, herbicides, paints, solvents, and petroleum products. A paint booth was also noted inside a former arts and crafts building at 326 Armistead Avenue (Schnabel Engineering 2010).

USTs/ASTs: Two 1,000-gallon USTs and several ASTs are documented as being present on LRA Parcel 9 (**Table 3.2-29**) (Schnabel Engineering 2010). VDEQ does not have any files associated with these USTs, and the USTs appear to precede the date of property transfer to Nottoway County. All of the ASTs on the parcel were inspected as part of a Phase I ESA and no evidence of leaks or spills was observed (Schnabel Engineering 2010).

Table 3.2-29. LRA Parcel 9 AST/UST Information

Bldg	Current Tenant	AST/UST	Contents
Garnett Avenue			
261	Residence	AST	Home Heating Oil
507	SEC	AST	Home Heating Oil
553	Team Legacy	UST	Home Heating Oil (1,000 gal)
583	Strategic Ops	AST(2)	Home Heating Oil/unknown
667	Robert Thacker (stg)	-	-
697	R & L Mohr Inc	UST	Home Heating Oil (1,000 gal)
800	Cottage - R. Byler	AST	Home Heating Oil
802	Cottage - F. Bias	AST	Home Heating Oil
804	Cottage - K. McCluskey	AST	Home Heating Oil
838	House - P. Alston	AST	Home Heating Oil
1100	Structural Concepts	AST	Home Heating Oil
Armistead Avenue			
120	Boiler Thermal Services	AST (2)	Home Heating Oil[1]/Diesel
326	Robert Thacker (stg)/TOB (stg)	-	-
1112	DRS C3 & Aviation Company	-	-
1152	LAS Solutions	-	-
West Parade Avenue			
132	Nottoway County Storage	Unknown	Unknown
873	UAV PRO	Unknown	Unknown
1125	SCVP	Unknown	Unknown
East Parade Avenue			
396	USACE	AST	Home Heating Oil
730	Pickett Park Lodge (overflow)	AST	Home Heating Oil
786	Cottage - P. Hendrickson	AST	Home Heating Oil
West 10th Street			
964	Rocky Hill Contracting - storage	AST	Home Heating Oil
980	Vacant		
994	Vacant	AST	Home Heating Oil
1006	Vacant		

Source: *Schnabel Engineering 2010.*
Notes: *[1]Home heating oil AST has underground piping*

The two existing USTs at 553 Garnett Avenue and 697 Garnett Avenue (**Figure 3.2-17**) were tested for tank tightness on April 17, 2012 as part of a Phase II ESA. The tests indicated that both tanks were tight with test results that passed the criteria set forth by USEPA. At each of the existing USTs, a Geoprobe boring was also advanced immediately adjacent to the tank to check for potential petroleum contamination in the soils and groundwater (if encountered). Of the four borings, only one contained

groundwater. The samples were submitted to an USEPA-approved laboratory for analysis and the test results for all soil and groundwater samples were "non-detect" for all analytes (Schnabel Engineering 2012b).

Although the Phase II ESA revealed no releases from USTs currently on LRA Parcel 9, records associated with USTs on the parcel were not available for review. There is a potential for residual petroleum contamination from other previously removed USTs on the parcel (Schnabel Engineering 2012b). A subsequent follow up environment assessment investigation was performed on LRA Parcel 9 in December 2012 that included the collection of twenty soil samples from the areas where buildings were historically located (Cardno TEC 2013a). Trace levels of VOCs were detected in several of the samples. All of the detections were well below USEPA Region 3 residential RSLs and are not considered to pose an environmental risk.

Magnetometer surveys were conducted on the Grid Parcel to locate undocumented USTs that may exist on the site. The magnetometer surveys did not detect any USTs or other large metallic anomalies on the parcel that would indicate the possible presence of a UST.

A new release on LRA Parcel 9 was discovered and delineated at Building 1100 during the follow up environment assessment investigations conducted in December 2012 (**Figure 3.2-17**). This release is associated with a small AST and is minimal. According to the Phase I ESA conducted on the site, there are no RCRA large quantity, small quantity, or conditionally exempt small quantity generators of hazardous waste located on LRA Parcel 9 nor are there any RCRA non-generators or hazardous waste treatment storage and disposal facilities. Three unlabeled 50-gallon drums were noted on the property at 507 Garnett Avenue and were believed to contain soils associated with the environmental investigation conducted at site EBS 115. These drums were not observed during the 2012 follow up environmental assessment investigations and are assumed to have been removed (Cardno TEC 2013a).

Former Underground Gasoline Pipeline: An underground gasoline distribution system was identified on LRA Parcel 9. At least one location along the pipeline with evidence of petroleum was noted on this parcel (**Figure 3.2-17**). Available records do not indicate that follow-up actions have been taken at this location and additional areas of petroleum contamination may exist. In a letter dated February 1, 2000, the USEPA recommended that the site history of the pipeline be further investigated to delineate all areas of contamination (Schnabel Engineering 2010).

In April 2012, additional sampling was conducted along the pipeline route as part of a Phase II ESA. Seven locations were investigated via soil and groundwater sampling, including the site of reported residual contamination (Schnabel Engineering 2012a). Volatile and semivolatile organic compounds and total petroleum hydrocarbons were not detected in any of the soil and groundwater samples. The only metals detected in soil (arsenic, barium, and chromium) were below the USEPA RSLs except for arsenic; however, the arsenic levels of 0.07 to 3.6 milligrams per kilogram are within the range of naturally occurring arsenic and therefore not a concern. The metals detected in the groundwater samples (barium and mercury) were below the RSLs (Schnabel Engineering 2012a).

Similar to the Grid Parcel, the pipeline on LRA Parcel 9 was investigated during the December 2012 follow up environment assessment investigations (Cardno TEC 2013a). The pipeline was excavated; the

surrounding soil was surveyed for contamination using a hand held photoionization detector; and soil samples were collected in all locations where contamination was suspected. Laboratory analyses of the submitted soils samples detected trace levels of VOCs and lead in the collected samples. All of the detections were well below USEPA Region 3 residential RSLs and are not considered to pose an environmental risk.

Access into EBS 13 for pipeline excavation was not permitted and no pipeline samples were collected in this area (**Figure 3.2-17**). EBS 13 is a former Installation Restoration site and has been subject to extensive environmental investigations including soil and groundwater sampling and test pit excavations. The remedial investigations conducted at EBS 13 did not identify contamination attributed to the pipeline and a need for remedial actions along the pipeline was not identified (Tetra Tech 2005). A Finding of Suitability to Transfer was issued for the property in 2005 (U.S. Army 2005) and in 2010 a CERCLA Five Year Review (Tetra Tech 2010) of the site determined that all contamination source removal actions were sufficient and that no additional five-year reviews are required for the EBS 13 site. Therefore, this portion of the pipeline is not considered to present an environmental risk.

Environmental Baseline Survey Site 13 (EBS 13): Based on a July 2010 document, Final Five Year Review for EBS 13 (Tetra Tech 2010), remediation at a former Salvage Yard in the northern border of LRA Parcel 9 (**Figure 3.2-17**) has been successful in removing contaminants from the soil and groundwater. EBS 13 was used as a recycling facility from the late 1940s through the 1960s. The facility stored used automobiles, metal containers, crates, and debris. During the late 1960s and early 1970s the site was also used as a burial site for demolition debris, scrap metal, and possibly paints, solvents, and petroleum based products.

After remedial actions were conducted, land use controls were implemented to address the remaining contaminants that were not treated by remediation. According to the deed for the property, the 31-acre site is divided into two areas with specific land use restrictions; an 18-acre area and, within the 18-acre area, a 4-acre area (**Figure 3.2-17**). The majority of the 18-acre area is currently secured with a fence and posted with warning signage indicating the presence of materials potentially presenting an explosive hazard (MPPEH). This area has land use restrictions that prohibit groundwater contact and residential use. Within the fenced portion of the site, a 4-acre area has an additional land use restriction prohibiting excavation. This area should not be disturbed and remain “as-is” indefinitely. Warning signage must be maintained around the 4-acre area to prevent access. GSA is currently pursuing documentation on the future regulatory status of the fence around the 18-acre portion of the site.

Former Fuel Station Site BCT-22: According to a May 2009 Final Long-Term Monitoring Report (Weston 2009) a Remedial Assessment was conducted in 2003 at the BCT-22 site, located adjacent to the northwest portion of LRA Parcel 9 (**Figure 3.2-17**). The report found soils to be contaminated that did not pose a health risk based on USEPA standards; however, groundwater was found to contain benzene, MTBE, and chloroform.

Subsequent sampling in 2009 revealed substantial contamination remaining in the groundwater beneath the site and in situ treatment of the contamination led to significant decreases in their concentrations. Elevated levels of contaminants are still present in the groundwater and further remediation was recommended. To date further remediation has not occurred and there are currently no land use

controls in place for BCT-22. According to deeds for this parcel, the U.S. Army has retained responsibility for environmental contamination on the property (Schnabel Engineering 2010).

Groundwater samples were collected on April 19, 2012 as part of a Phase II ESA from existing monitoring wells BCT-MW-2, MW-7, and MW-14 (**Figure 3.2-17**). The results of the chemical analyses of these samples were compared with the most recent sampling performed by Weston (Weston Solutions 2009 in Schnabel Engineering 2012a). The primary chemicals of concern from the 2009 sampling were benzene, ethylbenzene, and naphthalene, which were above the USEPA RSLs in a number of the wells in 2009. MTBE was also detected at a level above the USEPA screening levels (Schnabel Engineering 2012a).

Changes in the wells located downstream from the BCT-22 source from 2009 to 2012 include:

- In MW-7, located outside the LRA Parcel boundary, chloroform increased from non-detect to 3.6 micrograms per liter (µg/L). Carbon tetrachloride increased from no detections (non-detect) to 2.2 µg/L. Benzene, ethylbenzene, naphthalene, and MTBE remained non-detect.
- In MW-14, located just inside the LRA Parcel 9 boundary, MTBE increased from 100 µg/L to 140 µg/L. Benzene, ethylbenzene, and naphthalene remained non-detect.
- In MW-16, all chemicals were non-detect in 2009. The well could not be located for the 2012 Phase II investigation and therefore could not be sampled.

These results indicated that the primary chemicals of concern (benzene, ethylbenzene, and naphthalene) have not migrated onto LRA Parcel 9 at MW-14. However, the MTBE concentration in MW-14 showed a slight increase from 2009 to 2012.

The follow up environment assessment investigations conducted in December 2012 (Cardno TEC 2013a) succeeded in locating monitoring well BCT-MW-16 (**Figure 3.2-17**), and one groundwater grab sample was collected for laboratory analysis. No contamination was detected in the groundwater sample. The continued presence of MTBE in MW-14 confirms that the BCT-22 plume has entered LRA Parcel 9 at the western boundary, but the plume has not extended into the groundwater farther east in the parcel at BCT-MW-16. No groundwater wells or buildings are proposed in the areas down gradient of the plume and associated health risks are considered to be low.

Existing Gasoline Station: A gas station is located on the southern boundary of LRA Parcel 9 approximately 400 feet east of the East Parade Avenue and Military Road intersection (**Figure 3.2-17**). The gas station is reportedly not operational; however, USTs may still be present on the site. VDEQ was contacted on December 10, 2010 for information regarding the gasoline station USTs and no files were found (Schnabel Engineering 2010). Three groundwater grab samples were collected on LRA Parcel 9 from locations adjacent to the gasoline station during the December 2012 follow up environment assessment investigations and were submitted for laboratory analysis. No contamination was detected in any of the groundwater samples. Magnetometer surveys did not indicate the presence of USTs at the gasoline station (Cardno TEC 2013a). The site appeared to have recently undergone remedial activities as areas of soil disturbance were observed next to the structure.

IRP and MMRP Sites: No active IRP or MMRP sites are present on LRA Parcel 9. In a 2006 report to Congress, the DoD reported that no MMRP sites were located on the property to be conveyed to LRA under BRAC. The report stated that all restoration remedies were in place at Fort Pickett, and the U.S. Army would continue to operate and maintain monitoring systems at EBS 13.

Toxic Substances

Lead Based Paint: According to the LBP disclosure statement in the deed for the BRAC property conveyed to Nottoway County, inclusive of LRA Parcel 9, "buildings on the property constructed or rehabilitated prior to 1978, are assumed to contain LBP." Limited lead testing has been conducted in buildings on LRA Parcel 9. An LBP inspection report was prepared by the U.S. Army in 1991 in which seven family quarters and two miscellaneous buildings were surveyed for LBP. The buildings surveyed were constructed in 1942 and 1943. Eight of the nine buildings surveyed had LBP sample test results that exceeded 0.5% lead by weight. These buildings were identified as Buildings NW100, SW101, 310, 480, 580, 1284, 2538, and 4072. All surfaces containing LBP were determined to be in poor condition and abatement was recommended as soon as possible (Woodward-Clyde 1997). Building 1284 is currently located on LRA Parcel 9 (838 Garnett Avenue) and no lead abatement information was obtained for this building.

Fort Pickett has three elevated water storage towers (identified as 250, 1200, and 2460), one of which is located on LRA Parcel 9 (**Figure 3.2-17**). The water towers were sandblasted and repainted in 1987 and 1988. LBP was used to repaint the towers because of its durability; the previous paint was also lead-based. No measures were taken to collect sand or paint chips during or after repainting (Woodward-Clyde 1997). Due to the history of LBP removal using sandblasting with no collection measures, the soil under and around the water towers was tested during the follow up environment assessment investigations conducted in December 2012 (Cardno TEC 2013a). Five surficial soil samples were collected and submitted for lead analysis. Elevated lead concentrations were detected in soil in the southeast and northwest corners of the water tower area. Lead concentrations detected in soil collected from the southeast corner exceeded USEPA Region 3 industrial RSLs.

Additional samples were collected in the vicinity of the locations of the elevated samples to delineate any potential areas of lead contamination. The delineation samples were also tested for toxicity using the Toxicity Characteristic Leaching Procedure (TCLP) to determine whether the material would be classified as hazardous. All delineation samples were well below industrial and commercial RSLs (800 ppm) for total lead and all TCLP results were well below RCRA action concentrations of 5 ppm, indicating the material would not be classified as hazardous.

A total of twenty-two surficial soil samples were collected from within the water tower site and analyzed for lead. Of the 22, only 2 contained lead at concentrations above regulatory thresholds of 800 ppm. In consultation with VDEQ, it was determined that soil contamination at the water tower was not widespread and that the elevated lead concentrations in the sample could be attributed to paint flakes in the soil that resulted in anomalous results at specific locations (VDEQ 2013b). VDEQ determined that the average concentration of lead in site wide soils would be below industrial RSLs and the material could be reused on-site if disturbed. While remediation of the site soils would not be required, a land use restriction prohibiting residential development would have to be established**.**

Asbestos Containing Materials: Asbestos Identification Surveys were conducted at Fort Pickett in 1993 and 1994. The inspections included test results and visual observations as the basis for identifying the presence of suspected ACM. Many buildings constructed prior to 1985 and known to have contained ACM were demolished in various areas around the installation. Currently, 24 buildings remain on the parcel and ACM is assumed to be present in all. According to correspondence from the BRAC Environmental Office, an Asbestos Identification Survey was conducted on the majority of the buildings within the BRAC excess property in 1997, and ACM was identified in pipe insulation, floor tiles, floor tile mastic, transite, and roofing materials.

Buildings identified as containing asbestos in the 1997 EBS Report, and documented on LRA Parcel 9 as part of the 2010 Phase I ESA, include Buildings 1284 (838 Garnett Avenue), 671 (120 Armistead Avenue), 868 (326 Armistead Avenue), 1413 (1125 West Parade Avenue), 912 (730 East Parade Avenue), and 915 (786 East Parade Avenue) (Woodward-Clyde 1997, Schnabel Engineering 2010). Installation personnel indicated that removal of the debris subsequent to demolition may have been incomplete, and ACM may still be present in the soils in these areas. Five soil samples were collected on LRA Parcel 9 as part of the follow up environment assessment investigations conducted in December 2012 (Cardno TEC 2013a) and were analyzed for asbestos. Asbestos was not detected in any of the soil samples.

Asbestos is also reported to be present on approximately 2,000 lf of water main piping along Military Road on the western boundary of LRA Parcel 9 (personal communication VaARNG Fort Pickett 2013).

Polychlorinated Biphenyls (PCBs): According to the PCB disclosure statement in the deed for the BRAC property conveyed to Nottoway County, inclusive of LRA Parcel 9, "equipment containing PCBs at levels below actions levels may exist on the property being conveyed. This equipment is operational, properly labeled in accordance with Federal and State regulations, and has been determined not to be leaking."

Radon: According to the USEPA National Radon Database, Nottoway County has a Zone 1 radon level. Zone 1 radon levels have indoor radon levels of greater than 4 pCi/L; therefore, there is potential for radon levels on LRA Parcel 9 above the USEPA Action level.

Radon testing on LRA Parcel 9 was conducted in the spring of 1989. One to four radon measurement devices were placed in 255 buildings and exposed for approximately 90 days. A review of test results for the 255 buildings identified three buildings or devices that had test results higher than 4 pCi/L; Buildings NW100, SW101, and 1283. Building 1283 is located on LRA Parcel 9 (804 Garnett Avenue) (Woodward-Clyde 1997).

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter presents an analysis of the potential direct and indirect impacts of the Proposed Action upon the environment described in Chapter 3. Cumulative impacts are analyzed in Chapter 5. The impact analysis is based on and incorporates the analyses presented in the 2012 Draft Environmental Impact Statement (EIS), while focusing on new information about the proposed project. The impact analysis presented below is also summarized in **Table 2.4.1** in Chapter 2.

4.1 NATURAL ENVIRONMENT

4.1.1 Climate

Over the past century, human activities have released large amounts of carbon dioxide and other greenhouse gases (GHGs) into the atmosphere. The majority of GHGs come from burning fossil fuels to produce energy, although deforestation, industrial processes, and some agricultural practices also emit gases into the atmosphere.

GHGs act like a blanket around Earth, trapping energy in the atmosphere and causing it to warm. This phenomenon is called the greenhouse effect and is natural and necessary to support life on Earth. However, the buildup of GHGs can change Earth's climate and result in dangerous effects to human health and welfare and to ecosystems. The term “climate change” refers to any significant change in the measures of climate lasting for an extended period of time. Thus, in order to have a significant impact on climate, a project would have to result in one or more changes in climate lasting for an extended period of time.

4.1.1.1 Build Alternative 3

The construction and operation of the Foreign Affairs Security Training Center (FASTC) facility would result in direct temporary and long-term emissions of GHGs that contribute to climate change. GHGs are measured as carbon dioxide equivalent (CO_2e) emissions. The yearly estimates for operational CO_2e are 8,131 tonnes. In comparison, the 2012 United States (U.S.) GHG Inventory Report (USEPA 2014) estimates total CO_2e emissions at 5,546.3 $X10^6$. The GHG emissions estimated for FASTC operations represent one ten thousandths of a percent. Emissions of GHGs from the Build Alternative 3 alone would not cause appreciable global warming that would lead to climate changes. However, these emissions would increase the atmosphere’s concentration of GHGs and, contribute incrementally to the global warming that produces the adverse effects of climate change. At present, no methodology exists that would enable estimating the specific impacts (if any) that this increment of warming would produce locally or globally.

4.1.1.2 No Action Alternative

Under the No Action Alternative the FASTC facilities would not be constructed and there would be no impacts related to climate.

4.1.1.3 Mitigation

Incorporation of Leadership in Environmental and Energy Design (LEED) Silver standards into the design of the two largest buildings planned for the FASTC Core Area (A01 and T01) would improve building energy efficiency. As a result, GHG emissions associated with energy use would be reduced as compared to non-LEED certified buildings built to general construction standard specifications.

4.1.2 Topography

An impact to topography would be considered significant if the action would substantially alter or remove prominent geologic features, or if actions were to result in a permanent alteration to area drainage patterns and associated groundwater recharge.

4.1.2.1 Build Alternative 3

Minor direct topographical changes are anticipated on Parcel 21/20, the Grid Parcel, and Local Redevelopment Authority (LRA) Parcel 9 to accommodate the proposed development of the FASTC facility. Extensive grading and filling would occur during site preparation for the various buildings and structures needed for FASTC training activities. Grading and filling activities would not require blasting nor would it result in changes in area drainage patterns. The importation or offsite disposal of soil would not be required. No indirect impacts to topography are anticipated. Therefore, Build Alternative 3 would have no significant impacts on topography.

4.1.2.2 No Action Alternative

Under the No Action Alternative, the FASTC facility would not be constructed; therefore, there would be no impact on topography.

4.1.2.3 Mitigation

Grading and filling impacts would be minimized during the design process to the extent feasible. No other mitigation measures were identified.

4.1.3 Geology and Soils

For geology and soils, an impact to geologic resources would be considered significant if the action would have the potential to:

- Alter the landscape and affect geologic features (including rock or soil removal and filling that would adversely affect site drainage)
- Increase the rate of erosion and soil loss from physical disturbance
- Diminish slope stability
- Convert high value farmland subject to the Farmland Protection Policy Act (FPPA)

4.1.3.1 Build Alternative 3

<u>Geology</u>

Substantial amounts of grading, excavating, and leveling are anticipated during the construction of the FASTC facility. No blasting or excavation of bedrock that would alter the geology of the study area is anticipated. No multistoried or otherwise heavy load bearing structures are proposed to be constructed

over the diabase dike that intersects Parcel 21/20. Diabase is volcanic bedrock that is difficult to excavate. The Post-Blast Training Range (E03) may intersect this geologic formation. The blast pad itself would measure 400 feet by 400 feet and have a sifted sand base. The post blast recovery pad would be 100 feet in diameter and constructed of 6-inch thick asphalt, and would be located behind the square demonstration pad. These structures are not anticipated to require excavation in excess of 10 feet or blasting to install. A diabase dike bisects the Grid Parcel; however, this parcel was previously developed and proposed new structures are generally located in areas where previously existing structures were located. Therefore, it is not likely the dike would be encountered during the construction of the new structures. As a result, the proposed development of the parcels would not directly or indirectly result in substantial changes in geology. Therefore, impacts to geology under Build Alternative 3 would not be significant.

Soils

Construction of the FASTC elements would have a direct impact on study area soils (Parcel 21/20, the Grid Parcel, and LRA Parcel 9) as a result of temporary disturbance from construction activities. Existing structures, relict foundations, utilities and drainage structures, and some road surfaces within the building area would be removed and replaced with compacted structural fill, as required, prior to construction activities. In total, construction would disturb 468 acres of ground surfaces. No importation of soils or off-site disposal of soils is anticipated. Excavation of materials unsuitable for construction would be performed in a manner to limit disturbance of the underlying suitable material. On-site soils that do not meet the criteria for structural fill would be used in landscape areas. Soil would be either excavated or used as fill, backfill, or landscape material for the construction of the FASTC facility. The area of soils to be disturbed would total 400 acres under Build Alternative 3.

The off-road tracks located on LRA Parcel 9 would require water to enable wet weather driving conditions at all times and to minimize the generation of fugitive dust. Fugitive dust is defined as atmospheric dust resulting from both natural causes and man's disturbance of soil and other granular material. The off-road tracks would be designed with best management practices (BMPs) to prevent soil erosion and vegetative buffers to provide soil stability on the side of the tracks and to minimize the dispersion of fugitive dust.

In accordance with the Clean Water Act (CWA) and the Virginia Erosion and Sediment Control Program, all regulated land disturbance (i.e., disturbance in excess of 10,000 square feet) must be conducted in compliance with the minimum standards outlined in the Virginia Erosion and Sediment Control Regulations. These standards outline the minimum soil erosion and sedimentation control measures that would be employed during construction. Compliance with the program would minimize indirect impacts to soil from erosion and sedimentation. Therefore, direct and indirect impacts to soils would not be significant.

Prime Farmland

Build Alternative 3 would directly impact approximately 46 acres of prime farmland soils on Parcel 21/20, 39 acres on the Grid Parcel, and 280 acres on LRA Parcel 9. To determine if the Proposed Action would impact prime farmland protected under the FPPA, a Farmland Conversion Impact Rating Form

(AD1006) was completed for the 2012 Draft EIS, resulting in a score of 36 out of 160 for the Site Assessment Criteria. The form was submitted to the Natural Resources Conservation Service (NRCS) for evaluation. NRCS responded with a completed form, which is included in **Appendix C**. Because impacts to prime farmland soil have not changed substantially from the impacts assessed previously, the 2012 evaluation is still valid and will be incorporated as the impact analysis for Build Alternative 3. NRCS scored Parcel 21/20 at 71.9 out of 100 for the relative value of the farmland soils to be converted. The Grid Parcel was not scored because NRCS considers it already converted. LRA Parcel 9 was given a rating of 70.8. Thus, Parcel 21/20 had a total score of 107.9, and LRA Parcel 9 had a total score of 106.8. Scores below 160 do not require further review under the FPPA. As a result, Build Alternative 3 would not require further review and would not have significant impacts on prime farmland.

4.1.3.2 No Action Alternative

Under the No Action Alternative, the FASTC facility would not be constructed; therefore, there would be no impact on geology, soils, or prime farmland.

4.1.3.3 Mitigation

Proposed impact minimization measures would include BMPs for erosion and dust control, such as application of water, chemicals, or gravel and other dust control measures during facility construction and operation, and during off-road/unimproved road driving exercises.

Direct and indirect impacts to soils would be minimized though compliance with the regulatory requirements outlined in the CWA (Sections 319 and 401), the Virginia Stormwater Management Program, and the Virginia Erosion and Sediment Control Program[22].

4.1.4 Water Resources

Impacts to water resources are evaluated for both temporary construction and long-term operational phases of Build Alternative 3. For construction activities, potential impacts may include stormwater discharges that may contain elevated sediment concentrations and spills or leaks of chemicals such as lubricants, fuels, or other construction materials that may increase pollutant loading in the surface water. In addition, direct construction or alteration of stream channels or wetlands may cause erosion, sedimentation, increased contamination potential, and/or wetland degradation.

Operational effects may include stormwater discharges that may increase erosion rates, the volume of sediment loading to the surface water, or contaminants from vehicle maintenance and privately owned vehicles. Contamination of surface water from leaks or spills of hazardous or otherwise regulated materials is also a potential impact during the operational phase. Increased impervious areas may increase the runoff and increase the potential for flooding. Operational effects may also include permanent loss of wetlands or groundwater recharge areas.

Under the Phase 1 storm water regulations, stormwater discharges from "industrial activities" are regulated by the Virginia Department of Environmental Quality (VDEQ)[23], and require a National

[22] 4 Virginia Administrative Code (VAC), 50-30-40
[23] 9 VAC 25-31-120 A 1 e

Pollutant Discharge Elimination System (NPDES) stormwater permit. The industries required to obtain an industrial stormwater permit are identified by Standard Industrial Classification code. Maintenance garages that are not associated with the U.S. Postal Service, vehicle manufacturing, or public transportation facilities are not included in the industries requiring the permit. Therefore, the proposed vehicle maintenance shop (D06) under Build Alternative 3 would not likely require an industrial stormwater permit, but VDEQ would make the final determination based on the facility design.

An impact to water resources is considered to be significant if it:

- Reduces availability or accessibility of water resources
- Does not comply with all applicable water quality standards, laws, and regulations
- Increases sedimentation and/or damage to water resources
- Increases the risk associated with environmental hazards or human health
- Reduces the amount of wetlands available for human use or ecological services
- Increases the risk of flooding
- Compromises a usable groundwater aquifer

4.1.4.1 Build Alternative 3

Surface Water

Construction

Nineteen stream crossings would be constructed under Build Alternative 3. Stream crossings would have direct adverse impacts on approximately 322 linear feet (lf) of streams on Parcel 21/20, 204 lf on the Grid Parcel, and 1,963 lf on LRA Parcel 9, resulting in a total of approximately 2,489 lf of stream impact or approximately 3% of all streams in the study area. Stream impacts by parcel for Build Alternative 3 are summarized in **Table 4.1-1**. Only lf of stream impacts are presented in the table. The total surface area of stream impact will be calculated during the preparation of the wetland permit application when stream assessments of impact locations will be conducted using the U.S. Army Corps of Engineers (USACE) and VDEQ Unified Stream Methodology. As part of this assessment, the surface area limits of waters of the U.S. will be surveyed.

Table 4.1-1. Stream Impacts Summary Build Alternative 3

	Existing Streams (lf)	Direct Impacts (lf) [1]
Parcel 21/20	32,620	322
Grid Parcel	3,884	204
LRA Parcel 9	27,729	1,963
TOTALS		
Build Alternative 3	77,947	**2,489**

Note: [1]*The actual acreage of streams as waters of the U.S. is included in wetland impacts in Table 4.1-2.*

Stream crossings are regulated by the USACE through CWA Section 404 and by VDEQ through Section 401 Water Quality Certification Program. Stream crossings would be designed with suitably sized

culverts or bridges, as appropriate, to maintain efficient peak flow and would be constructed to minimize stream impacts. All stream culverts would be countersunk to allow minimum flows to pass. All stream crossings are located perpendicular to the stream to minimize impacts at each location. BMPs would be employed during and after construction to minimize sedimentation and erosion and maintain the integrity of the stream bed. After construction, the crossing would be periodically inspected and maintained to prevent blockages. Construction of the FASTC facility would also require a Construction General Permit and the preparation of a Stormwater Pollution Prevention Plan (SWPPP) to minimize impacts to surface water from erosion and water pollution from surface runoff. Operators of construction activities resulting in land disturbance equal to or greater than one acre must obtain a Permit for Discharges of Stormwater from Construction Activities (Construction General Permit) in accordance with Virginia Stormwater Management Program Permit Regulations, authorized by the Virginia Stormwater Management Act in accordance with Section 402 of the federal CWA. The construction general permit requires the construction site operator to develop and implement a site specific SWPPP. The SWPPP outlines the steps and techniques the operator will implement to comply with the terms and conditions of the permit, including water quality and quantity requirements that are consistent with the Virginia Stormwater Management Act permit regulations, to reduce sediment and pollutants in the stormwater runoff from the construction site. The SWPPP also specifies all potential onsite pollutant sources that could enter stormwater leaving the construction site and covers methods used to reduce pollutants in stormwater runoff during and after construction.

Adherence to the CWA Section 401 Water Quality Certification Program and Virginia Stormwater Management Act would minimize direct and indirect impacts to surface waters from construction; therefore, impacts would not be significant.

Operation

Under Build Alternative 3, approximately 138 acres of impervious surfaces would be added to the study area as a result of Build Alternative 3 construction. This increase in impervious surfaces would result in an associated increase in stormwater discharge intensity and volume that would have the potential to indirectly impact surface water.

Build Alternative 3 would be developed in accordance with the Energy Independence and Security Act of 2007 (Section 438), which requires that stormwater runoff after site development must not exceed the predevelopment rate or volume. Specifically, “all development or redevelopment projects that exceed a 5,000 square foot footprint must use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow.”

Low Impact Development (LID) measures and stormwater BMPs would be incorporated into the facility design to minimize stormwater runoff. These measures may include the use of vegetated swales, bioretention areas, wet ponds, and enhanced extended detention areas to reduce pollutant loads and stormwater volumes. In addition, improvements to the existing stormwater management system would be included as part of Build Alternative 3. These improvements are intended to accommodate the increases in stormwater runoff associated with the increased amount of impervious surfaces and to

ensure stormwater retention would be consistent with local and federal requirements. As a result, indirect impacts to surface water from stormwater runoff would not be significant.

Groundwater

Under Build Alternative 3, construction activities on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 would include surface water protection measures that would also protect groundwater quality. By adhering to the provisions of the General Construction Permit and SWPPP, and through implementation of BMPs to address site- and activity-specific water resource protection needs, there would be a reduction in stormwater pollutant loading potential and thus a reduction in pollution loading potential to groundwater. Increases in impervious surfaces would incorporate LID and BMPs for stormwater that would promote the infiltration of stormwater and groundwater recharge. Build Alternative 3 would use publically supplied drinking water and there would be no direct or indirect impacts on groundwater quantity.

The Virginia Army National Guard (VaARNG) would continue to monitor groundwater near the Trimble Landfill. Shared access to Parcel 21/20 by the U.S. Department of State (DOS) and VaARNG would be assured through the Land Use Permit with the Department of the Army, as supplemented with a Memorandum of Agreement with VaARNG.

Therefore, construction and operational activities associated with Build Alternative 3 would have no significant impacts to groundwater.

Water Quality

Build Alternative 3 would increase the amount of petroleum, oil, and lubricants (POLs), hazardous waste, pesticides, and fertilizers being stored, transported, utilized, and disposed of at the study area. Direct and indirect impacts on water resources may result from accidental releases of these materials and stormwater runoff. Adherence to existing regulations and plans for the transport, storage, use, and disposal of these substances would reduce the potential for their release into the environment and direct and indirect impacts to water resources would not be significant. SWPPPs and Stormwater Management Plans would be prepared and implemented in accordance with the Virginia Stormwater Management Program and would identify ways to reduce the potential impacts associated with potential pollution sources, and potential erosion and sedimentation impacts, respectively. A Spill Prevention, Control, and Countermeasure (SPCC) Plan would be prepared and implemented in accordance with the Oil Pollution Act and would prevent and control potential leaks and spills of POLs. The combination of BMP/LID strategies and compliance with federal and state regulations and site-specific plans would ensure that no significant impacts to receiving water bodies would result from Build Alternative 3. Therefore, FASTC operations under Build Alternative 3 would have no significant impacts to water quality.

Wetlands

Build Alternative 3 is the result of an extensive planning process. During the alternatives development and planning process (refer to **Section 2.2.2**), multiple alternatives were created and discounted due to the potential magnitude of wetland and stream encroachments. The alternatives development

incorporated a 100-foot buffer zone on either side of wetlands and streams as an area to be avoided to the maximum extent practicable. All the wetlands and streams of the study area have been delineated and a jurisdictional determination has been completed by USACE and VDEQ to allow for the most robust analysis possible during the planning and alternatives development process (refer to **Appendix C**). As such, the Master Plan concept for Build Alternative 3 has already incorporated wetland avoidance and impact minimization to the extent practicable during the planning phase.

Where impacts are unavoidable, Build Alternative 3 has proposed project components as far upstream in the watersheds as possible to minimize impacts to larger perennial streams. All buildings and stormwater management facilities would be located outside of wetland limits.

Unavoidable direct and indirect wetland impacts of Build Alternative 3 on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 are depicted in **Figures 4.1-1 and 4.1-2**. The proposed tank trail through Parcel 21/20 was aligned to cross wetlands at their narrowest point. Ranges and buildings on Parcel 21/20 are located to avoid wetlands. On LRA Parcel 9, the use of existing roads was maximized and the off-road and unimproved road driving courses were laid out to avoid wetlands.

Unavoidable wetland impacts under Build Alternative 3 would include direct fill of approximately 0.34 acres on Parcel 21/20, 0.05 acres on the Grid Parcel, and 4.47 acres on LRA Parcel 9. Clearing of wetland vegetation would impact an additional 0.86 acres of wetlands on LRA Parcel 9. Wetland clearing would not be required on Parcel 21/20 or the Grid Parcel. The total wetland impact would be approximately 5.72 acres or 7% of total wetlands of the study area. Most of the impacts (approximately 5 acres) would occur in forested wetlands. Because this loss would reduce the amount of wetlands available for human use or ecological services, impacts to wetlands under Build Alternative 3 would be considered significant.

Figure 4.1-1. Direct and Indirect Wetland Impacts Parcel 21/20 Build Alternative 3

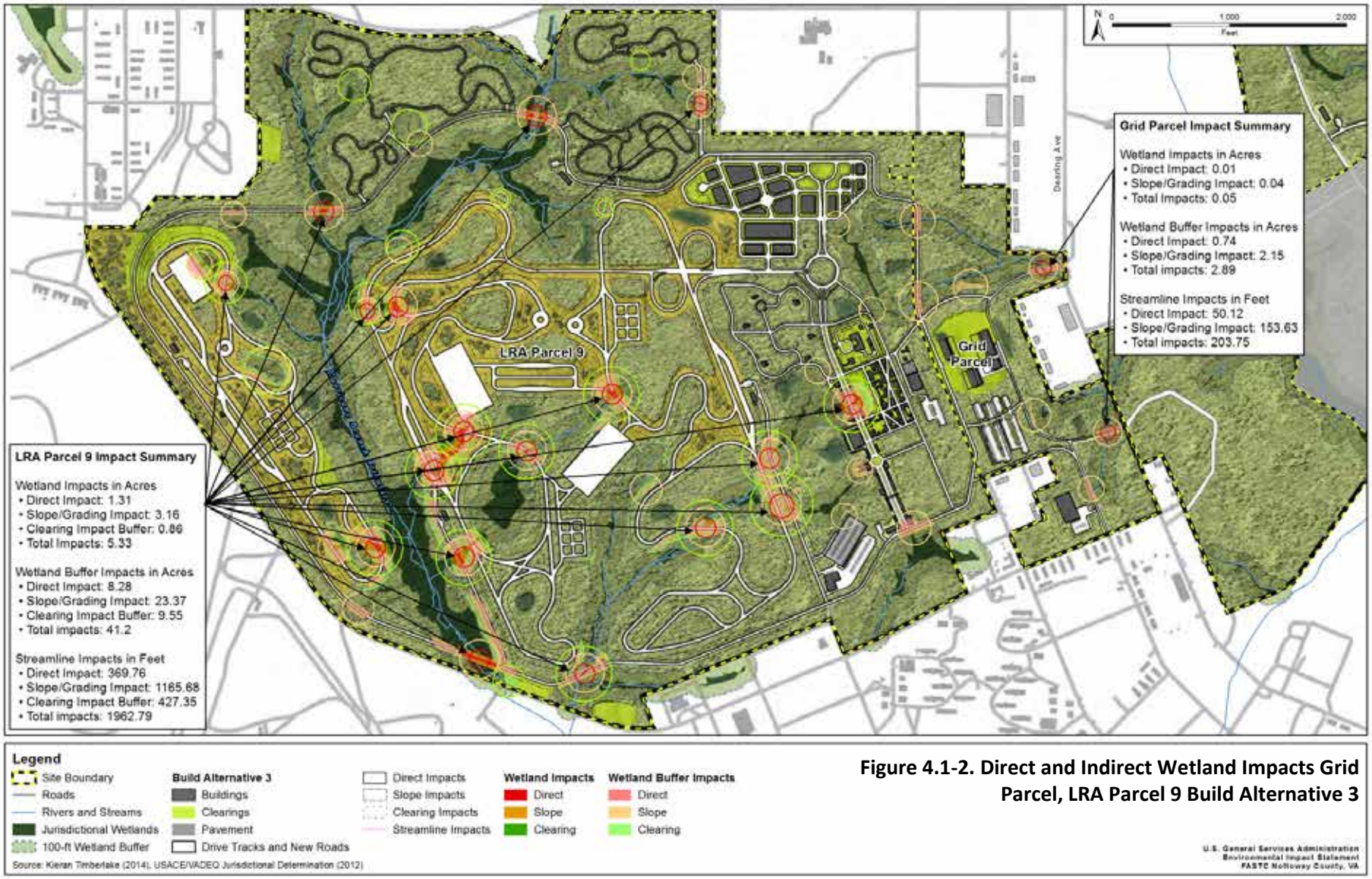

Figure 4.1-2. Direct and Indirect Wetland Impacts Grid Parcel, LRA Parcel 9 Build Alternative 3

Table 4.1-2 summarizes the wetland and waters of the U.S. impacts by parcel for Build Alternative 3.

Table 4.1-2. Wetlands and Waters of the U.S. Impacts Summary Build Alternative 3

	Existing Wetlands and waters of the U.S. (Acres)	Direct Impacts (acres)	Clearing Impacts (acres)	TOTAL Impacts (acres) [1]
Parcel 21/20	35.2	0.34	0	0.34
Grid Parcel	1.5	0.05	0	0.05
LRA Parcel 9	49	4.47	0.86	5.33
TOTALS				
Build Alternative 3	85.7	4.86	0.86	5.72

Note: [1]*Acreage includes waters of the U.S. whereas a linear foot of stream impact is presented in Table 4.1-1.*

In addition to direct and indirect wetland impacts from filling and clearing, there also would be impacts within the established 100-foot wetland buffer. Build Alternative 3 was developed to avoid this buffer to the extent feasible. Build Alternative 3 would have direct fill, grading, or clearing impacts on approximately 3.98 acres of wetland buffer on Parcel 21/20; 2.89 acres of wetland buffer on the Grid Parcel; and 41.2 acres of wetland buffer on LRA Parcel 9. Total wetland buffer impacts would be 48 acres or 12.5% of a total of 384 acres of wetland buffers in the study area.

The U.S. General Services Administration (GSA) would obtain a permit for wetlands and streams impacts from USACE under CWA Sections 404 and 401, which would require full mitigation of impacts. The implementation of mitigation would reduce the direct impacts to less than significant. Mitigation is discussed in **Section 4.1.4.3**. There is a potential for indirect impacts to wetlands to occur from stormwater and accidental releases, as described above under *Surface Water*. These indirect impacts would be reduced to less than significant levels through strict adherence with the SWPPP. Finally, indirect impacts to wetlands may occur from FASTC operations at the blast pads as a result of leaching of residual explosive chemicals. Manufactured BMPs have been proposed to protect wetlands in the vicinity of the blast pads from indirect impacts from blast pad leachates. Blast debris would not impact area wetlands because the blast demonstration pads would be designed so that the fragments stay within the area of the pad itself.

Floodplains

The study area is not located within 100-year or 500-year floodplains. Additionally, site development of Build Alternative 3 would be conducted in compliance with stormwater management regulations so that there would be no increase in down gradient flooding potential. Therefore, Build Alternative 3 would have no direct or indirect impacts on floodplains.

4.1.4.2 No Action Alternative

Under the No Action Alternative the FASTC facility would not be constructed and there would be no impact to water resources.

4.1.4.3 Mitigation

Should Build Alternative 3 be implemented, additional measures to avoid and/or minimize impacts to water resources would be incorporated into the facility design to the extent feasible. To minimize stream impacts, stream crossings would be oriented perpendicular to stream channels, where feasible, and suitably sized culverts or bridges would be used to maintain efficient peak flow.

Unavoidable wetlands and stream impacts under Build Alternative 3 would be mitigated, as required, using one or more of the following mechanisms:

1. Purchase of mitigation credits from an approved wetlands and streams mitigation bank within the Nottoway River watershed. Preliminary inquiries made to wetland mitigation banks in the wetland mitigation service area for the affected watershed indicated that mitigation bank credits would be available for the project.
2. In lieu fee payment to the Virginia Aquatic Resources Trust Fund managed by the Nature Conservancy.
3. Purchase of mitigation credits from the ARNG Maneuver Training Center Fort Pickett (Fort Pickett) from a potential mitigation bank under consideration by ARNG within the Nottoway River watershed portion of the Army Compatible Use Buffer (ACUB) area, if available during the wetland permitting time period.

Stormwater impacts to water resources would be minimized through required regulatory compliance with the Energy Independence and Security Act of 2007 (Section 438); the CWA (Sections 319, 401 and 404); the Virginia Stormwater Management Program; and the Virginia Erosion and Sediment Control Program. LID measures and stormwater BMPs would be incorporated into the facility design to minimize stormwater runoff.

Water quality impacts from pollutants would be avoided or minimized through adherence to regulations and the SWPPP, which would reduce or prevent accidental releases of POLs, hazardous waste, pesticides, or fertilizers during transport, storage, use, or disposal of these materials.

4.1.5 Biological Resources

Impacts to vegetation would be considered to be significant if substantial areas of high-value vegetation functioning as critical habitat for protected wildlife species, water quality protection, or recreational and aesthetic value would be permanently cleared. Loss of wetland vegetation would also be considered potentially significant.

Impacts to wildlife would be considered significant if the Proposed Action would result in more than minimal changes in population sizes or distributions of regionally important native animal species.

The Migratory Bird Treaty Act (MTBA) prohibits the taking, killing, or possession of migratory bird species. Migratory bird conservation relative to non-military readiness activities is addressed in a Memorandum of Understanding (MOU) developed in accordance with Executive Order (EO) 13186, signed January 10, 2001, “Responsibilities of Federal Agencies to Protect Migratory Birds.” EO 13186 requires federal agencies to take steps to protect migratory birds, including restoring and enhancing habitat, preventing or abating pollution affecting birds, and incorporating migratory bird conservation

into agency planning processes whenever possible. Under the MTBA, an activity has a significant adverse effect if, over a reasonable period of time, it diminishes the capacity of a population of a migratory bird species to maintain genetic diversity, to reproduce, and to function effectively in its native ecosystem. A population is defined by EO 13186 as "a group of distinct, coexisting, same species, whose breeding site fidelity, migration routes, and wintering areas are temporally and spatially stable, sufficiently distinct geographically (at some point of the year), and adequately described so that the population can be effectively monitored to discern changes in its status."

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The U.S. Fish and Wildlife Service (USFWS) defines "disturb" as: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment. Under the Bald and Golden Eagle Protection Act, an activity has a significant adverse effect if any takes of bald eagle are anticipated.

Under Section 7 of the Endangered Species Act, federal project proponents must consult with USFWS if one or more listed species may be affected by an action. In accordance with Section 7 of the Endangered Species Act, informal consultation was initiated with the USFWS as well as the Virginia Department of Game and Inland Fisheries and the Virginia Department of Conservation and Recreation, Division of Natural Heritage.

4.1.5.1 Build Alternative 3

Vegetation

Direct impacts to vegetation would occur under Build Alternative 3 as approximately 406 acres of forest, grassland, or shrubland would be cleared on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 for the construction of the FASTC facility. An estimated 365 acres of forest and 41 acres of shrubland and grassland would be cleared. Currently, approximately 1,285 acres on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 contain forestland and 112 acres contain grassland/shrubland. Therefore, the clearing associated with FASTC construction would eliminate approximately 31% of forestland and 38% of grassland/shrubland in the study area, with the greater impact being realized on LRA Parcel 9. When considering this in the context of the 33,892 acres of forest (VDMA 2011) and 3,000 acres of grassland/shrubland within Fort Pickett (VaARNG 2007), the clearing of vegetation under Build Alternative 3 constitutes an approximate loss of 1.2% of the forestland and 1.4% of the grassland/shrubland present within the boundaries of Fort Pickett.

An additional direct impact to vegetation from the construction of the various FASTC facilities on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 would be the fragmentation of the forest blocks in the study area and a reduction in their value to forest interior species. However, based on their area, the forest blocks of the study area are only considered to have a moderate habitat value and substantial forest block areas are located nearby that would remain available to forest interior species.

Therefore, the impacts to vegetation under Build Alternative 3 are not considered to be significant.

Wildlife

Mammals

Construction of Build Alternative 3 would have direct impacts to mammals by displacing mammals from suitable habitat in the study areas. Long-term, permanent impacts to mammal populations are not anticipated because the species known to be present in the study area are abundant in the surrounding areas and would rapidly repopulate suitable portions of the study area or find suitable habitat in the adjacent forested areas. Construction and operation of the FASTC facility would generate noise that would have an impact on mammalian species. Noise generated by FASTC activities would be consistent with current noise levels generated by VaARNG operations at Fort Pickett. The mammals present would be affected and would move away from these areas during periods of disturbance to other large areas of habitat nearby, and would return to the area when the disturbance subsides (Larkin 1994). Site lighting would be designed to meet local or federal dark sky guidelines, which would minimize impacts on mammals from nighttime light pollution and glare. Therefore, there would be minimal changes in population sizes or distributions of native terrestrial mammalian species.

Birds

Construction of Build Alternative 3 would have direct impacts on migratory birds by displacing them from suitable habitat in the study areas. Long-term, permanent impacts to migratory bird populations are not anticipated because the more tolerant bird species would rapidly repopulate suitable portions of the study area after construction. Less tolerant bird species would find suitable habitat in the adjacent forested areas. While this impact would not significantly affect any populations of birds, nesting pairs may be disturbed or subject to nest failure if the impact occurs during the breeding season.

Construction and operation of Build Alternative 3 would generate noise and would have direct impacts on migratory birds. Noise generated by FASTC activities would be consistent with current noise levels generated by VaARNG operations at Fort Pickett. The birds present would be affected and would move away from these areas, but there are other large areas of habitat nearby to which they are likely to move when disturbed. During the operational phase, birds tend to become habituated to the noise environment and are likely to continue to be present if habitat is available (Larkin 1994). Site lighting would be designed to meet local or federal dark sky guidelines, which would minimize impacts on birds from nighttime light pollution and glare. Therefore, Build Alternative 3 would not have a significant adverse effect on any populations of migratory bird species.

The bald eagle (*Haliaeetus leucocephalus*) is discussed below under *Threatened and Endangered Species*.

Reptiles and Amphibians

Construction of Build Alternative 3 would have direct impacts on reptiles and amphibians by displacing them from suitable habitat in the study area. Long-term, permanent impacts to reptiles and amphibian populations are not anticipated because the more tolerant species would rapidly repopulate suitable portions of the study area. Less tolerant species would find suitable habitat in the adjacent forested areas (Larkin 1994). Therefore, there would be minimal changes in population sizes or distributions of amphibians and reptiles. Stormwater management features, such as wet ponds or bioretention areas constructed for FASTC, may create habitats for these species that would offset these minimal impacts. In addition, stormwater management features would reduce the potential for adverse indirect impacts to reptile and amphibian habitat from stormwater runoff. Therefore, impacts to reptiles and amphibians would not be significant.

Freshwater Fishes

Under Build Alternative 3, streams and wetland areas would be avoided to the maximum extent practicable. All construction in or near surface water or wetlands would require the preparation and implementation of a SWPPP and would utilize BMPs for erosion and sedimentation control to minimize direct and indirect impacts to fish and other wildlife that are present in these features and in downstream areas. Once constructed, the natural substrate would be restored beneath stream crossings, where appropriate. All developed areas would be designed to minimize stormwater runoff to surface waters. As a result, impacts to freshwater fishes and other aquatic species from the FASTC facility would not be significant under Build Alternative 3.

Threatened and Endangered Species

Build Alternative 3 would have no direct or indirect impacts to Roanoke logperch, dwarf wedgemussel, Atlantic pigtoe, or whitemouth shiner as the surface waters in the study area do not provide suitable habitat for these species and they would not be present. Similarly, this alternative would have no direct or indirect impacts on red-cockaded woodpecker, upland sandpiper, loggerhead shrike, migrant loggerhead shrike, or Bachman's sparrow as the forest and grassland areas do not meet the habitat requirements for these species and, as a result, they would not be present.

None of the affected areas contain habitat for, or are known to support, rare or unique vegetation communities. Build Alternative 3 would have no direct or indirect impacts on Michaux's sumac. Michaux's sumac is unlikely to occur in the study area, which is primarily forested. The fringe areas of the forests in the study area are dominated by shrubs that are much larger than Michaux's sumac, and this species would not be able to compete for space and necessary resources in these areas. The frequent use of mowing instead of prescribed burning of open areas on the parcels also renders the habitat unlikely to support this species.

Under Build Alternative 3, construction of the southernmost firearms training building would occur outside the 660-foot buffer for the bald eagle nest located south of Parcel 21/20 (**Figure 3.1-7**). The buildings would be 312 feet from the limits of the buffer, and the closest grading would occur 82 feet from the buffer and therefore would not impact the bald eagle nest. As a result, construction of Build

Alternative 3 would not result in any "takes" of bald eagles. Therefore, there would be no direct impact to or takes of bald eagles, as defined by the Bald and Golden Eagle Protection Act.

Outdoor firing ranges and explosives pads for Build Alternative 3 are not anticipated to disturb nesting eagles. The closest proposed explosives pad is located approximately 2,800 feet away from the nest site (refer to **Figure 2.2-1**), and the noise produced would be similar to noise levels produced by current Fort Pickett operations. The closest firearms training facility proposed under Build Alternative 3 is located approximately 312 feet northeast of the eagle nest buffer area, near an existing Fort Pickett 300 Meter Range (Range 8). There is also an existing, active Fort Pickett outdoor firing range (Range 7) located approximately 1,000 feet east of the eagle nest site. The increased use of Range 8 to support FASTC training activities would not result in additional noise or other impacts or "takes" of bald eagles as the birds would be accustomed to noise disturbance from existing Fort Pickett ranges in the area.

Informal consultation with the USFWS was conducted in 2012 in accordance with Section 7 of the Endangered Species Act and the Bald and Golden Eagle Protection Act, including review of GSA's determination for the alternatives. The USFWS concurred with GSA's "no effect" determination with regards to Michaux's Sumac, Roanoke logperch, dwarf wedgemussel, and bald eagle. GSA updated the effects determination in 2014 and submitted the on line project review to USFWS (**Appendix C**). Virginia agencies, Virginia Department of Game and Inland Fisheries and Department of Conservation and Recreation, were provided GSA's assessment of effects with regard to federal and state threatened and endangered species (**Appendix C**), but did not pursue an informal review. During the Draft EIS comment period, Virginia agencies provided comments regarding threatened and endangered species, and responses to those comments are included in **Appendix K**. Virginia agencies were also provided an opportunity to review this Supplemental Draft EIS.

A Biological Assessment is being prepared to support conferencing between GSA and the USFWS, as required by 50 CFR 402.14(c) and Section 7 of the Endangered Species Act, regarding the likelihood of the Proposed Action having an adverse effect ("take") of northern long-eared bat (NLEB). NLEB is proposed for listing as endangered and is present in the affected area. Approximately 406 acres of potential NLEB foraging and roosting habitat, including 5.72 acres of wetlands, would be lost due to site clearing for Build Alternative 3. Approximately 365 acres of forest habitat would be removed from the area and would no longer be available to NLEB. Based upon habitat loss and the proximity of acoustic detections and captures of NLEB to proposed site development, GSA has made an Endangered Species Act determination that the Proposed Action may affect NLEB. GSA is conferencing with USFWS regarding potential effects and conservation measures for minimizing adverse effects. The conference process is ongoing, and the conclusions of the USFWS conference will be included in the Final EIS. Conservation measures to avoid and minimize potential effects on the NLEB from proposed FASTC construction and operations would include design of lighting to meet local or federal dark sky guidelines, which would minimize impacts to NLEB from nighttime light pollution and glare, and conducting most vegetation clearing from October to April to avoid adverse effects to NLEB during the NLEB maternity season. Because of unavoidable constraints on the proposed project schedule, Phase 1 construction would have to occur during the summer of 2015, but represents only 9 acres of forest to be cleared out of the total 365 acres.

With the proposed impact minimization measures, impacts to threatened and endangered species would not be significant under Build Alternative 3.

4.1.5.2 No Action Alternative

Under the No Action Alternative the FASTC facility would not be constructed and there would be no impact to biological resources.

4.1.5.3 Mitigation

Direct and indirect impacts to vegetation would be further minimized by proposed preservation and re-vegetation strategies that would be implemented for Build Alternative 3 to the extent feasible during and after completion of construction including:

1. **Avoiding Disturbance Whenever Possible**: project plans would preserve as much existing vegetation as possible.
2. **Treating Disturbed Edges**: Where existing woodland/forest is disturbed, new woodland-edge vegetation (early succession trees, shrubs, grasses) would be planted along the disturbed edges to re-establish a more natural edge to forest, create corridors for wildlife movement, and prevent invasive species from establishing along disturbed edges.
3. **In Disturbed Areas, Re-Establishing Appropriate Native Plant Communities**: In areas that would require a heavy amount of clearing, plant communities native to the central Piedmont, including oak/hickory and pine/oak woodland, loblolly pine/oak savanna, shrubland, and grassland, would be utilized to re-vegetate disturbed areas. These plant communities would be tailored to both the cultural requirements of the site and the programmatic requirements of training mission. Approximately 180 acres of vegetation would be restored under Build Alternative 3, of which approximately 87 acres would be forest. Under Build Alternative 3, 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. **Connect Plant Communities Across Larger Areas**: Re-vegetation would connect plant communities of the same type across larger areas of the site to the maximum extent feasible to create and preserve corridors for the movement of wildlife and “deeper” habitats required by interior dependent species.

Because ownership of Parcel 21/20 and the Grid Parcel would be retained by the Department of the Army under the land use permit, natural resources management would be coordinated, to the extent feasible for DOS programmatic needs, with the Fort Pickett Integrated Natural Resources Management Plan (INRMP). The INRMP is the installation’s primary natural resource planning document that considers current and future projects and natural resource activities.

Under Build Alternative 3, construction would not occur within the 660 foot buffer of the bald eagle nest; therefore, mitigation is not needed to comply with the Bald and Golden Eagle Protection Act.

Compliance with the regulatory requirements of the CWA (Sections 319, 401, and 404), the Virginia Stormwater Management Program and the Virginia Erosion and Sedimentation Program would minimize impacts to fish and other wildlife that are present in streams and wetlands.

GSA would implement conservation measures to avoid and minimize potential effects on the NLEB from proposed FASTC construction and operations. Conservation measures would be in accordance with the USFWS conference process and would include design of lighting to meet local or federal dark sky guidelines, which would minimize impacts to NLEB from nighttime light pollution and glare, and conducting most vegetation clearing from October to April to avoid adverse effects to NLEB during the NLEB maternity season. Because of unavoidable constraints on the proposed project schedule, Phase 1 construction would have to occur during summer of 2015, but represents only 9 acres of forest to be cleared out of the total 365 acres. Additional conservation measures that may be stipulated by USFWS would be included in the Final EIS.

4.2 Built Environment

4.2.1 Cultural Resources

For cultural resources found eligible to the NRHP, a significant adverse impact is one that diminishes the integrity of a historic property. If a project disturbs intrinsic characteristics that qualify the property for listing on the NRHP (other than its integrity), then it is also considered to have a significant adverse impact. Adverse effects may include the following: physical destruction, damage, or alteration of all or part of the resources; alteration of the character of the surrounding environment that contributes to the resource's qualifications for the NRHP; introduction of visual, audible, or atmospheric elements that are out of character with the resource; neglect of the resource resulting in its deterioration or destruction; and transfer, lease, or sale of the property (36 Code of Federal Regulations [CFR] 800.5(a)(2)) without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

4.2.1.1 Build Alternative 3

Architectural Resources

Fort Pickett includes two architectural resources, the historic district associated with the hangar and runways and the Officers Club, that have been determined eligible for the National Register of Historic Places (NRHP). Neither of these properties is within Parcel 21/20 or LRA Parcel 9; thus, no buildings would be demolished, moved, or otherwise physically altered as a result of implementing Build Alternative 3. Therefore, there would be no direct impacts to these resources.

Indirect visual effects on the historic district associated with the hangar by the construction of FASTC hard skills facilities on Parcel 21/20 and LRA Parcel 9 are expected to be minimal given factors such as distance and dense vegetation between the historic district and these two parcels. The heights of the types of facilities proposed for construction on the northwest side of Parcel 21/20 (Post-Blast Training Range [E03]) and the north side of LRA Parcel 9 (Unimproved Road and Off-Road Driving Courses [D04 and D05]) would be well below the tree line of the forest that extends along the southern and southeast sides of Blackstone Army Airfield. The FASTC facilities likely would not be visible from the hangar in

particular because of the relatively long distance between the hangar and Parcel 21/20 (1.20 miles from the northwestern portion) and LRA Parcel 9 (1.22 miles from the northern portion). Furthermore, the forest, which includes primarily coniferous trees, would obscure southern views from the historic district towards the FASTC facilities year-round. Therefore, there would be no adverse indirect visual effects to the historic district from construction of Build Alternative 3.

Noise modeling for FASTC demolition noise (explosives ranges and simulators) combined with existing Fort Pickett demolition and large caliber weapons noise from VaARNG operations revealed that compared to existing conditions, additional noise would be generated in the northwest portion of the installation, including the airfield. The noise environment for Build Alternative 3 would result in an extension of the land use planning zone (LUPZ) and Zone I (57 decibels (dB) C-weighted day-night average sound level [CDNL]), which would encompass the airfield; the hangar would be at the edge of the LUPZ and Zone I (refer to Noise **Sections 3.2.3** and **4.2.3**). This increased noise level would not result in a direct or indirect adverse impact to the historic district, as it is well within the maximum noise levels allowed at the airfield for aircraft training. The noise modeling also showed that peak noise levels from the combination of proposed FASTC demolition operations with existing demolition and large caliber weapons operations would also expand to the northwest and include the airfield. However, effects from this noise would be infrequent, as high explosives from average annual FASTC demolition operations are expected to be much lower in number than existing annual VaARNG operations. Furthermore, noise is an inherent part of the setting of the historic district, so an intermittent increase in noise exposure would not negatively affect, directly or indirectly, the significant qualities and characteristics of the property.

Under Build Alternative 3, the High Speed Anti-Terrorism Driving Course (D02) would be built north and northwest of the Officers Club. The tracks would be designed and constructed to follow the sloping topography of LRA Parcel 9 to accommodate the elevation changes while minimizing site work. A portion of one of the tracks would be approximately 500 feet north of the Officers Club. This distance includes a 75-foot slope and clear zone on either side of the 30-foot wide driving track. Despite the clear zone, views of the tracks from the Officers Club would be obscured, as the dense vegetation that currently characterizes the north side of the site would be retained. Additionally, 100-foot vegetative buffers would be maintained on both sides of an intermittent stream that extends to the north from the west side of the Officers Club site, effectively screening the drive track located farther to the northwest. With the presence of the vegetative buffers, implementation of Build Alternative 3 would not cause indirect adverse visual effects to the character-defining features or setting of the Officers Club.

Proposed FASTC training operations would not significantly change the noise levels around the Officers Club. The Officers Club would not be affected by noise from small caliber weapons operations at the Firearms Training Environment, as the peak sound levels associated with training at the firearms ranges do not extend west of Parcel 21/20. The club is within the existing LUPZ and 57 dB CDNL Zone I for demolition and large caliber weapons training activities that currently occur at Fort Pickett. With the addition of the proposed FASTC training operations, the Officers Club would remain within the 57 dB CDNL noise zone. Similarly, implementation of Build Alternative 3 would not change the noise environment of the Officers Club for peak noise, as it would remain within the 115 dB PK15(met) zone

and outside the 115 dB PK50(met) zone for large caliber weapons of the Explosives Training Environment. Concerning noise exposure related to operations on the D02 drive tracks, segments of which are to the north, the Officers Club would be outside the 65 dB contour for maximum and average drive track operations. Simulator (flash bang) use on the D02 drive tracks and E04 Explosives Simulation Alley would not adversely affect the Officers Club because operations using simulators would be conducted more than 656 feet away from the Officers Club and it would remain within the existing 115 dB PK15(met) zone (Refer to noise **Section 4.2.3.4** regarding simulators). Therefore, the Officers Club would not be directly or indirectly adversely affected by the noise from proposed FASTC small caliber weapons, demolition, or high speed driving training.

Potential indirect effects to the Blackstone Historic District and Farley's from construction and operation of the proposed FASTC were considered. New construction proposed on LRA Parcel 9 would be approximately 1.8 miles southeast of the Blackstone Historic District, and 0.9 mile southeast of Farley's. Given these distances and the dense forest that covers much of the area between these properties and LRA Parcel 9, the FASTC facilities would not be visible from the historic district or from Farley's. Noise modeling indicates that the proposed FASTC training operations would generate limited additional noise in the surrounding community when compared to the existing noise produced by VaARNG operations. Therefore, visual or auditory elements associated with construction and training operations at FASTC under Build Alternative 3 would have no adverse effects, either directly or indirectly, to the Blackstone Historic District or to Farley's.

Under Build Alternative 3, the main access to the FASTC facility by staff and students is expected to be from U.S. Route 460 to Military Road through the Fort Pickett Main Gate to East 10th Street and Dearing Avenue to the Core Area loop road, or secondarily, via U.S. Route 460 to U.S. Route 460 Business (North Main Street) through downtown Blackstone to VA Route 40 and Military Road through the Fort Pickett Main Gate. A second option for primary access to the Core Area that is under evaluation is VA Route 40 to a proposed new controlled gate on Dearing Avenue. An alternative secondary route and access point would be to follow U.S. Route 460 Business through downtown Blackstone to West Entrance Road and enter the Fort Pickett West Gate to Military Road. There are no NRHP-listed or eligible properties on Dearing Avenue or on Military Road north of West Entrance Road, so a projected increase in traffic on either road would have no effect on significant architectural resources. A small increase in traffic on U.S. Route 460 Business (Main Street) through downtown Blackstone to VA Route 40 or West Entrance Road under Build Alternative 3 would not adversely affect the integrity of the Blackstone Historic District. No physical features of the district would change as a result of a small increase in traffic under Build Alternative 3, nor would its appearance. FASTC traffic would not be expected to circulate off U.S. Route 460 Business onto residential side streets. Likewise, a minimal increase in traffic on West Entrance Road would not adversely affect the potential significance of Farley's. The visual and auditory effects of additional vehicular traffic within the setting of the property would be intermittent, as additional traffic would occur during only a.m. and p.m. peak hours.

Implementation of Build Alternative 3 would have no direct or indirect adverse effects on NRHP-eligible architectural historic properties. GSA is conducting consultation with the State Historic Preservation Officer (SHPO) at the VDHR on this finding of effects and the results will be included in the Final EIS.

Archaeological Resources

Implementation of Build Alternative 3 would have no direct or indirect adverse effects on NRHP-eligible archaeological historic properties. All sites recommended as potentially eligible for the NRHP would be avoided by Build Alternative 3. GSA is consulting with the SHPO on this finding of effects and the results will be included in the Final EIS.

4.2.1.2 No Action Alternative

Under the No Action Alternative, GSA and DOS would not develop FASTC and would not acquire the parcels of land at Fort Pickett and Nottoway County. The No Action Alternative would have no impact to architectural or archaeological resources.

4.2.1.3 Mitigation

Compliance with Section 106 of the National Historic Preservation Act would avoid or minimize impacts to cultural resources. GSA is conducting consultation with the SHPO on this finding of effects and the results will be included in the Final EIS. Should future project design result in potential impacts to Sites 44NT0210, 44NT0212, 44NT0219, 44NT0220, 44NT0221, or 44NT0222, which are currently avoided by Build Alternative 3, Phase II testing and evaluation and further consultation with the SHPO would be conducted.

To avoid adverse effects on the Officers Club, operations using simulators (flash bangs) would be conducted more than 656 feet away from the Officers Club adjacent to the southern boundary of LRA Parcel 9.

4.2.2 Air Quality

The air quality analysis evaluates projected future emissions, including from construction and operation activities. Air quality impacts would be significant if emissions associated with the Proposed Action would: 1) increase ambient air pollution concentrations above the National Ambient Air Quality Standards (NAAQS), 2) impair visibility within federally mandated Prevention of Significant Deterioration Class I areas, 3) result in the potential for any stationary source to be considered a major source of emissions if total emissions of any pollutant subject to regulation under the Clean Air Act (CAA) is greater than 250 tons per year (TPY) for attainment areas[24], or 4) for mobile source emissions, result in an increase in emissions to exceed 250 TPY for any pollutant.

Pollutants considered in the 2012 and current analyses include the criteria pollutants. Airborne emissions of lead are only evaluated for ordnance detonation because the only lead emission sources associated with the Proposed Action are the firing ranges.

For criteria pollutant emissions, 250 TPY per pollutant was used as a comparative analysis threshold. This value is used by the USEPA in their New Source Review standards as an indicator for impact analysis for listed new major stationary sources in attainment areas. No similar regulatory threshold is available for mobile source emissions, which are the primary sources for the construction phases, and also a

[24] 40 CFR Part 52.21

component of operational emissions for the Proposed Action. Lacking any mobile source emissions thresholds, the 250 TPY major stationary source threshold was used to equitably assess and compare mobile source emissions.

Pollutants would be generated by numerous sources, including diesel exhaust from construction equipment, gasoline exhaust from the driving tracks, and operations, such as generators and boilers. In general, criteria pollutants volatile organic compound (VOC), carbon monoxide (CO), nitrous oxides (NO_x), and sulfur dioxide (SO_2) emissions would be primarily generated by diesel-fueled heavy equipment operating in construction areas. Particulate matter (PM) emissions, in the form of PM_{10} and $PM_{2.5}$ would be primarily due to fugitive dust created by land disturbance activities, which would include land clearing; soil excavation, cutting, and filling; trenching; and grading. The fugitive dust emission factor for PM_{10}, which is used as part of the $PM_{2.5}$ calculation (MRI 2005), is assumed to include the effects of typical control measures such as routine site watering and other measures for dust control. A dust control effectiveness of 50% is assumed, based on the estimated control effectiveness of watering (Western Regional Air Partnership 2004). Other sources of emissions include diesel emissions from heavy construction equipment and tailpipe emissions from construction worker personally owned vehicles. Because of the rural nature of the site and the level of development, the emissions associated with construction workers commuting to the area to work were included in the analysis. Refer to **Appendix I** for further discussion of the technical approach and assumptions used in the 2012 analysis.

Mobile source air toxics (MSATs) would be the primary hazardous air pollutants (HAPs) emitted by vehicles during construction and operations. The equipment used during construction would likely vary in age and have a range of pollution reduction effectiveness. Construction equipment, however, would be operated intermittently over a large area and would produce negligible ambient HAPs in a localized area. An evaluation of the air emissions associated with FASTC operations has determined that there would be minimal air quality impacts for CAA criteria pollutants and FASTC operations have not been linked with any special MSAT concerns. As such, this project would not result in substantial changes in traffic volumes, vehicle mix, or any other factor that would cause a measurable increase in MSAT impacts of the project from that of the No Build Alternative. Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project (USDOT 2012). Therefore MSAT emissions are not considered further in this analysis.

Air emissions are analyzed, where applicable, based on proposed construction activities and operational emissions that would occur during full operation. The activities were estimated from alternatives concepts as they were being developed. Detail calculations of total construction activities have continued to evolve. Since Build Alternative 3 includes a smaller building footprint (no housing component, for example) and fewer fulltime employees than did Build Alternatives 1 and 2 presented in

the 2012 Draft EIS, emissions would be expected to be less than those quantified and presented in **Appendix I.**

Under the CAA, motor vehicles and construction equipment are exempt from air permitting requirements. Because the emissions from these sources associated with the Proposed Action would occur in areas that are in attainment of the NAAQS for all criteria pollutants, the General Conformity Rule is not applicable. Nonetheless, the National Environmental Policy Act (NEPA) and its implementing regulations require analysis of the significance of air quality impacts from these sources as well as non-major stationary sources. However, neither NEPA nor its implementing regulations have established criteria for determining the significance of air quality impacts from such sources in CAA attainment areas.

As noted above, the General Conformity Rule is not applicable to these mobile sources and minor (i.e., non-major) stationary sources in attainment areas. Therefore, the analysis of construction and operational incremental emissions from these sources in attainment areas and the significance criteria selected (250 TPY) are solely for the purpose of informing the public and decision makers about the relative air quality impacts from the Proposed Action under NEPA requirements.

4.2.2.1 Build Alternative 3

As noted above, the magnitude of construction and operations is reduced under Build Alternative 3 as compared with the 2012 Draft EIS Proposed Action. Total square footage of building construction would be 706,000 square feet as compared with 2.5 million square feet for the 2012 Proposed Action. Build Alternative 3 would not include the living accommodations or soft skills training venues that were included in 2012 and total fulltime employees have been substantially reduced from 1,070 employees with 2012 Proposed Action to 339 employees in this Supplemental Draft EIS. With these reductions, there would also be a reduction in air emissions during the construction and operational phases. The analysis in the 2012 Draft EIS determined that air emissions from the Proposed Action would be well below the air quality impact significance thresholds and would not have a significant impact on the local or regional air quality. With Build Alternative 3 being smaller, its air quality effects would also have no significant impacts. This supplemental analysis incorporates the findings of the 2012 analysis. With smaller air emissions, there is no need to update the Draft EIS analysis or fully quantify air emission from Build Alternative 3 for this Supplemental Draft EIS. A summary of the Build Alternative 3 analysis is presented below and the complete 2012 analysis is provided in **Appendix I**.

Construction

Direct impacts from emissions from construction would include combustion emissions from fossil fuel-powered equipment, including heavy duty diesel equipment, and fugitive dust emissions (PM_{10} and $PM_{2.5}$) during clearing, demolition, earth moving, and operation of equipment on bare soil. Construction would occur from 2015 to 2020. Air emissions impacts from construction of Build Alternative 3 would be well below the significance thresholds and would not have a significant impact on the local or regional air quality (refer to **Appendix I** for the Proposed Action covered in 2012 Draft EIS**)**.

Fugitive dust from land disturbance activities would be the primary source of emissions during construction. PM_{10} emissions are estimated using wetting and other typical reduction practices to

reduce dust release by 50%. PM_{10} emissions are predicted to be greatest in 2016; however, they would remain well below the significance threshold of 250 TPY. Construction emissions would not have direct or indirect significant impacts on the region's air quality.

Direct impacts to air quality would also include emissions from the burning of construction debris, if such an activity were undertaken during construction. However, burning of construction debris would not occur for the Proposed Action, and construction debris would not generate emissions. GSA Facilities Standards for Public Buildings (P100) would require that 50% of construction debris be recycled or reused. The remaining vegetative debris and/or demolition and construction materials would be disposed in accordance with all laws and regulations.

Operations

Operational activities producing air emissions include commuter traffic, drive tracks, boilers, and emergency generators. Emissions from operations activities at FASTC would either be unchanged from those analyzed in the Draft EIS or would be less as a result of the reduced footprint. The reductions from the reduced footprint would be primarily associated with fewer stationary sources, such as boilers and emergency generators. There would also be a substantial reduction in the number of vehicles commuting to FASTC given the fewer number of fulltime employees. The analysis of operational emissions in the Draft EIS concluded that operation of the FASTC facility would not have direct or indirect significant impact on the local or regional air quality. Under Build Alternative 3, all of the criteria pollutant emissions would remain well below the significance threshold of 250 TPY.

The proposed boilers are all less than 10,000,000 Btu/hour and therefore are categorically exempted from permitting regulations of the Commonwealth of Virginia for stationary sources of air emissions. The emergency generators are exempt from permitting regulations provided maintenance and testing hours are kept below 100 hours per year (40 CFR 60 Subpart IIII and/or 40 CFR 63.6640(f)) and total hours of operation are kept below 500 hours per year[25]. Analysis of permit requirements based on the final stationary source(s) type and design would be performed as design requirements are more fully delineated. This would ensure regulatory permit compliance and that all requisite source registrations would be submitted.

The carbon dioxide equivalent (CO2e) GHG emissions for the stationary sources would be well below the 25,000 metric tons (tonnes) per year threshold established by the Mandatory Greenhouse Gas Reporting Rule.

Based on the estimates that air emissions would be well below impact thresholds, Build Alternative 3 would not have direct or indirect significant impact on the local or regional air quality.

4.2.2.2 No Action Alternative

Under the No Action Alternative, the FASTC facility would not be developed; therefore, none of the construction or operational emissions would occur.

[25] 9 VAC 5-80-1320.B.2.b

4.2.2.3 Mitigation

Build Alternative 3 would have no significant air quality impact requiring mitigation. Impacts to air quality from fugitive dust (PM_{10} emissions) would be minimized by periodic wetting during FASTC construction and operation. No other minimization or mitigation would be necessary.

4.2.3 Noise

4.2.3.1 Build Alternative 3

The Proposed Action of this Supplemental Draft EIS includes all of the same noise producing operations that were analyzed in the 2012 Draft EIS. The locations of the Driving Tracks, Explosives Training, and Firearms Training venues are the same as 2012 Build Alternative 2. Therefore, this supplemental noise analysis incorporates the 2012 analysis for Build Alternative 2. The technical report *Environmental Noise Assessment for the Proposed Foreign Affairs Security Training Center (FASTC) in Nottoway County, Virginia, August 2012*, is provided in **Appendix G**.

Build Alternative 3 would not have any substantive change in noise impacts when compared with 2012 Build Alternative 2, described in **Appendix G**. All noise producing operations presented for Build Alternative 3 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 will not alter the noise footprint. Therefore, the 2012 noise analysis represents the noise effects from Build Alternative 3.

Noise modeling was conducted in 2012 to determine the location and magnitude of noise that would be generated by the training operations in comparison to existing conditions (baseline). **Appendix G** includes a detailed description of the modeling parameters and computer programs used in this analysis.

Noise impacts would be significant if the Proposed Action results in a change in the existing noise environment that causes a substantial increase in the number of sensitive noise receptors located in noise zones considered incompatible with the designated land use. Sensitive noise receptors are those land uses that require quiet for daytime or nighttime use such as residences, hotels, hospitals, schools, libraries, parks, and churches (U.S. Army 2007). Noise zones in which these land uses are normally not recommended or are incompatible with these land uses are Noise Zone II and Noise Zone III, respectively. Noise impacts on wildlife are discussed under **Section 4.1.5**. Peak noise does not determine significant impacts but is analyzed to provide supplemental information for potentially affected areas and is defined by the level of complaint risk, moderate or high.

The study results presented in the following section for Build Alternative 3, and in **Appendix G**, show that the proposed FASTC training operations are predicted to generate limited additional noise exposure in the surrounding community beyond the existing noise from Fort Pickett operations, but the impact would not be significant. However, Blackstone residents are likely to notice a couple changes to their noise environment if FASTC is implemented. First, 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. 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. Despite this increase in peak levels, the infrequency of these events would result in a low risk that residents in the surrounding communities would be adversely impacted.

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. Route 460, Cox Road, and Military Road where construction vehicles would travel to/from the site. There are only a few residences in proximity to these areas and construction activity would be limited to daytime weekday hours to the extent feasible to minimize impacts. These impacts would be temporary and would not be significant.

Noise Impacts Assessment Methods

Because there is no single noise assessment methodology that combines C-weighted impulsive noise and A-weighted non-impulsive noise sources, the various FASTC training exercises were modeled separately depending on whether the noise from these exercises is normally characterized as impulsive, high-amplitude (such as gun fire or demolition operations) or as non-impulsive (car driving). FASTC driving exercises would generate non-impulsive noise, which may be classified as continuous for the purposes of modeling, although the vehicle operations are not constant throughout the day, but rather intermittent. Industry standard computer noise models were used to predict the noise exposure due to all FASTC training operations (refer to **Appendix G**).

Direct noise impacts are provided for the three main types of FASTC activities: drive tracks and courses, demolition (explosives ranges and simulators), and small caliber weapons (firing ranges). Refer to **Section 3.2.3** and **Appendix G** for the definition of metrics used to measure the different types of noise and additional details on the noise modeling methods.

There are no aircraft operations proposed for FASTC other than potential occasional helicopter landings for personnel transport; therefore, aircraft noise is not analyzed for Build Alternative 3 and is considered only as part of the existing noise environment. Occupational noise exposure is addressed in this analysis.

Where applicable, the noise results from proposed FASTC operations were compared (and combined) with the existing Fort Pickett baseline noise environment estimated by the U.S. Army Public Health Command (USAPHC) (USAPHC 2011). The results are combined because under the proposed project, 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 FASTC Build Alternative 3), the FASTC analysis uses noise assessment methodologies identical to those used by the USAPHC.

All noise levels are for the outdoor noise environment. The indoor noise levels are estimated to be 15 to 25 decibels lower than outdoor noise levels depending on the type of structure and whether windows are open or closed.

The following methods were used to evaluate impacts of each proposed activity:

- **Drive Tracks and Courses:** Hourly average and maximum noise levels. Hourly average sound levels are measured in A-weighted decibels (dBA) and evaluated using Noise Abatement Criteria of the Federal Highway Administration (FHWA). The FHWA criteria are that a noise impact occurs when the hourly sound level is 66 dBA or higher. Maximum sound levels are also measured using maximum dBA and are compared with the strictest of the regional daytime noise ordinance limits in residential zones, a maximum of 65 dBA during the day and 55 dBA at night outdoors.
- **Explosives Ranges**: C-weighted day-night average sound level (CDNL) to determine noise zones, Zones I, II, III, and the LUPZ as delineated by noise contours on a map. PK15(met) and PK50(met) are used to measure peak noise to determine areas of complaint risk.
- **Simulators:** PK15(met) and PK50(met) are used to measure peak noise to determine areas of complaint risk.
- **Firing Ranges (Indoor and Indoor-Outdoor)**: Peak dB levels (dBP) to determine exterior peak noise levels from indoor and indoor-outdoor firing ranges. These are not combined or compared with the baseline because all Fort Pickett ranges are outdoors.

Drive Tracks and Courses

Build Alternative 3 includes identical locations and operations on all of the same drive tracks and road courses as the 2012 Build Alternative 2. Therefore, the noise impact analysis of the drive track operations would not change from the 2012 *Environmental Noise Assessment* provided in **Appendix G**, and is summarized below**.**

- 66 dBA noise levels for the hourly average driving track noise under Build Alternative 3 would be contained entirely within the LRA Parcel 9 and Grid Parcel boundaries and would not exceed the FHWA Noise Abatement Criteria levels for residential land use.
- 65 dBA maximum sound levels would extend from the perimeter of all drive tracks and courses to approximately 250 feet, but would extend 1,000 feet from the most western high speed drive track straightaway toward the Fort Pickett ammunition storage area. The 65 dBA sound level would be contained well within the Fort Pickett boundary.
- 55 dBA nighttime noise levels would extend out up to 500 feet from the loudest track at night but would be contained within the Fort Pickett boundary. Skid pad and car impact exercises would not occur at night. Further, there are expected to be low numbers of vehicle operations at night (4 each per day) on tracks D04 and D05. Noise impacts at nearby residential properties are not expected.

Because of the distances to the nearest residential community of Blackstone, about one mile northwest of the drive tracks, none of the driving exercises would generate noise levels in residential areas that exceed either criteria. Therefore, direct noise impacts from drive tracks and courses under Build Alternative 3 would not be significant.

Explosives Ranges (Demolition)

Five demolition training facilities are proposed for Parcel 21/20 and LRA Parcel 9, including the Explosives Demo Range (E02), Post Blast Training Range (E03), Explosives Simulation Alley (E04), Explosives Breaching House (E05b) and Explosives Breaching Walls (E05c/d). These facilities accommodate explosives ranging in size from flash bangs (4.5 grams) up to 3 pound charges. The primary noise modeling parameters are the number of operations by type of munitions and the geographic location of each facility.

The projected noise levels from proposed operations at the explosive ranges are mainly dominated by the higher yield FASTC demolition operations using 2 to 3 pound charges, which would occur at E03 and E05c/d only. 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 extend off of Parcels 21/20 and LRA Parcel 9. The use of 3 pound demolition charges is expected to occur a total of only 18 times per year during the daytime, and the 2.23 pound charges are expected to occur 36 times per year during the daytime. Therefore, the complaint risk 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. A complete list of operations proposed for the explosives ranges is provided in **Appendix G**.

Build Alternative 3 Noise Zones

Comparing Build Alternative 3 demolition noise levels with the baseline Fort Pickett levels, the results show that (1) noise exposure from FASTC proposed operations under Build Alternative 3 is concentrated in the northwest part of Fort Pickett, including Parcel 21/20 where the demolition pads are located, and (2) this additional FASTC noise exposure only increases the combined noise environment (Baseline + Build Alternative 3) above the baseline in this one area.

Figure 4.2-1 shows noise zone results for Build Alternative 3 and the baseline:

- LUPZ and Noise Zone I (57 CDNL) would extend just beyond the Fort Pickett boundary, directly north of the airfield, by approximately 650 feet. LUPZ and Noise Zone I are acceptable for noise sensitive land uses.
- Noise Zone II (62-70 CDNL) would remain within the Fort Pickett boundary; however, it would increase in area and extend over parts of the Pickett Park industrial zone, Blackstone Army Airfield, Parcel 21/20, the two fishing ponds located adjacent to the eastern boundary of Parcel 21/20, and the Grid Parcel.
- Noise Zone II would extend to several VaARNG buildings located east of Pickett Park and east of East Parade Avenue.
- Noise Zone III would occur in the immediate area of the explosive ranges on Parcel 21/20 within Fort Pickett. Noise Zone III would remain on the eastern boundary of Parcel 21/20 just east of the fishing ponds.

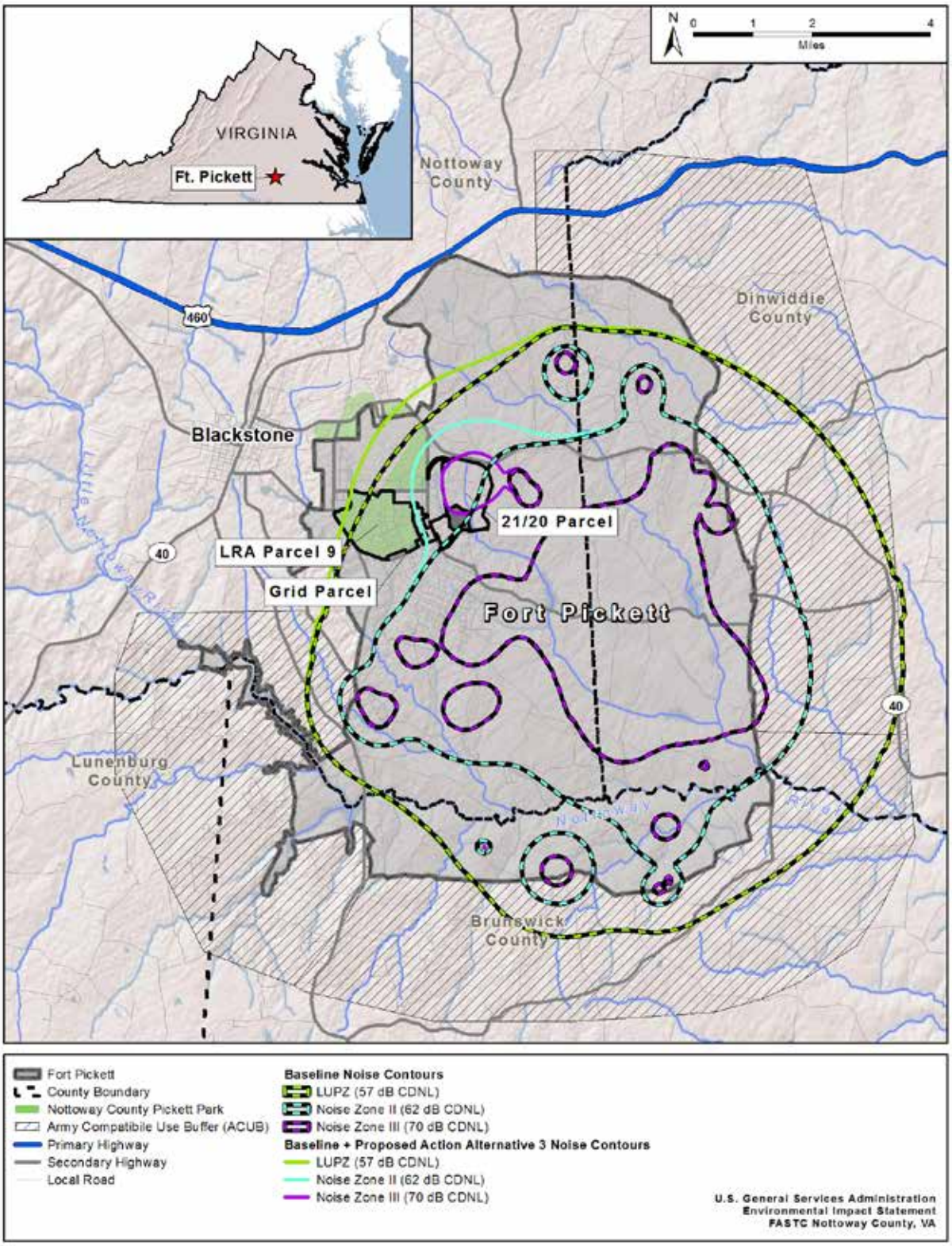

Figure 4.2-1. Demolition and Large Caliber Operations Noise Contours (Baseline + Build Alternative 3)

The area affected is mostly limited to outdoor areas of the industrial zone and exists within an environment that currently experiences noise from Fort Pickett munitions and aircraft operations. Therefore, minimal additional incompatibilities in land use would result with Build Alternative 3 and direct and indirect impacts would not be significant.

Build Alternative 3 Complaint Risk Areas

Figure 4.2-2 shows results for peak noise levels outdoors under average weather conditions (PK50[met]) for Build Alternative 3 and the baseline:

- Moderate Complaint Risk areas (115 dBP) would increase compared with the baseline but would remain within the Fort Pickett boundary. Portions of Pickett Park that are within Fort Pickett would be within this area.
- High Complaint Risk areas (130 dBP) would expand within Fort Pickett on Parcel 21/20 and immediately adjacent areas to the east and west within the Fort Pickett boundary.

Figure 4.2-3 shows results for peak noise levels outdoors under infrequent unfavorable weather conditions (PK15[met]) for Build Alternative 3 and the baseline. **Figure 4.2-4** depicts the locations of three residences and other sensitive land uses in proximity to the boundaries of these peak noise events. The following impacts would occur:

- Moderate Complaint Risk areas would increase compared with the baseline in some areas within and outside the northwestern boundary of Fort Pickett during infrequent explosive events occurring during unfavorable weathers conditions.
- Blackstone would still be well outside of the Moderate Complaint Risk area.
- Moderate Complaint Risk areas would extend to include several commercial and residential properties located north of the airfield; these include the Virginia Polytechnic Institute Agricultural Research and Extension campus and a single residence located adjacent to the Virginia Tech property, a camp ground within Fort Pickett, and a residence off West Entrance Road. The main activity at the Virginia Tech campus is to grow crops, which is not noise sensitive. However, there are plans to add livestock (pers. comm. Virginia Polytechnic Institute 2012).
- Moderate Complaint Risk areas would expand within Fort Pickett to include LRA Parcel 9, the Blackstone Army Airfield, and areas in between. The daycare center within the Officers Club would remain in the moderate complaint risk zone as it is currently under the baseline condition.
- High Complaint Risk areas would expand within Fort Pickett on Parcel 21/20, the Grid Parcel, part of LRA Parcel 9, and Pickett Park. Although there are VaARNG buildings located east of LRA Parcel 9 and south of the Grid Parcel and in Pickett Park, these areas are typically used by base or industry personnel; therefore, complaint risk is expected to be lower than it would be for the general population.

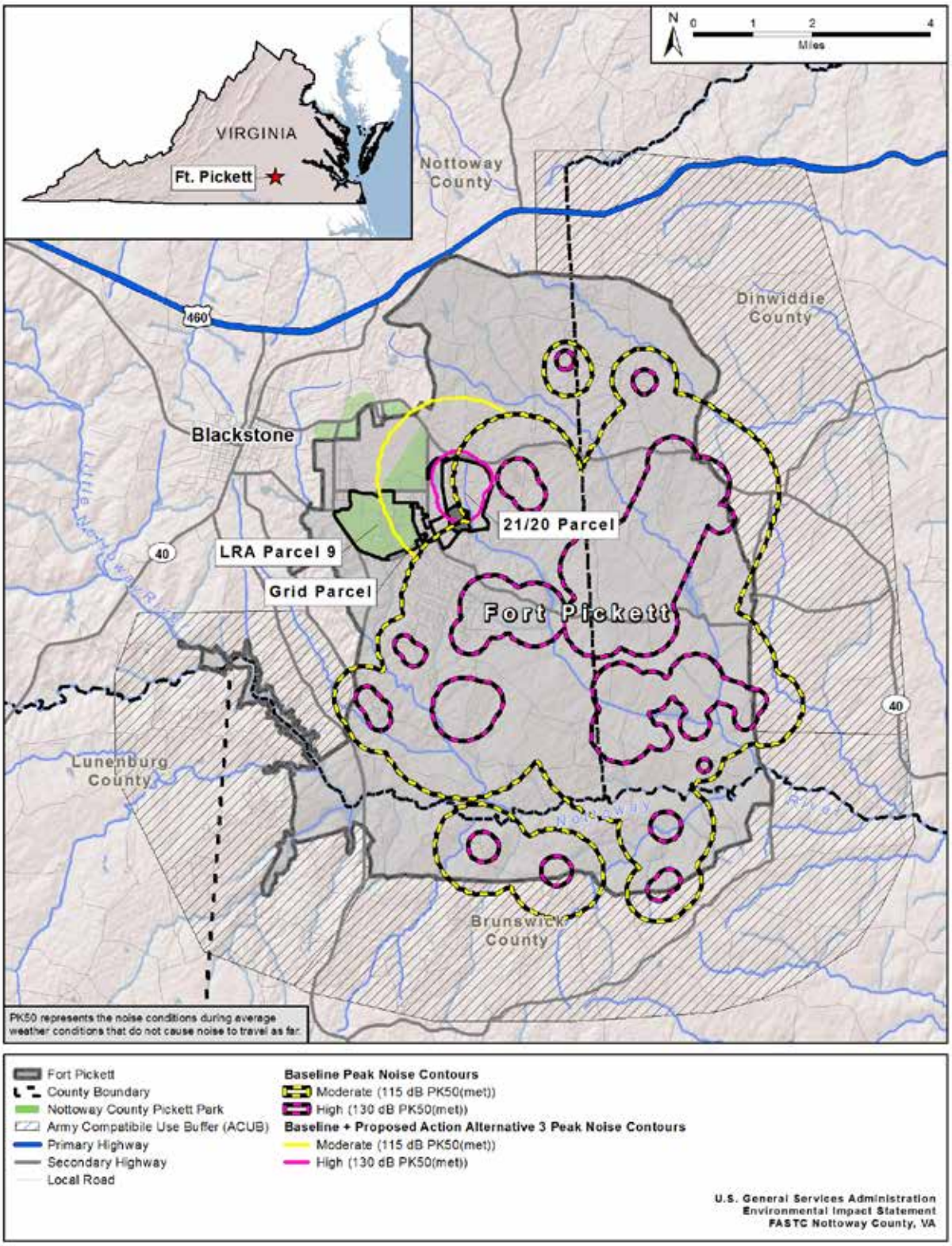

Figure 4.2-2. Demolition and Large Caliber Operations Complaint Risk Area, PK50(met) (Baseline + Build Alternative 3)

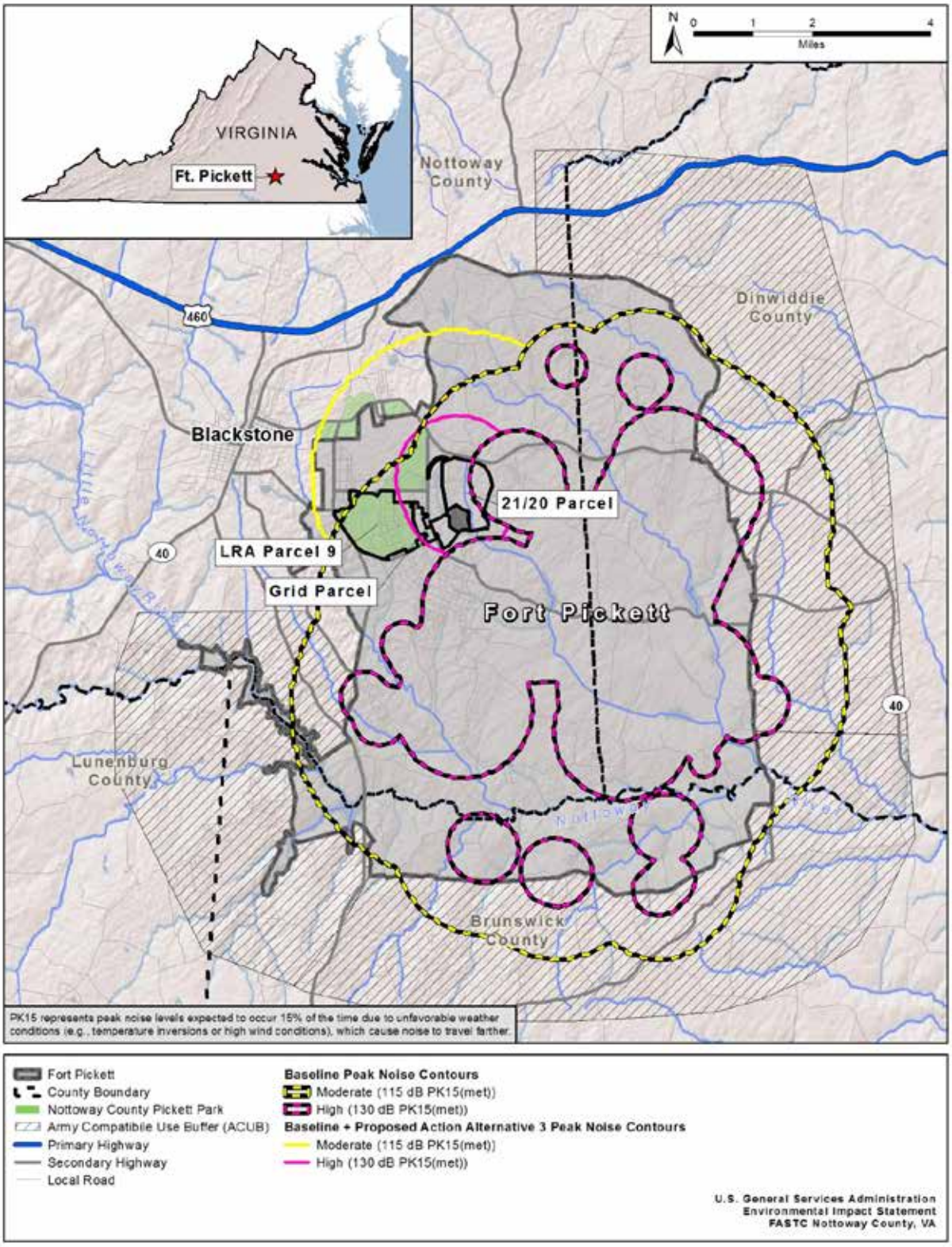

Figure 4.2-3. Demolition and Large Caliber Operations Complaint Risk Area, PK15(met) (Baseline + Build Alternative 3)

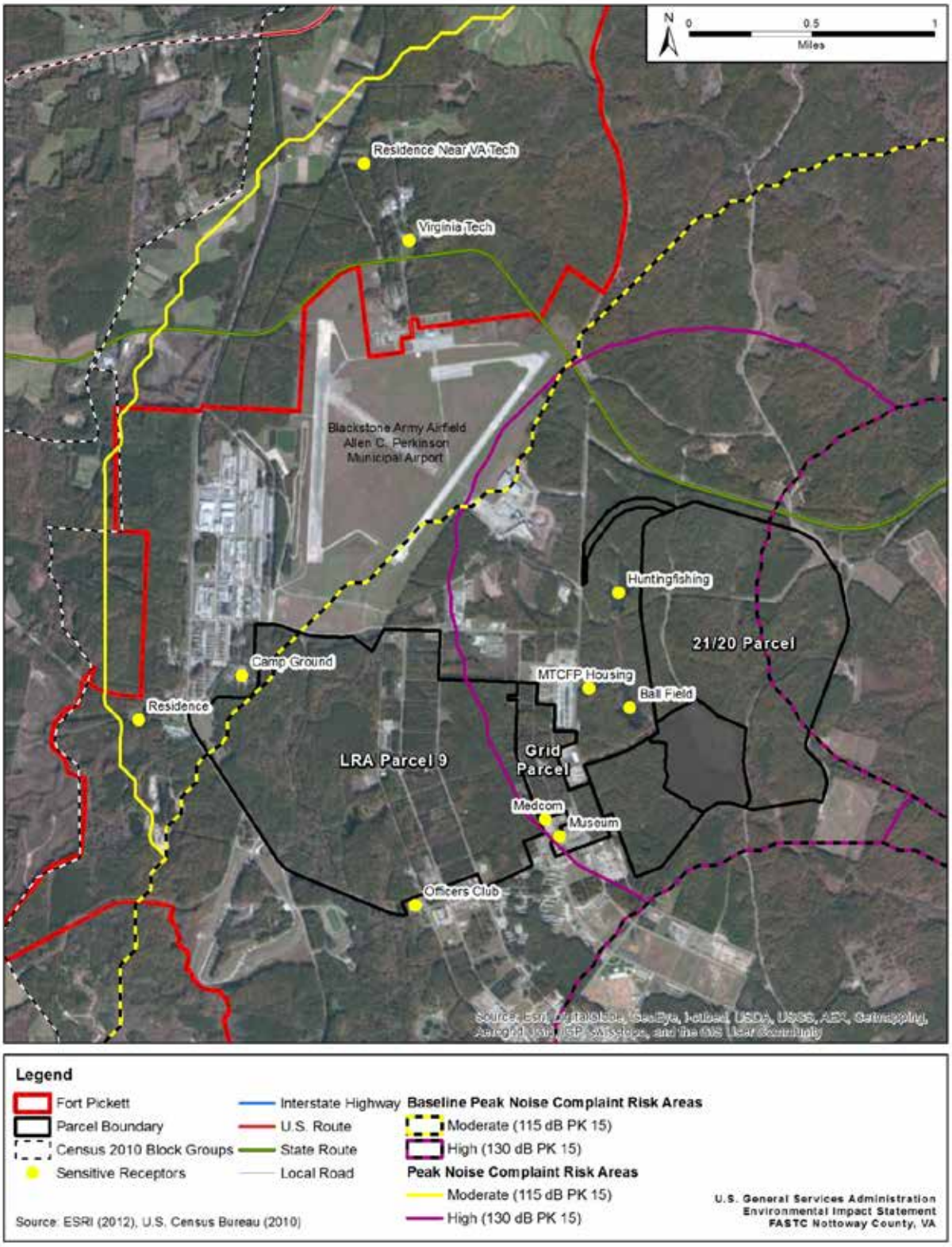

Figure 4.2-4. Sensitive Noise Land Uses in Peak Noise Areas (Baseline + Build Alternative 3)

Under Build Alternative 3, there would not be a substantial increase in the area zoned for residential land use or the number of sensitive noise receptors located in noise zones considered incompatible with the designated land use; therefore, direct noise impacts would not be significant.

In addition, demolition charges generating the peak noise levels would be expected to occur a total of 54 times per year during the daytime, and day to day operations would normally generate lower peak levels than indicated. Complaint risk from residents in the surrounding community would still be expected to be low because of the existing acclimation to baseline noise from Fort Pickett munitions and aircraft operations, sparse residential development in that area, and the infrequency of the peak events.

Simulators (Demolition)

Simulators (flash bangs) are an explosive proposed for use in certain FASTC driver training and mock urban environment exercises. It is proposed that approximately 400 simulator events would occur on an annual basis at the Explosives Simulation Alley (E04) and 600 simulator events would occur at the High Speed Anti-Terrorism Driving Course (D02). The standard method to analyze these simulators is to compute the peak noise levels and determine the distances for risks of complaints. Under Build Alternative 3, E04 is located in the southeast part of LRA Parcel 9 and D02 is located in the southwest and south central part of LRA Parcel 9 (refer to **Figure 2.2-1**).

Following are the results of the simulator analysis for Build Alternative 3, and a comparison with the baseline:

Baseline

- Under the baseline, Moderate Complaint Risk areas (115 dBP) occur on LRA Parcel 9 in the area proposed for E04 and D02 due to Fort Pickett demolition and large caliber weapons operations (refer to **Figures 3.2-2** and **3.2-3**).
- Under the baseline, High Complaint Risk areas (130 dBP) occur in proximity to firing positions and, during unfavorable weather conditions (PK15 [met]), expand to include the northeast portion of Parcel 21/20 (refer to **Figures 3.2-2** and **3.2-3**).

Build Alternative 3

- Under Build Alternative 3, Moderate Complaint Risk areas compared to baseline would not change east or south of LRA Parcel 9 where the existing VaARNG buildings and Officers Club are located if simulators are operated more than 656 feet (200 meters) away from adjacent buildings.
- Under Build Alternative 3, during average weather conditions (PK50 [met]), High Complaint Risk areas would occur within 520 feet from the source and would be contained within LRA Parcel 9 provided that simulators would not be used in the most southern parts of E04 and D02 (i.e., within 656 feet from the existing Officers Club, VaARNG MEDCOM, or classroom buildings).
- Under Build Alternative 3 during infrequent, unfavorable weather conditions (PK15 [met]), High Complaint Risk areas would occur with simulator activity at E04 and D02 to within 656 feet from the source and could be contained within LRA Parcel 9 depending on simulator location.

- Under Build Alternative 3, Moderate Complaint Risk would occur at the Officers Club, located approximately 1,500 feet southwest of E04 and 500 feet south of D02, provided that simulators are operated more than 656 feet from the property.

Because the area currently experiences a similar level of peak noise from baseline operations, simulator activity in LRA Parcel 9 would not result in a change in the baseline complaint risk levels. Therefore, direct impacts would not be significant.

Firearms Training Area (Small Caliber Weapons)

The Firearms Training Area was consolidated under Build Alternative 3 as compared with 2012 Build Alternative 2. There would be one outdoor range, proposed to be collocated on the existing Fort Pickett Range 8, one combined indoor/ baffled outdoor range (R02/R04), and one indoor live fire shoot house (R03b). These firearms training facilities accommodate small-caliber weapons such as shotguns, rifles, and pistols, and would normally operate during the hours from 7:00 a.m. to 10:00 p.m. The proposed firearms operations are essentially the same as in 2012; therefore, the analysis conducted in 2012 is incorporated into this Supplemental Draft EIS for Build Alternative 3.

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 proposed FASTC firearms ranges include the combined 25-meter Indoor Firing Range (R02) and baffled 100-meter Indoor/Outdoor Firing Range (R04), and a two-story Live Fire Shoot House (R03b). Weapons to be fired in these ranges include handguns (.357 magnum, 9mm, and 40 caliber), M4 Rifle (5.56mm), Shotgun (12 gauge), and Machine Guns (9mm, 0.40 caliber, and 0.45 caliber).

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 (R04) would be less.

For the proposed FASTC gun types, estimates were made of the exterior peak sound levels for two representative distances (328 feet and 656 feet) and three azimuths (i.e., directions) from the firing position(0°, 90° and 180°). Per AR 200-1 (U.S. Army 2007), small arms operations are analyzed using noise zone definitions that define acceptable land uses (refer to **Table 3.2-6**).

Estimates of the exterior peak sound dB levels (dBP) associated with the firing ranges are as follows:

- Noise Zone II (87-104 dBP) and Zone III levels (> 104 dBP) would not change from the baseline and would be contained within Fort Pickett, extending approximately 656 feet from the weapon position.
- Noise Zone III (> 104 dBP) would be localized near the firing ranges, within 328 feet of the weapon position for all types of weapons
- These noise levels would not change the existing baseline noise levels occurring on Parcel 21/20 (refer to **Figure 3.2-4**);

Therefore, based on localized impacts comparable with the existing noise environment, firing range operations under Build Alternative 3 would not result in significant direct or indirect noise impacts.

Occupational Noise Exposure

Noise levels within Fort Pickett are not expected to change much in areas where there are existing operations; however, levels would increase in areas where new facilities are planned, especially in areas located away from existing operational sites.

Table 4.2-1 identifies the FASTC training facility operations and indicates whether either of the federal Occupational Safety and Health Administration (OSHA) criteria for peak sound pressure level or the 8-hour time weighted average level are expected to be exceeded at the facility. It should be noted that each type of facility and operations are evaluated using only one of the two OSHA criteria, depending on whether the noise source is considered impulsive or non-impulsive (continuous).

Table 4.2-1. OSHA Occupational Noise Exposure Evaluation for FASTC Facilities

	OSHA Occupational Noise Exposure Standard 1910.95	
	Impulsive Sound	Continuous Sound
FASTC Training Facilities/Operations	Peak SPL Exceeds 140 dBP	8-hr TWA Exceeds 90 dBA
High Speed Anti-Terrorism Driving, D02 (Tracks 1-3	N/A	No
Skid Pad Exercises at D02 (Tracks 1-3)	N/A	No
Car Impact Events at D02 (Tracks 1-3	N/A	No
Mock Urban and Rural Drive Courses T02, D03 and E04	N/A	No
Off-Road (D05) and Unimproved Road (D04) Drive Courses	N/A	No
Firearms Training (R03b and R02/R04)	Range Interior Locations	N/A
Outdoor Firing Range (existing Fort Pickett Range 8)	Range Interior Locations	N/A
Demolition Ranges (E02, E03, E04, E05b, and E05c/d		
C4/C2 Detasheet, 1/10 lb	<492 feet	N/A
C4/C2 Detasheet, 1/3 lb	<656 feet	N/A
C4/C2 Detasheet, 1 lb	<984 Feet	N/A
C4/C2 Detasheet, 3 lb	<1148 Feet	N/A
Simulators (flash bangs) at D02 and E04	<328 feet	N/A

Notes: *< = less than; > = greater than*

An assessment of occupational noise exposure was conducted for all FASTC facilities to identify areas where personnel would potentially be at risk. The Federal Occupational Safety and Health Administration (OSHA (U.S. Department of Labor 1981) has established dB levels for hearing protection that include limits on continuous and impulsive noise exposure, as follows:

- **Continuous noise (drive tracks and courses)** – the 8-hour, time-weighted average level of 85 dBA was used, which corresponds to the limit for establishing a hearing conservation program.
- **Impulsive noise (explosives and firing ranges)** – the OSHA criterion for unprotected occupational noise exposure is an unweighted peak level of 140 dB.

Drive Tracks and Courses

OSHA noise evaluation of the driving exercises, which are treated as continuous sources, indicates that while the noise levels for individual car passes, skid pad exercises, and car ramming exercises would

exceed 85 dBA at locations close to the tracks, the OSHA 8-hour time weighted average in the vicinity of all tracks and courses would be significantly less than the OSHA limit. This is attributed to the low number of proposed daily operations.

Explosives, Simulators, and Firing Ranges

Demolition training, simulators, and small arms training, which are impulsive sound sources, are expected to generate peak noise levels that exceed the OSHA criteria of 140 dBP at certain distances from each demolition or firing event (**Table 4.2-1**). A single unprotected exposure to loud gunfire can result in temporary hearing loss; repeated exposure to impulsive firearm noise can result in permanent noise-induced hearing loss.

To be in compliance with OSHA 1910.95, FASTC demolition ranges, and firing ranges would provide hearing protection to personnel working and training at these sites during live operations. Therefore, there would be no direct or indirect significant OSHA-related noise impacts with Build Alternative 3.

4.2.3.2 No Action Alternative

Under the No Action Alternative, there would be no impacts to the existing noise environment.

4.2.3.3 Mitigation

Construction activities would be limited to daytime weekday hours to the extent feasible to minimize impacts to surrounding areas and along the routes of construction vehicle travel.

The use of vegetative buffers would be incorporated into the FASTC design to the extent feasible to minimize noise impacts to the surrounding areas.

Operations using simulators (flash bangs) would not occur within 656 feet of the Officers Club adjacent to the boundary of LRA Parcel 9.

To be in regulatory compliance with OSHA 1910.95, FASTC demolition (explosives and simulators) training and firing ranges (small caliber firearms) would provide hearing protection to personnel working and training at these sites during live operations.

Other measures to minimize impacts that would be considered to the extent feasible would be implementation of a process to notify the public in advance of peak noise events.

4.2.4 Land Use and Zoning

There are two criteria that are applied for assessing impacts on land use:

- Consistency with current or documented planned land and submerged land use. Land use consistency includes impacts on access policies and loss of open space.
- Restrictions on access due to changes in land use.

Land use impacts would be considered significant if they would result in a proposed land use that is incompatible with the existing land use or planned land use or land intended for preservation as open space is developed. It is possible for land uses to be inconsistent, but not necessarily incompatible. For example, residential development next to a park is inconsistent, but compatible, while an industrial facility proposed within a residential area may be incompatible and inconsistent.

4.2.4.1 Build Alternative 3

Fort Pickett and Nottoway County

Construction under Build Alternative 3 would remain within the boundaries of Fort Pickett and Nottoway County's LRA, and there would be no direct impact to the town of Blackstone or Nottoway County land uses. Parcels 21/20 and the Grid Parcel comprise approximately 1.5% of Fort Pickett land, and LRA Parcel 9 is 43% of land within Nottoway County's Pickett Park. The proposed project would be compatible with existing land uses of the study area.

Induced business growth or development in Nottoway County and in the town of Blackstone would be highly likely due to services needed by FASTC, trainees and staff spending, and trainees creating demand for overnight accommodations and associated services in proximity to the FASTC facility. The detailed economic analysis is presented in **Section 4.2.5** *Socioeconomic Resources*. There is available space in downtown Blackstone and Nottoway County in proximity to the proposed FASTC site for commercial businesses in the general business and light industrial zones that is both developed and vacant or yet to be developed. Therefore, business growth would be consistent with local plans of development. The potential for business growth would not be expected to exceed available capacity in these zones; therefore, unplanned inducement of growth in areas not planned for such growth is less likely. The availability of sufficient existing water and wastewater utilities, however, may be a constraint to development (refer to **Section 4.2.8** *Utilities and Infrastructure*).

The town of Blackstone has found no conflict with the proposed FASTC facility and consistency with town conservation and development plans. Likewise, the Nottoway Board of Supervisors has found no conflict between the County's Comprehensive Plan and the proposed FASTC facility, and has provided a letter of confirmation (**Appendix C**). During public outreach and in comments on the Draft and Supplemental Draft EIS regarding the proposed action, the community has expressed a strong desire for the development of the FASTC facility and the associated development it would generate. Therefore, no significant adverse direct or indirect impacts to local plans of development, land use, or zoning would occur in the affected areas.

Parcel 21/20

Parcel 21/20 is currently federal land and not zoned. Build Alternative 3 would be consistent with existing military land uses on Parcel 21/20. Recreational activities, primarily hunting, currently being conducted on these parcels would be directly and adversely impacted (see **Section 4.2.7**).

Grid Parcel

Like Parcel 21/20, the Grid Parcel is federal land and is not zoned. Build Alternative 3 would be consistent with existing military uses of the land, but would directly and adversely impact recreational uses of the forested areas. No indirect impacts are anticipated.

LRA Parcel 9

LRA Parcel 9 is currently zoned industrial. Build Alternative 3 would constitute a change in zoning from industrial to federal land. Recreational activities, including hunting, currently being conducted on the property would be adversely impacted (see **Section 4.2.7**). There would be a need to relocate up to nine

businesses and up to five residences from LRA Parcel 9, and the use of the property would change (refer to **Section 4.2.5.1**). The Nottoway Board of Supervisors intends to make these changes and has provided correspondence stating that there is no conflict between the County's Comprehensive Plan and the proposed FASTC facility (**Appendix C**).

There are clear zones (CZs) and accident potential zones (APZs) that extend from the two runways at the Blackstone Army Airfield/Allen C. Perkinson Municipal Airport into LRA Parcel 9. In November of 2010 a meeting was held between the Airport Services Division of the Department of Aviation for the Commonwealth of Virginia and Fort Pickett staff to discuss the types of development allowed in these zones. It was determined that educational services are not allowed in the CZ, APZ I, or APZ II. Government services, however, are permissible in APZ II but not the CZ or APZ I. A final recommendation for the FASTC project was to avoid placing any classroom structures in any of the three zones. In addition, the height of light poles and any training related structures (radio, satellite, cell, or rappel towers) would be limited in the APZs. Due to the adjacency of the runway lighting all exterior lighting in the CZ, APZ I, and APZ II would project downward only. The runway lighting would remain the only up-lighting in the area. The use of pyrotechnics on the driving venues would not be a concern for the aircraft because they pose no vertical hazard.

Direct impacts to land use under Build Alternative 3 would be adverse but not significant; direct impacts to zoning would be minor. No indirect impacts are anticipated.

4.2.4.2 No Action Alternative

Under the No Action Alternative, the FASTC facility would not be developed; therefore, there would be no impacts to land uses.

4.2.4.3 Mitigation

Potential impacts to CZs and APZs would be minimized by avoidance of the construction of classroom structures in these zones. In addition, the height of light poles and any training related structures (radio, satellite, cell, or rappel towers) would be limited in the APZs. Dust and glare would also be limited in these zones to avoid impacts to air navigation. Form 7460 would be submitted to the Federal Aviation Administration for a formal determination that the proposed project would not constitute a hazard to air navigation.

4.2.5 Socioeconomic Resources and Environmental Justice

This socioeconomic impact analysis focuses on the regional economic impact of construction and operation of the proposed FASTC project. Economic impacts are defined to include direct effects, such as changes to employment and expenditures that affect the flow of dollars into the local economy, and indirect effects that result from the "ripple effect" of spending and re-spending in response to the direct effects.

Socioeconomic impacts are often mixed: beneficial in terms of gains in jobs, expenditures, tax revenues, etc., and potentially adverse in terms of growth management issues such as demands for housing and community services.

Factors considered in the analysis of socioeconomic impacts include:

- Redistribution, influx, or loss of population within the study area
- Impacts to employment and income
- Availability of housing
- Effects on educational services
- Changes to the tax base

What are the estimated economic and fiscal impacts?

- 1,633 temporary jobs during peak construction in 2016
- 783 permanent direct and indirect jobs by 2020
- Peak construction economic output: $192.4 million in 2016
- Long term operations output: $100 million annually
- Net positive fiscal revenues for Nottoway, Chesterfield, and other counties
- Appendix J provides the complete Economic and Fiscal Impacts Technical Report

Direct impacts are associated with FASTC itself and include construction and operations jobs; the incomes earned by those workers; the economic output associated with initial purchases of local construction materials and supplies; and goods and services that facilitate the operations of FASTC. Additional direct impacts are generated through non-payroll expenditures and trainee expenditures.

Indirect impacts are the jobs, income, and economic output generated by the businesses that supply goods and services to FASTC. Indirect jobs include jobs at companies that supply construction materials/supplies or support jobs directly related to FASTC operations. Indirect jobs extend to include jobs related to the manufacture of products used to construct and operate the facility, as well as jobs at hotels and restaurants that support trainees. Indirect labor income includes the income earned by people working indirect jobs. Indirect output includes the total sales volume related to the supply of goods and services to FASTC.

Induced impacts are the result of spending of the wages and salaries of the direct and indirect employees on items such as food, housing, transportation, and medical services. This spending creates induced employment in nearly all sectors of the economy, especially service sectors, and may also induce growth in population and related construction.

NEPA requires that an EIS analyze growth inducing effects[26]. A growth inducing effect is defined as an effect that promotes economic or population growth, or the construction of additional housing. A project can bring about the potential for direct and/or indirect growth inducement. A project can lead to direct growth inducement if it involves the development of new housing units. A project can create the potential for indirect growth inducement if it would create sizable new permanent employment opportunities or if it would involve a substantial construction effort with sizable short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support a large temporary population. A project would also have an indirect growth inducement effect if it would remove obstacles to additional growth and development, such as removing a constraint on a required public service, for instance additional public infrastructure such as new roads or increased utilities capacity.

Fiscal impacts provide estimates of changes in local government revenue and costs associated with the proposed project. These fiscal impacts provide insight on the ability of local governments to fund additional public services that may be required as a result of new population generated by the project, such as increases in requirements for police and fire protection, education, and public health services.

The Impact Analysis for Planning (IMPLAN) model, a standard tool used for economic impact analysis, was used to generate economic impacts. The IMPLAN model was also used to generate estimates of local government revenue impacts, while impacts to local government costs were estimated based on expected new population to the region and per capita local government costs. New population is the main driver of potential increases in government costs. The approach to analysis for estimating economic and fiscal impacts is fully presented in **Appendix J**, *Economic and Fiscal Impacts Technical Studies*.

Socioeconomic impacts would be considered significantly adverse if the Proposed Action:

- Would result in a substantial number of job losses
- Would result in a population influx that exceeded available housing capacity within a reasonable distance from the site
- Would result in a population influx that exceeded available classroom capacities in the area
- Would result in an increased tax burden on area residents

This analysis also addresses potential disproportionately high and adverse impacts to minority and/or low-income populations consistent with EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and disproportionate environmental health and safety risks to children consistent with EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*.

Significant impacts to environmental justice populations would occur if there were increased disproportionately high and/or adverse risks for any minority or low-income populations. Significant

[26] 40 CFR 1502.16 (b), 40 CFR 1508.8 (b)

impacts to children would occur if there was an increased disproportionate environmental, health, or safety risk to children.

4.2.5.1 Build Alternative 3

Socioeconomics

The proposed FASTC project would consist of two major phases, a construction phase and an operations phase. Construction of FASTC would last about 5 years: 2015 to 2020. Some FASTC operations would overlap with construction efforts; operations would begin in 2016 and increase in magnitude until full operations commenced sometime in 2020, upon completion of the construction phase. FASTC operations would then continue annually for the foreseeable future; this portion of the operational phase is referred to as the steady-state. Impacts have been assessed according to these phases.

Economic Impacts

Construction Phase

Table 4.2-2 presents economic impacts in terms of the number of part-time and full-time jobs, expressed as full-time equivalent (FTE) jobs that would be generated by the construction of FASTC from 2015 to 2020. Construction would be estimated to begin in 2015 and reach a peak in 2016. At the peak of the construction phase, an estimated 1,633 FTE jobs would be generated or sustained within the study area (1,046 direct construction jobs and 587 indirect/induced jobs). After 2016, construction would begin to wind down. In 2020 less than 50 jobs would be generated in the study area as a result of the construction of FASTC.

Table 4.2-2. Estimated FTE Employment from Construction, 2015-2020

	2015	2016	2017	2018	2019	2020
Direct	160	1,046	713	331	292	23
Indirect/Induced	94	587	417	194	171	13
Total	254	1,633	1,130	525	463	36

The total direct and indirect/induced positions would represent less than 2% of the 2010 study area labor force. The peak year direct construction jobs would represent about 6% of the approximately 18,000 study area construction positions (U.S. Census 2010b). Given the rates of unemployment in the study area, it would be expected that most of these positions would be filled by regional unemployed workers. It is possible that some construction workers would move into the study area in response to the direct job effects in construction, but these workers would most likely leave the region for other opportunities when the construction projects near completion. Any population increase would be minimal relative to the study area population and would coincide with the construction period. No long-term population growth would be expected as a result of direct or indirect/induced job growth associated with construction.

Table 4.2-3 presents economic impacts in terms of estimated labor income that would be generated by the construction of FASTC. At the peak of the construction phase in 2016, nearly $72 million in labor income would be generated within the study area. After 2016, construction would begin to wind down, with about $51 million in labor income generated in 2017, $24 million in labor income generated in

2018, and $21 million in 2019. In 2020, less than $2 million in labor income would be generated as a result of construction activities.

Table 4.2-3. Estimated Labor Income From Construction, 2015-2020, Constant 2014 Dollars

	2015	2016	2017	2018	2019	2020
Direct	$7,085,641	$44,158,682	$31,345,799	$14,555,065	$12,861,321	$1,005,617
Indirect/Induced	$4,392,372	$27,524,453	$19,538,082	$9,072,286	$8,016,562	$626,809
Total	**$11,478,013**	**$71,683,135**	**$50,883,881**	**$23,627,351**	**$20,877,883**	**$1,632,426**

Economic output associated with the proposed construction would be $30.7 million in 2015 and increase to $192 million at peak construction in 2016 (**Table 4.2-4**). Economic output from construction would decline after 2016, with estimated economic output of $137 million in 2017, $63 million in 2018, $56 million in 2019, and $4 million in 2020.

Table 4.2-4. Estimated Economic Output From Construction, 2015-2020, Constant 2014 Dollars

	2015	2016	2017	2018	2019	2020
Direct	$18,649,254	$117,123,578	$83,139,530	$38,604,893	$34,112,520	$2,667,233
Indirect/Induced	$12,017,446	$75,281,087	$53,437,867	$24,813,265	$21,925,796	$1,714,362
Total	**$30,666,700**	**$192,404,665**	**$136,577,397**	**$63,418,158**	**$56,038,316**	**$4,381,595**

The construction effort would not be expected to result in a short- or long-term increase in population. Therefore, there would be no direct or indirect impacts to the study area housing market, including temporary residences such as motels and recreational vehicle parks.

Because there would be no short- or long-term population growth in the study area as a result of construction, there would be no impacts to the capacity and quality of public education services.

With no additional population relocating to the study area as a result of construction activities, government costs related to construction would be minimal and it would be expected that local governments would benefit fiscally. Therefore, detailed fiscal impacts of the construction phase are not analyzed.

Operations Phase

Table 4.2-5 presents impacts in terms of the number of FTE jobs that would result from the operations phase of FASTC. Operations would be estimated to begin in 2016 and reach a steady-state by 2020. At the steady-state phase, an estimated 574 direct jobs and 209 indirect/induced jobs would be generated or sustained within the study area. Total operations-related employment would increase from 78 in 2016 to a steady-state total of 783 jobs in 2020.

Table 4.2-5. Estimated FTE Employment from Operations, 2016-2020

	2016	2017	2018	2019	2020[1]
Direct[2]	57	287	516	545	574
Indirect/Induced	21	105	188	199	209
Total	78	392	704	744	783

Notes: [1] *Estimate for 2020 represents steady-state operations.*
[2] *Direct operations jobs include those directly related to FASTC (339 at steady-state) and direct jobs from operational contract spending and trainee spending, which are estimates generated by the IMPLAN model.*

Table 4.2-6 displays the number of FASTC employees who would be expected to transfer from their current positions to the proposed FASTC facility. These employees would add to the population of the eight-county study area. All other direct and indirect employment associated with FASTC operations would be expected to be filled by current residents of the region and would not result in population growth. In 2016, the first year of FASTC operations, 21 FASTC employees would be expected to transfer to the region. Between 2017 and 2020, an additional 191 employees would transfer. In total, 212 employees would transfer from other locations to the region to work at FASTC.

Table 4.2-6. FASTC Transfer Employees, 2016-2020

	2016	2017	2018	2019	2020[1]
Annual Increase	21	85	85	10	11
Total	21	106	191	201	212

Source: *DOS 2014*

Note: [1]*2020 transfer employees represent a steady-state for operations for the foreseeable future.*

FASTC transfers would likely be accompanied by their families or other household members. The U.S. Census Bureau has determined that the average household size for the U.S., which is assumed to be similar to the average household size of transfer employees, is 2.58 (U.S. Census 2010a). The average household size of 2.58 persons per household implies that for every employee who transfers to work at FASTC, an additional 1.58 persons (for instance, a spouse and 0.58 children, on average) would also relocate to the region, adding to population.

Table 4.2-7 displays the estimated total new population to the study area resulting from FASTC operations, given the number of transfer employees and the assumed average household size. The steady-state phase population increase would represent less than 1% of current and projected study area population. This population would be spread throughout the study area, but, based on a survey of a sample of expected transfer employees, the bulk of new population would be expected to reside in Nottoway (15%) and Chesterfield (70%) counties. This would result in less than 1% increase in both Nottoway and Chesterfield populations. In 2016, the first year of FASTC operations, population of the study area would be expected to increase by 55. Between 2017 and 2020, population would increase by 492. In total, population related to FASTC transfer employees from other locations would add 547 people to the study area.

Table 4.2-7. Total New Population to the Study Area

	2016	2017	2018	2019	2020[1]
Annual Increase	55	218	219	28	27
Total	55	273	492	520	547

Note: [1]*2020 new population represents a steady-state.*

Table 4.2-8 presents impacts in terms of estimated labor income that would result from the operations of FASTC. Operations would be estimated to begin in 2016 and reach a steady-state by 2020. At the steady-state phase, an estimated $34.4 million in direct labor income and $9.5 million in indirect/induced labor income would be generated as a result of FASTC operations. Total labor income from operations would increase from an estimated $4.4 million in 2016 to a steady-state total of $43.9 million in 2020.

Table 4.2-8. Estimated Labor Income From Operations, 2016-2020

	2016	2017	2018	2019	2020[1]
Direct	$3,444,838	$17,221,731	$30,999,115	$32,721,287	$34,443,461
Indirect/Induced	$947,164	$4,735,380	$8,523,684	$8,997,222	$9,470,760
Total	$4,392,002	$21,957,111	$39,522,799	$41,718,509	$43,914,221

Note: [1]*Estimate for 2020 represents steady-state operations. This level of labor income would be expected to continue annually for the foreseeable future.*

Table 4.2-9 presents impacts in terms of economic output that would result from the operations of FASTC. At steady-state operations in 2020, $68.5 million in direct economic output and $28.7 million in indirect/induced economic output would be generated as a result of FASTC operations. Total economic output would increase from $9.7 million in 2016 to a steady-state total of $97.2 million in 2020.

Table 4.2-9. Estimated Economic Output From Operations, 2016-2020, Constant 2014 Dollars

	2016	2017	2018	2019	2020*
Direct	$6,849,127	$34,245,643	$61,642,156	$65,066,719	$68,491,285
Indirect/Induced	$2,868,849	$14,342,861	$25,817,150	$27,251,436	$28,685,722
Total	$9,717,976	$48,588,504	$87,459,306	$92,318,155	$97,177,007

Note: [1]*Estimate for 2020 represents steady-state operations. This level of economic output would be expected to continue annually for the foreseeable future.*

Based on information on expected operational expenditures and estimated industry employment generated by personal spending of income generated directly and indirectly by FASTC, **Table 4.2-10** identifies industries that would be expected to benefit from increased business activity. FASTC trainees would support local restaurants and hotels. In addition, FASTC would require a large amount of automobile maintenance and would be a large local consumer of electrical utilities services. Additionally, the FASTC facility would require building and grounds maintenance, food services, and other contracted operational support (including security services, transportation services, and waste management services). Employees residing within the study area would spend their incomes on such things as food (at restaurants and grocery stores), medical care, real estate, and various items purchased from retail establishments. Operational expenditures and personal spending of income related to FASTC employment would likely lead to increases in business establishments and/or employment in the industries identified in **Table 4.2-10**.

Table 4.2-10. Potential New Business Activity by Industry

FASTC Support Services	Personal Spending
Automotive repair and maintenance	Food services and drinking places
Electric power generation, transmission, and distribution	Offices of physicians, dentists, and other health practitioners
Hotels and motels	Retail Stores - General merchandise
Maintenance and repair construction of nonresidential structures	Retail Stores - Food and beverage
Food services and drinking places	Private hospitals
Investigation and security services	Securities, commodity contracts, investments, and related activities
Electronic and precision equipment repair and maintenance	Real estate establishments

Table 4.2-10. Potential New Business Activity by Industry

FASTC Support Services	Personal Spending
Services to buildings and dwellings	Wholesale trade businesses
Office administrative services	Retail Stores - Motor vehicle and parts
Waste management and remediation services	Nursing and residential care facilities
Facilities support services	Retail Non-stores Direct and electronic sales
Transportation and support activities for transportation	Retail Stores - Miscellaneous

Combined Construction and Operations

To summarize the estimated economic effects of the proposed FASTC facility, the combined economic effects of construction and operations on jobs and output expressed in dollars are discussed below.

Table 4.2-11 presents economic impacts in terms of the annual FTE jobs that would result from the combined construction and operations of FASTC. Construction would begin in 2015, reaching a peak in 2016. Operations would begin in 2016, reaching a steady-state by 2020. From 2016 to 2019, there would be more than 1,000 FTE jobs in the study area associated with Build Alternative 3. Since there would be some construction work done in 2020, estimated impacts for 2021 represent the steady-state for combined impacts.

Table 4.2-11. Estimated FTE Employment from Combined Construction and Operations 2015-2021

	2015	2016	2017	2018	2019	2020	2021[1]
Direct	160	1,103	1,000	847	837	597	574
Indirect/Induced	94	608	522	382	370	223	209
Total	254	1,711	1,522	1,229	1,207	820	783

Note: *[1]Estimate for 2020 represents steady-state operations but some construction activity would also generate impacts. As such, 2021 represents the steady-state for combined impacts.*

Table 4.2-12 and **Figure 4.2-5** show the beneficial economic output impacts from the combined construction and operations of FASTC. From 2016 to 2019 between $150 million and $200 million annually in combined economic output would be generated. The steady-state level of about $100 million annually would extend in the foreseeable future.

Table 4.2-12. Estimated Economic Output From Combined Construction and Operations, 2015-2021, Constant 2014 Dollars

	2015	2016	2017	2018	2019	2020	2021[1]
Direct	$18,649,254	$123,972,705	$117,385,173	$100,247,050	$99,179,240	$71,158,518	$68,491,285
Indirect/ Induced	$12,017,446	$78,149,936	$67,780,729	$50,630,415	$49,177,231	$30,400,084	$28,685,722
Total	$30,666,700	$202,122,641	$185,165,902	$150,877,465	$148,356,471	$101,558,602	$97,177,007

Notes: *[1]Estimate for 2020 represents steady-state operations but some construction activity would also generate impacts. As such, 2021 represents the steady-state for combined impacts. This level of economic output would be expected to continue annually for the foreseeable future.*

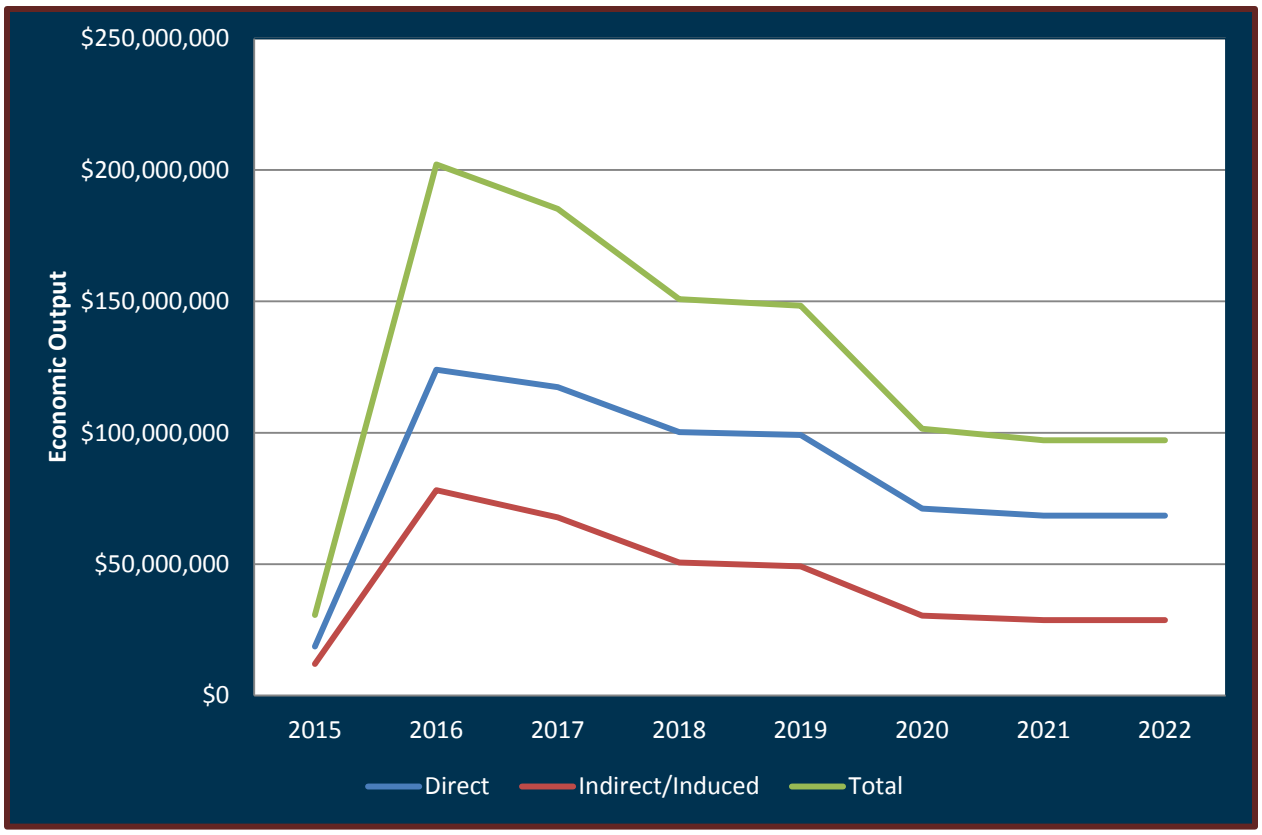

Figure 4.2-5. Economic Output Impact from Combined Construction and Operations, 2015-2022, Constant 2014 Dollars

Induced Growth

Business Growth

Induced business growth resulting from employee and trainee spending in the study area is likely to occur. This potential would be greatest in Chesterfield County where most personnel are expected to reside and economic output is expected to be the highest. However, business growth or development would also be likely in Nottoway County, including the town of Blackstone, due to proximity to the FASTC facility and the potential for business contracting opportunities and new commercial development. Overall, the shift in having trainees stay overnight and eat in the local community as opposed to having housing and food services as part of the proposed FASTC complex at Fort Pickett is expected to result in positive opportunities for commercial and economic development in the region.

There may be spinoffs from spending by full time employees moving to and commuting in the area. Of the expected 212 transfer employees and their families estimated to move to the study area, 148 employees and families are expected to live in Chesterfield County. Although they will all commute to/from work from Chesterfield to FASTC in Nottoway County, there is limited likelihood that any expenditures during these daily commutes would be enough to induce significant new business growth along the route.

Induced growth from commuter traffic would affect businesses such as gasoline stations and eating and drinking establishments. Increased commuter trips would be likely on U.S. Route 460, Cox Road, and other roadways from the north and east. Considering potential travel routes of the new commuters, the potential for cumulative induced growth effects would be most likely dispersed along travel routes within rural agricultural zones in Nottoway, Chesterfield, and Amelia Counties, and along U.S. Route 460 in Dinwiddie County.

Direct FASTC trainee spending would be expected to generate induced growth. During the first year of training operations in 2016, average attendance at the facility would be approximately 60 students daily, and approximately 1,000 students would be trained annually. The number of trainees would increase as FASTC becomes fully operational. Between 2018 and 2020, at full operation, average daily attendance would increase to 600 trainees, and approximately 9,200 students would be trained annually. The average training duration would be approximately 14 days. As indicated, these trainees would stay overnight and eat in the area during their training time.

Table 4.2-13 shows expected annual number of trainee-days (annual number of trainees multiplied by the average number of days each trainee would be at FASTC) and annual trainee expenditures broken down by type of expenditure. Trainee-days were multiplied by an estimate of daily per-trainee expenditures to yield total trainee expenditures in the study area. Daily per-trainee expenditures were estimated based on lodging rates negotiated by DOS (DOS 2014) and per diem government travel rates. Daily per-trainee spending was estimated to be $121 per trainee day, with $75 per trainee day spent on lodging, $41 per trainee day spent on meals, and $5 per trainee day spent on incidentals.

Table 4.2-13. Annual Trainee-Days and Estimated Trainee Expenditures, 2016-2020, Constant 2014 Dollars

	2016	2017	2018	2019	2020[1]
Annual Trainee-days	**12,880**	**64,400**	**115,920**	**122,360**	**128,800**
Annual Trainee Expenditures	**$1,558,480**	**$7,792,400**	**$14,026,320**	**$14,805,560**	**$15,584,800**
Trainee Expenditures on Lodging[2]	*$966,000*	*$4,830,000*	*$8,694,000*	*$9,177,000*	*$9,660,000*
Trainee Expenditures on Meals[3]	*$528,080*	*$2,640,400*	*$4,752,720*	*$5,016,760*	*$5,280,800*
Trainee Expenditures on Incidentals	*$64,400*	*$322,000*	*$579,600*	*$611,800*	*$644,000*

Sources: *DOS 2014 (for trainee-days and lodging expenditures), GSA 2014b (for meals/incidentals).*

Notes: [1]*Estimate for 2020 represents steady-state trainee expenditures. This level of expenditure would be expected to continue annually for the foreseeable future.*

[2]*Trainee expenditures on lodging would be funded via federal contracts with hotels/motels within the ROI.*

[3]*Some meals would be eaten on-site during the instructional day and funded via federal contracts with food services providers.*

Given the number of trainee days, there would be a consistent daily demand for about 350 hotel/motel rooms. The only motel in Blackstone is The Wedgewood Motor Inn located on South Main Street. Nottoway County does not currently have the capacity to meet this demand; therefore, most trainee lodging is assumed to occur in Chesterfield County unless new motel/hotel development was to occur closer to the FASTC at Fort Pickett.

An estimate of the number of new, induced business establishments was determined using the total number of additional jobs created by the Proposed Action, as estimated in the economic analysis. Using data from the 2007 Economic Census (the most recent available with data by detailed industry), a factor

of employees per establishment by detailed industry category was developed. The factor of employees per establishment was multiplied by the number of projected jobs to calculate an initial measure of business establishments that would be induced by the Proposed Action. This measure, however, did not account for job growth at existing establishments, so an adjustment was made—the initial measure of induced establishments was adjusted downward by 30% using the conservative assumption that 30% of jobs generated by the Proposed Action would work at existing establishments and 70% would work at new induced establishments. **Table 4.2-14** shows the factors used in this analysis and the resulting number of establishments, by detailed industry, which would be induced by the proposed action.

The analysis indicates that induced business growth as a result of the Proposed Action could result in approximately four additional eating and drinking establishments, two hotels and/or motels, three automotive maintenance facilities, two transportation and transportation support facilities, one real estate establishment, and one building services establishment (**Table 4.2-14**).

Table 4.2-14. Potential Business Establishments Projected to be Induced by the Proposed Action

	Total Jobs Generated	Estimated Factor - Employees Per Establishment	Induced Establishments - Initial Measure	Adjustment for Job Growth at Existing Establishments	Estimated Induced Establishments - Final Adjusted
Food services and drinking places	103	18	6	70%	**4**
Automotive repair and maintenance	26	6	5	70%	**3**
Hotels and motels	82	31	3	70%	**2**
Transportation and support activities for transportation	18	7	3	70%	**2**
Real estate establishments	10	6	2	70%	**1**
Services to buildings and dwellings	31	23	1	70%	**1**

Sources: *Project IMPLAN Modeling Results; US Census Bureau, 2007 Economic Census, Geographic Area Series*
Note: *Table shows all detailed industries where model projected at least one establishment would be induced.*

This potential induced growth would most likely result in development in the study area, particularly in the commercially zoned areas in the town of Blackstone and other areas located in proximity to the Main Gate and West Gate of Fort Pickett, east and south of Blackstone. The town of Blackstone is located approximately two miles west of Fort Pickett. Much of downtown Blackstone is zoned light to medium residential with general business zones along Main Street. Blackstone also has light and heavy manufacturing zones in the northern part of town (Blackstone 1992). There are also appropriately zoned and vacant properties within nearby Nottoway County suitable for accommodating this induced development. Locations with compatible zoning and location are listed below:

- Commercially zoned parcels along Main Street in town of Blackstone
- General business zoned parcels near the intersection of Route 460 and Military Highway approximately 2 miles from the Main Gate of Fort Pickett
- General business zoned properties (approximately 380 acres available) located in Pickett Park, immediately adjacent to Main Gate of Fort Pickett

Induced business development could also be accommodated along the commercial corridor of Route 40 south of Blackstone and at other locations on Business 460 north of Blackstone. This assessment assumes no changes in current county or town zoning, although continuing updates to land use controls are always possible.

Some constraints to development could include the provision of water and sewer. Currently, town of Blackstone provided water and wastewater treatment services are available only within the town limits. Further, the town is required by the U.S. Army to always reserve an available wastewater treatment capacity of 1.5 mgd or 75% of total capacity for the Army in the event it is needed for full mobilization at Fort Pickett. (Blackstone 2014).

The degree to which induced business growth occurs in Nottoway County depends in part on local and county economic development planning strategies that promote and plan for the accommodation of growth in a manner that meets potential demand. Managing the effects of this growth on the community and the environment through planning would be necessary to ensure the growth meets the needs and goals of the communities. Based on input from members of the business community during the Supplemental Draft EIS process and other public outreach undertaken by GSA and DOS, induced business growth would be a beneficial impact in the study area.

Chesterfield County promotes and plans for business development and has the capacity to absorb growth while doing so in a way that minimizes environmental impacts (Chesterfield Strategic Plan, Draft Comprehensive Plan-Economic Development).

Housing Growth

The FASTC project does not involve the development of new housing units, so no direct growth inducement would be expected. The construction effort would not be expected to require a sizable temporary workforce population to relocate to Nottoway County and it is not expected that temporary construction workforce housing would be developed, so no indirect growth inducement would be expected from the construction phase.

A survey of a sample of expected FASTC transfer employees indicated that 15% expected to reside in Nottoway County, 70% in Chesterfield County, and 15% in the remaining counties of the study area. Based on this survey, the estimated demand for housing during the steady-state phase would represent less than 1% of the total housing units and 10% of the available housing units in Nottoway County. In Chesterfield County, increased demand would represent less than 1% of the total housing units and 3% of the available housing units. Some additional housing may be developed by the private market to support FASTC employees who choose to live in Nottoway County and other counties in the study area. In Chesterfield County, new housing development would not be expected specifically to support FASTC employees because housing demand would represent a small portion of available housing. The phasing of personnel transfers over five years beginning in 2016 would result in a gradual effect on the housing market.

Housing and Business Relocations

As a result of the proposed land acquisition, there would be up to five occupied residential units, and up to nine businesses that would be displaced. Some of these individuals would be considered low-income.

To assist with relocation and to avoid the potential for disproportionate impacts on the low income residents, the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Section 201*, and the *Uniform Relocation Act Amendments of 1987* (Uniform Acts) would be adhered to during the relocation process. The Uniform Acts were passed as a means of providing uniform and equitable treatment for persons displaced by federal or federally assisted programs. Under the Federal Relocation Assistance Program, any individual, family, business, or farm displaced by a federal or federally-assisted program shall be offered relocation assistance services for the purpose of locating a suitable replacement property. Reimbursement of moving costs may be paid on the basis of actual reasonable moving costs and related expenses or under certain circumstances, a fixed payment may be provided.

Because relocation of individuals and businesses would be required under Build Alternative 3, GSA has initiated relocation planning, and counselors have contacted the individuals and businesses to advise people about relocation assistance benefits. GSA has undertaken a proactive public outreach effort to gather information in order to meet any special concerns related to the potential relocation. Relocation services would be provided by GSA to assist individuals in a successful relocation[27]. GSA would prepare a relocation assistance plan before the acquisition of any private parcels.

As part of the relocation planning, GSA has performed the initial outreach and made a preliminary determination as to the availability of replacement housing. An adequate supply of comparable housing exists in the local market; however, the cost to rent would likely be higher than what is currently being paid. For this reason, relocation benefits would have to include monthly rent differential supplement payments, as provided under the Last Resort Housing provisions of the Relocation Assistance Program. Therefore, with relocation assistance, there would be no significant adverse impacts to displaced residents.

There are limited options in the Blackstone area for commercial sales or leases as comparable relocation options for displaced businesses. However, there are comparable options within 10 miles of the current location on LRA Parcel 9. Therefore, there would be a geographic impact to the businesses. This impact would be minimized through compliance with the Uniform Acts that would provide relocation assistance services for the purpose of locating a suitable replacement property. Reimbursement of moving costs may be paid on the basis of actual reasonable moving costs and related expenses or under certain circumstances, a fixed payment may be provided. As a result, this impact would not be significant.

One property that was reported as a potential relocation in the 2012 Draft EIS was Madeline's House, a shelter for victims of domestic violence and sexual abuse. The shelter moved from this location in 2013 and is no longer present in the study area.

Schools

An estimated 123 new residents to the region would be school-aged children. This estimate assumes, based on the national average household size of 2.58 (U.S. Census 2010a), that the 212 FASTC employees moving to the region would each have one spouse and 0.58 school-aged children. The estimate of 123 is equal to the number of relocating employees (212) multiplied by 0.58. Of these,

[27] In accordance with 49 CFR Part 24

approximately 15% would attend school in Nottoway County and 70% in Chesterfield County. The remaining 15% would be expected to attend school in the surrounding counties. This would result in 19 new students in Nottoway County schools, 86 in Chesterfield County schools, and 18 in schools of the other counties. Nottoway County has approximately 2,450 students enrolled in their system, and the additional 19 students would represent a minor increase of 1%. Total enrollment at Chesterfield County schools is 58,000 students (Chesterfield County Public Schools 2012), and the estimated 86 additional students would increase this population by less than 1%. The increase in student population and impact to the school districts would not be significant.

Fiscal Impacts

The fiscal impact analysis focuses on the two counties where impacts would be expected to be the largest – Nottoway and Chesterfield Counties. Estimated fiscal impacts compare projected local government revenue to projected local government costs during the operations phase of FASTC. Because more FASTC transfer employees would live in Chesterfield County, local government revenue and local government costs would be greater there than in Nottoway County. Local governments in both counties would benefit from positive net revenues as a result of FASTC operations.

Table 4.2-15 shows projected local government revenue, cost, and net revenue (revenue minus cost) for Nottoway County from 2016 to 2020. In 2020, the first year of FASTC steady-state operations, local governments in Nottoway County would collect about $850,000 in revenue and expend about $370,000. Steady-state total net revenue for local governments would be about $478,000. In addition to revenues presented in **Table 4.2-13**, Nottoway County would receive a one-time payment for the sale of the LRA parcels. Since the amount of the payment is unknown at this time, and the payment is assumed to be net revenue neutral over the long-term, the value of the sale is not included in the fiscal analysis (See **Appendix J** for details on this assumption).

Furthermore, estimates presented in **Table 4.2-15** assume no hotel development in Nottoway County. If a hotel were to be built and capture a large portion of trainee expenditures on accommodations, Nottoway County revenues would be substantially higher.

Table 4.2-15. Nottoway County Local Government Revenue, Cost, and Net Revenue, 2016 to 2020, Constant 2014 Dollars

	2016	2017	2018	2019	2020[1]
Revenue	$84,703	$423,512	$764,696	$804,673	$847,024
Total Cost	$38,084	$190,420	$342,156	$361,199	$380,241
Cost (Residential Population)	$17,719	$88,597	$159,474	$168,334	$177,194
Cost (Direct Operations)	$20,365	$101,823	$182,682	$192,865	$203,047
Net Revenue	$46,619	$233,092	$422,540	$443,474	$466,783

Notes: [1]*2020 local government revenue, cost, and net revenue represents a steady-state. These numbers would be expected to continue annually for the foreseeable future.*

Table 4.2-16 shows projected local government revenue, cost, and net revenue (revenue minus cost) for Chesterfield County from 2016 to 2020. In 2020, the first year of FASTC steady-state operations, local governments in Chesterfield County would collect about $2.4 million in revenue and expend about $1 million. Net revenue for local governments would be about $1.3 million.

Table 4.2-16. Chesterfield County Local Government Revenue, Cost, and Net Revenue, 2016 to 2020, Constant 2014 Dollars

	2016	2017	2018	2019	2020[1]
Revenue	$235,289	$1,176,445	$2,117,600	$2,235,243	$2,352,887
Cost	$103,312	$516,561	$929,809	$981,465	$1,033,121
Net Revenue	$131,977	$659,884	$1,187,791	$1,253,778	$1,319,766

Notes: [1]*2020 local government revenue, cost, and net revenue represent a steady-state. These numbers would be expected to continue annually for the foreseeable future.*

It is estimated that all local governments in the study area would be able to cover all additional public services costs (related to police and fire protection, education etc.) and have surplus revenue that would result from the project, leading to beneficial fiscal impacts to the region.

Environmental Justice

Economic impacts from the project are expected to be beneficial and would, generally, stimulate the economy of the region through the creation of jobs, income, and economic output. While many of the jobs created would be taken by people in-migrating to the area for the purposes of working at FASTC, many jobs would be available to current residents of the area who are either currently unemployed or underemployed. The additional employment opportunities would be open for application to all racial groups at all levels of income and therefore would be beneficial to populations of environmental justice concern.

There are no adverse impacts to the natural or built environments that would result from the project that would disproportionately affect the minority or low income populations of the study area. **Figure 4.2-6** shows areas with potential for impacts of environmental justice concern related to noise. As shown, the effects of noise may occur in proximity to, but would not intrude upon or otherwise disproportionately impact, a minority and low income area northwest of the proposed project site as compared with other areas. Peak noise shown in the figure is the worst case scenario expected to occur infrequently while day to day operations noise would remain within the existing Fort Pickett boundary (refer to **Section 4.2.3.3**). Further, the minority area is located in the vicinity of the Blackstone Army Airfield and already experiences noise from military aircraft in addition to existing noise from Fort Pickett operations.

Additional traffic would occur with construction and operations of Build Alternative 3 on Route 460, Cox Road, and Military Road, adjacent to the minority and low income area. However, these roadways primarily traverse industrial and general business zones where there are few residents (refer to **Figure 3.2-5**). Noise and traffic from construction trucks may temporarily impact a few residences in proximity to the travel routes both within and outside of the minority area. Traffic from operations would also affect these areas. These impacts would not be disproportionate to minority residents but rather would be experienced by the limited number of residents in the surrounding area and by all travelers of these roadways.

As a result of the proposed land acquisition, there would be five occupied residential units and nine businesses that would be displaced. It is assumed that some of these individuals would be considered low income. With relocation assistance that would be provided by GSA, the relocations would not result in disproportionately high or adverse environmental effects on minority or low income populations.

This Supplemental Draft EIS has identified no adverse environmental impacts that would have disproportionately high or adverse environmental effects on minority or low-income populations. Therefore, Build Alternative 3 would not result in significant adverse impacts to environmental justice communities.

Protection of Children

Access to training ranges would be discouraged by the use of drop bar gates on access roads to training areas. All training areas would also have perimeter signage indicating that entry is not permitted. These training boundary protections are consistent with those currently in force at Fort Pickett. Therefore, potential for health and safety risks associated with accidental access by children into the training areas is minimized. Children attending the daycare center within the Officers Club are supervised at all times and are not at risk for accidental entry to training areas. All training areas including driving tracks would be designed to contain all training activities within the site such as explosives, small arms munitions, and cars on the driving tracks so that there would be no impact to public safety.

There would be increases in traffic and noise in proximity to the daycare center; however, both of these effects are consistent with the existing environment at Fort Pickett and would be minimized in the indoor environment of the daycare center through the noise reduction value of the building (approximately 15 dB). In the outdoor environment, noise levels would be the same as currently experienced although the frequency of noise producing events would increase. The daycare center would remain within the 57 dB LUPZ as it is currently. This zone is compatible with sensitive land uses such as schools. Operations using simulators (flash bangs) would not occur within 656 feet of the daycare center property adjacent to the boundary of LRA Parcel 9 to avoid increasing peak noise event levels above the existing levels of Fort Pickett noise. Peak noise events of 115 dB may occur but would be below the OHSA criterion for requiring protection (140 dB). Therefore, there would be minor impacts, but these effects would not result in health or safety risks to children. There are no other environmental impacts that would affect the health or safety of children.

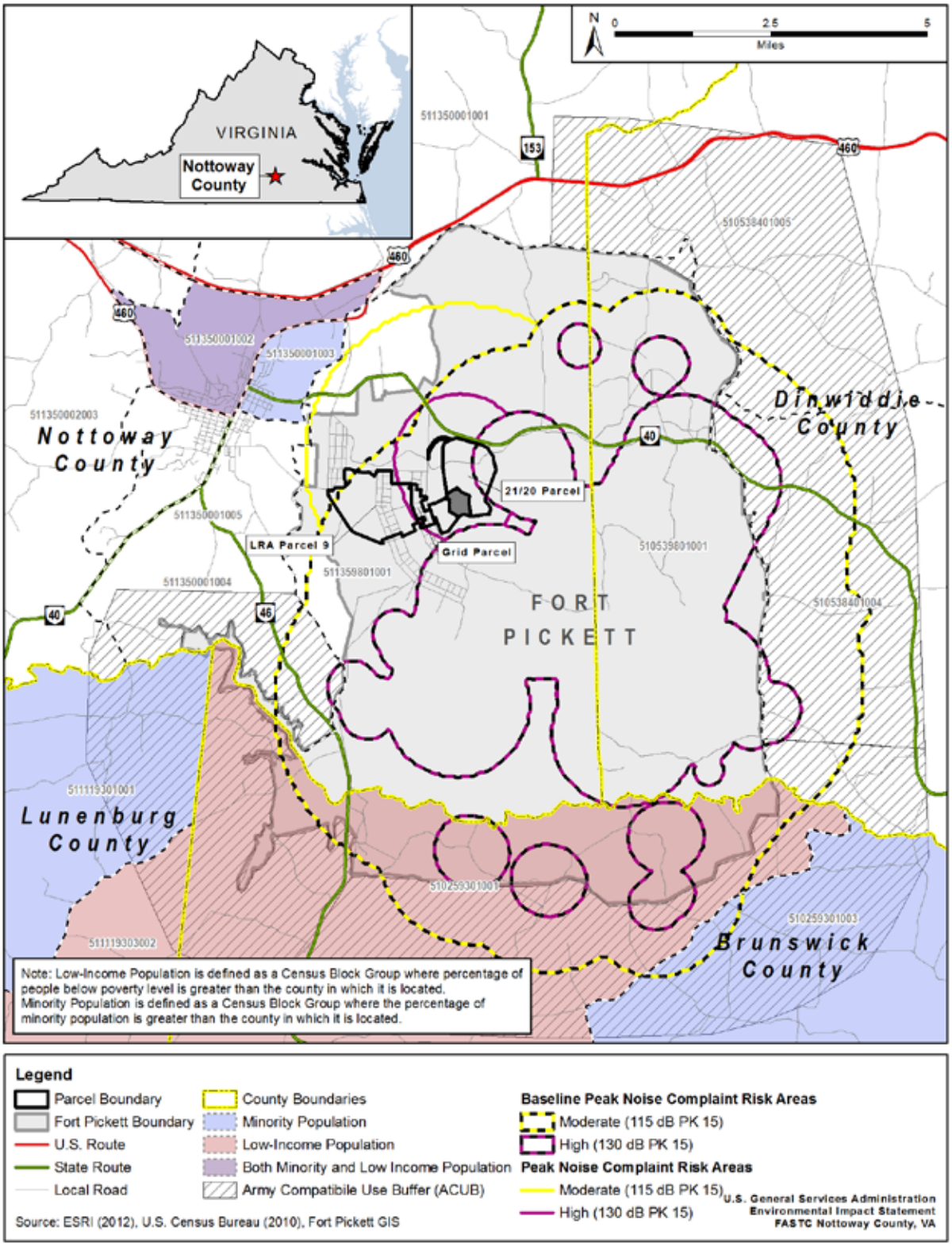

Figure 4.2-6. Potential Impacts of Environmental Justice Concern

4.2.5.2 No Action Alternative

Socioeconomics

Under the No Action Alternative FASTC would not be constructed. The project's potential beneficial impacts associated with generating jobs, labor income, and economic output would not be realized. There would be no increase in the population or relocation impacts under the No Action Alternative.

Environmental Justice

Under the No Action Alternative FASTC would not be constructed. Therefore, there would be no disproportionately high or adverse environmental effects to minority or low-income populations in the study area.

Protection of Children

Under the No Action Alternative FASTC would not be constructed. Therefore, there would be no disproportionate environmental health and safety risks to children.

4.2.5.3 Mitigation

To assist the communities of the study area in planning for growth, GSA and DOS would take an interest in seeing that the potential economic benefits of the FASTC development would be leveraged to help support sustainable economic development in the community. Through GSA's Urban Development/ Good Neighbor program and USEPA's Community Assistance and Research expertise, GSA and USEPA, in a joint effort with the town, county, Fort Pickett, and the Virginia Economic Development Partnership, will assist Blackstone and Nottoway County in preparing for FASTC-related development. GSA and USEPA will provide technical expertise to the community to maximize the value of federal investment. GSA and USEPA will also provide analysis to local officials for consideration, and provide advice on potential resources that may assist local planners in this effort.

Impacts to displaced residents and businesses on LRA Parcel 9 would be minimized through compliance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act,* which would provide assistance to the residents and businesses.

Proposed security measures, including drop bar gates and signage, would reduce the potential for inadvertent entry into training areas. All training areas including driving tracks would be designed to contain all training activities within the site such as explosives, small arms munitions, and cars on the driving tracks so that there would be no impact to public safety.

Other measures that would be considered to minimize noise impacts on children attending the daycare center at Fort Pickett would be implementation of a process to notify the daycare center in advance of peak noise events.

4.2.6 Traffic and Transportation

A traffic impact analysis was conducted in 2014 for Build Alternative 3 and the No Action Alternative. The analysis evaluates the full build-out of Build Alternative 3 (i.e., 100 percent of project traffic) in 2018 because 90 percent of the training program would be operational by 2018 and most of the project traffic effects would be experienced in the study area. Training would be 100 percent operational by 2020. The

traffic impact analysis also analyzes the No Action Alternative for the year 2018. The explanation of analysis methods and detailed results are presented in the report *Traffic Impact Analysis* provided in **Appendix H**. This traffic impact analysis is a supplement to the traffic impact analysis that was prepared for the 2012 Draft EIS and incorporates many of the key assumptions, traffic counts, and methods used in the preceding document. The traffic impact analysis analyzes the study intersections listed in **Section 3.2.6.1,** and for Build Alternative 3, analyzes two options for access points to the proposed FASTC facilities. Impacts would be considered significant if the alternative results in unacceptable traffic congestion or places a substantial extra burden on the capacity of transportation facilities.

4.2.6.1 Build Alternative 3

Construction

Temporary traffic impacts would result from demolition and construction activities. The following types of additional trips are expected to be added to the highway network:

- Construction worker commuting trips;
- Trips involving the delivery and removal of construction equipment and building materials; and
- Trips involving the removal of demolition debris and excess fill material.

The duration of these trips would be temporary, and would not occur after the completion of project construction. Whereas construction worker commuter trips are expected to be concentrated during the traditional peak commuting periods, other trips would likely be dispersed throughout the typical working day. Regardless of the access option selected, construction traffic would approach the project site via Dearing Avenue, and would not enter Fort Pickett at either the Main Gate or the West Gate. The existing barrier across Dearing Avenue to the north of W. 10th Street would be temporarily opened to construction traffic until construction activities are completed. GSA and DOS would cooperate with Fort Pickett to ensure that appropriate security protocols are observed for construction traffic entering the installation. Given the temporary nature of construction traffic, and considering that all traffic movements are characterized by level of service (LOS) C or better conditions under the No Action Alternative (refer to **Section 4.2.6.2**), the addition of construction related trips as would occur under Build Alternative 3 is not expected to result in a significant traffic-related impact.

Operations

Approach to Analysis

Build Alternative 3 operations under year 2018 conditions were analyzed using the following elements:

- Peak hour (i.e., 6:30 to 7:30 a.m. and 4:00 to 5:00 p.m.) capacity analysis at 15 intersections;
- Turn lane storage and taper requirements at four intersections on designated Virginia Department of Transportation (VDOT)-maintained facilities; and
- Peak hour traffic volumes and staffing requirements at Fort Pickett access gates.

The traffic analysis also addresses traffic signal warrants and provides a qualitative assessment of site access and internal circulation.

Two access options are analyzed (refer to **Figure 2.2-3**). Under Option A, access for operations-related traffic to FASTC would be provided at the existing Fort Pickett Main Gate (i.e., on Military Road south of

Darvills Road) and the existing Fort Pickett West Gate (i.e., on West Entrance Road west of Military Road). The existing closed gate across Dearing Avenue north of W. 10th Street would remain closed under this option.

Under Option B, the main access to FASTC would be at an additional access point that would be established on Dearing Avenue, north of W. 10th Street (i.e., the existing closed gate would be replaced by an operating controlled access). This analysis assumes Fort Pickett traffic would continue to access through the Main Gate and the West Gate, and a limited amount of FASTC traffic would also access through these existing gates. The majority of all FASTC trips (i.e., approximately 80 percent), including all bus and minivan trips, would be directed to the proposed Dearing Avenue gate under Option B.

Access to and from the FASTC facility would be concentrated along Dearing Avenue between Military Road and W. 10th Street. A one-way loop circulation road (or "Entry Loop") would be constructed to the west of Dearing Avenue, and would form two intersections with this roadway. The one-way traffic flow would be from north to south. The Entry Loop would provide access to and from the FASTC Core Area. The Core Area would accommodate the majority of trips accessing the facility. These trips include passenger cars driven by instructors and staff, buses transporting students from area hotels, and minivans transporting students from the Core Area to training venues within FASTC.

Traffic Generation and Distribution

Build Alternative 3 would affect traffic patterns in the following ways:

1. Additional passenger car and bus trips would be added to intersections throughout the study area as the result of commuting trips by instructors and staff and the transport of students to and from area hotels;
2. Minivans would be driven from various locations to the Core Area in order to transport students to training venues;
3. A one-way Entry Loop would be constructed to the west of Dearing Avenue to provide a connection to the Core Area;
4. Additional minivan trips would be added to project access points along Dearing Avenue (only) as students are transported from the Core Area to training venues; and
5. For Option B (only), establishing a new access gate on Dearing Avenue is expected to cause the redistribution of existing trips from the Main Gate to the proposed Dearing Avenue gate.

FASTC staff, consisting of 339 employees, is anticipated to commute daily to the facility in personally owned vehicles, although a small portion may utilize van pools, if available. 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. Build Alternative 3 would add 240 trips (182 inbound and 58 outbound) to study area intersections during the morning peak hour, and 233 (65 inbound and 168 outbound) in the afternoon peak hour. Minivan trips between the Core Area and FASTC training venues include 24 outbound trips from the Core Area in the morning peak hour, and 24 inbound trips to the Core Area in the afternoon peak hour. Only a portion of these trips would occur outside of the FASTC facility, and these trips would be limited to project access points on Dearing Avenue.

The following assumptions for regional distribution of project traffic were made based on expected origins and destinations of project traffic:

- 75 percent to/from the northeast via U.S. Route 460 (Richmond and Washington D.C.);
- 2 percent to/from the east via Darvills Road;
- 2 percent to/from the south via Brunswick Road (VA Route 46);
- 2 percent to/from the southwest via Kenbridge Road (VA Route 40);
- 14 percent to/from the west and northwest via US Route 460 (i.e., the towns of Farmville, Burkeville, and Crewe); and
- 5 percent to/from within the Town of Blackstone.

Under Option A, all project trips would enter Fort Pickett via the Main Gate and the West Gate. Based on the origins and destinations of project traffic, it is assumed that approximately 90 percent of project trips would enter the installation at the Main Gate, while approximately 10 percent would enter via the West Gate. Under Option B, only a limited amount of project traffic would enter Fort Pickett using these two existing gates. It is assumed that approximately 80 percent of trips under Option B, including all bus and minivan trips, would enter Fort Pickett using the proposed Dearing Avenue gate. The remaining 20 percent, consisting of passenger vehicles, would be evenly split between the Main Gate and the West Gate (i.e., approximately 10 percent entering at each of these two gates).

Internal shuttle trips between the Core Area and training venues would be split between LRA Parcel 9 and the Parcel 21/20. Based on the number of venues within each parcel, it is assumed that 55 percent of internal shuttle trips would be between the Core Area and LRA Parcel 9. These trips would be entirely within the FASTC boundary. The remaining 45 percent of internal shuttle trips would travel between the Core Area and the Parcel 21/20. Outbound trips destined for the Parcel 21/20 would exit the Entry Loop at Dearing Avenue, and proceed to the north on Dearing Avenue for a short distance before turning right onto Foley Road to enter the Parcel 21/20. These external trips are accounted for in Build Alternative 3's traffic assignment.

Capacity Analysis Results

The results of the traffic capacity analysis show that most traffic movements at all intersections would be characterized by acceptable level of service (LOS) A or B with several movements having LOS C or better conditions during both peak hours for both access options. Because Build Alternative 3 would not cause any movement to exceed the minimum performance standard of LOS D, there would be no adverse traffic impacts and no avoidance, minimization, or mitigation measures would be needed.

Because none of the traffic movements at any of the intersections are characterized by LOS D, E or F under Option A or B, no traffic signal warrant analysis was performed. Because intersection traffic movements would operate at LOS C or better during both peak hours, traffic signal installation would not be needed to address any projected future intersection delay caused by project-related traffic or future traffic growth without Build Alternative 3.

Turning Lane Analysis Results

A turning lane analysis was also performed for projected year 2018 traffic volumes using VDOT design criteria for Access Management (VDOT 2005). These criteria address turning lane needs and design features to ensure safe and efficient traffic movements.

The turning lane analysis was first performed for the No Action Alternative (See **Section 4.2.6.2**). The analysis concluded that in 2018, without the proposed project, two intersections will have turning lane storage that does not meet VDOT design criteria.

Under Build Alternative 3 Option A, the turning lane analysis determined that the additional project traffic would result in the existing turning lane storage being less than VDOT design standards at one additional intersection. Under Option B, the turning lane analysis determined that the additional project traffic would result in the existing turning lane storage being less than VDOT design standards at three additional intersections, one of which is in common with Option A. To address these turning lane storage criteria, additional study by VDOT of these turning lane improvements would be warranted. Following are the three intersections (refer to **Figure 3.2.8** for the locations) and the turning lane improvements that may be warranted for each option to bring the intersection turn lane design up to VDOT standards.

- U.S. Route 460/Cox Road (intersection 1) – the storage allowed at the westbound left turn movement would be less than the design standard under Option A or B. The improvement would be to extend the existing westbound left turn lane storage and taper.
- Darvills Road/Military Road (intersection 3) – the storage allowed at the westbound right turn movement would be less than the design standard under Option B only. The improvement would be a new exclusive westbound right turn lane, including storage and taper.
- Darvills Road/Dearing Avenue (intersection 13) – the storage allowed at the eastbound right turn movement would be less than the design standard under Option B only. The improvement would be to extend the existing eastbound right turn lane storage and taper.

Fort Pickett Gate Analysis

Neither option would increase traffic levels at either the Main Gate or the West Gate so as to necessitate additional guards to process inbound trips. Under Option B, the projected future inbound volume at the proposed access gate on Dearing Avenue would be 148 vehicles during the morning peak hour. This is substantially below the minimum threshold of 375 vehicles per hour established by Virginia Army National Guard for two guards per lane. Therefore, based on Virginia Army National Guard criteria, a single guard would suffice at this location. However, the actual number of guards at this gate would be determined based upon DOS doctrine and practice for access control.

Internal Circulation

Access to and from the FASTC site would be provided primarily via Dearing Avenue, and a one-way loop circulation road (i.e., Entry Loop) would be constructed to the west of Dearing Avenue on LRA Parcel 9 to provide a connection to the Core Area. Traffic on the Entry Loop would flow from north to south. The Core Area would function as an intermodal transfer facility, and the Entry Loop would accommodate a mixture of vehicles, including personal vehicles, buses, and minivans. Also, there would be substantial pedestrian activity at the Core Area, as students would transfer from buses to minivans at this location. Because this activity has the potential to cause transportation-related effects, the traffic analysis evaluated internal circulation measures that are discussed in **Section 4.2.6.3** *Mitigation*.

Transportation

Build Alternative 3 would likely result in an increase in the use of Blackstone Area Bus System (BABS) services at Fort Pickett. It is expected that the service would be able to meet this demand. No other transportation services would be affected.

4.2.6.2 No Action Alternative

Construction

There would no construction associated with the No Action Alternative.

Operations

The Traffic Impact Analysis analyzes the No Action Alternative as the future No Build condition (**Appendix H**). Under the No Action Alternative, FASTC-related increases in traffic would not occur. Although traffic in the study area would increase by a compounded annual growth rate of one percent per year by 2018 without the construction of FASTC, and there would be some impacts to the capacity of the study intersections, these effects would not be significant.

A turning lane analysis was performed for the No Action Alternative using the methods described in **Appendix H**. According to VDOT policy, additional turn lane capabilities may be warranted for the following intersections (refer to **Figure 3.2.8)** and movements:

- Cox Road/Military Road (intersection 2) – the storage allowed at the shared westbound left turn/through movement would be less than the VDOT design standard. The improvement would be a new exclusive westbound left turn lane, including storage and taper.
- Darvills Road/Military Road (intersection 3) – the storage allowed at the eastbound right turn movement would be less than the VDOT design standard. The improvement would be to extend the existing eastbound right turn lane storage and taper.

Transportation

There would be no direct or indirect effects on BABs services under the No Action Alternative.

4.2.6.3 Mitigation

Construction

Under Build Alternative 3, construction on LRA Parcel 9 would require the abandonment of the VDOT maintained roadways within the project footprint in LRA Parcel 9, which would require coordination with VDOT and the Nottoway County Board of Supervisors. An access permit from VDOT would be required for the establishment of the access gate on Dearing Avenue under Option B.

Operations

Travel demand management would include transporting trainees by shuttle bus to and from the FASTC facility to reduce vehicular traffic.

Under the No Action Alternative in 2018, two intersections will have turning lane storage that does not meet VDOT design criteria. This would be without Build Alternative 3 traffic. As discussed above, the following turning lane improvements may be warranted:

- Cox Road/Military Road – new exclusive westbound left turn lane, including storage and taper
- Darvills Road/Military Road – extend the existing eastbound right turn lane storage and taper

Under Build Alternative 3 for Option A and B, the turning lane analysis determined that additional project traffic would contribute to deficiencies in the existing turning lane storage to be less than VDOT design standards at three additional intersections beyond the two mentioned above. To address these turning lane storage criteria, it is recommended that VDOT study these turning lane deficiencies and potential improvements to bring the intersections up to their design standards:

- U.S. Route 460/Cox Road (Option A or B) – extend the existing westbound left turn lane storage and taper
- Darvills Road/Military Road (Option B only) – new exclusive westbound right turn lane, including storage and taper
- Darvills Road/Dearing Avenue(Option B only) – extend existing eastbound right turn lane storage and taper

Regarding the implementation of improvements, should VDOT determine they are warranted, GSA and DOS have no authority to fund or implement roadway improvements outside property boundaries. Intersection improvements identified would be under the jurisdiction of VDOT. Funding and implementation of improvements would have to occur through the appropriate Commonwealth of Virginia transportation organizations. Accordingly, state and/or local governments would determine whether improvements identified would be implemented.

To improve circulation internal to FASTC under access Option A or B, the traffic impact analysis recommended the following traffic circulation measures to avoid potential transportation-related effects:

- Design the Entry Loop road to accommodate and efficiently process vehicles approaching the Core Area. As feasible, separate passenger cars traveling to and from the surface parking lot from buses, minivans, and pedestrians. Where queues may form, providing sufficient storage would avoid blocking adjacent lanes and prevent vehicles from stacking onto Dearing Avenue.
- To facilitate the transfer of students, minivans should be scheduled to arrive and park before buses in the morning, while buses should be in place before the arrival of minivans in the afternoon. Signage, pavement markings, pedestrian islands, and other design elements should be considered to accommodate safe and efficient pedestrian movement at the Core Area.

Transportation

The need for mitigation for minor impacts from increased demand for BABs services under Build Alternative 3 is not anticipated.

4.2.7 Recreation

For the purpose of this Supplemental Draft EIS, Build Alternative 3 would cause a significant impact on recreational resources if it would:

- Impede access to recreational resources
- Substantially reduce recreational opportunities

- Cause substantial physical deterioration of recreational resources

4.2.7.1 Build Alternative 3

Build Alternative 3 would have direct adverse effects on hunting resources in the study area. The construction of the FASTC facility would impact approximately 1,210 acres of hunting area on Parcel 21/20, the Grid Parcel, and LRA Parcel 9. Thirty-six bow hunting tree stands on the parcels would be affected to varying degrees and additional tree stand locations in adjacent areas may be indirectly affected by noise. Some would be eliminated while others would be adversely affected by reduced access, noise, and/or habitat losses. Approximately 35,000 acres are currently open to hunting on Fort Pickett, including LRA Parcel 9. The acreage lost to FASTC construction constitutes approximately 3% of the available hunting land at Fort Pickett. Access to hunting would be affected on LRA Parcel 9 more so than on Parcel 21/20 or the Grid Parcel as this area would be more intensely developed. However, to minimize this impact, hunting would be permitted during periods of time and in areas where training is not occurring, to the extent feasible. Therefore, with mitigation to allow continued access and other available hunting areas, direct and indirect impacts to recreational hunting would be adverse, but not significant. There would be no impacts on fishing activities.

The FASTC facility would be equipped with its own fitness center and would not impact similar facilities at Fort Pickett or the surrounding area. Because trainees would generally be in the area temporarily, it is not anticipated that they would enroll in organized community recreational activities to a great extent. Estimated increases in population that would be generated by the proposed addition of FASTC personnel (refer to **Section 4.2.5**) would not be large enough to strain recreational resources and would have no significant impact on area recreation either directly or indirectly.

The public RV campground located just outside of LRA Parcel 9 would continue to operate and would experience minor direct impacts from increased noise and minor indirect impacts from light from the FASTC facility. FASTC driver training operations would primarily occur between 7 a.m. and 10 p.m., but limited nighttime operations (10 p.m. to 7 a.m.) would also be conducted and increased noise and light from the off-road/unimproved drive tracks and the high speed drive tracks may be experienced in the campground area. However, these impacts would be minor. The noise analysis shows that dB levels of driver training would not exceed levels allowed by local noise ordinances at the campground (refer to **Section 4.2.3**). The campground would be within the moderate complaint risk zone for peak noise, similar the noise experienced by the existing noise from Fort Pickett operations. A 100 foot vegetated buffer would be maintained around LRA Parcel 9 that would reduce noise and light impacts. In addition, cut off light fixtures would be used to minimize light trespass and be dark sky compliant. Therefore, direct and indirect impacts to the RV campground would not be significant.

4.2.7.2 No Action Alternative

Under the No Action Alternative the FASTC facility would not be constructed and there would be no impacts to recreational activities.

4.2.7.3 Mitigation

Impacts to recreation would be minimized by allowing hunting access to Parcel 21/20 and LRA Parcel 9 to the extent feasible between training operations.

4.2.8 Utilities and Infrastructure

A determination of significant adverse effect is made when the projected increase in demand for a utility would exceed the planned capacity for that utility such that the utility provider would not be able to service additional demands while maintaining the same level of service for existing customers. Potential adverse effects of demand exceeding capacity include brownouts/blackouts for power, low water pressure or rotating water shutoffs for potable water, discharge of inadequately treated wastewater or sewer backups, and solid waste accumulation at various collection points if a landfill is unable to accept additional waste.

4.2.8.1 Build Alternative 3

Under Build Alternative 3 there would be an increased demand on the existing public utilities as a result of the construction and operations of the FASTC facility. The installation of new utility lines would be required to service the FASTC facilities. New utilities would be constructed in areas already disturbed along existing or planned roadways or utility corridors and would not impact additional areas. It is assumed that the following estimated wastewater flows would pass through the sewer system. Any water that would be consumed for irrigation is not included in the calculations and is assumed would not enter the sewer. Based on typical water usage rates published in the ASPE Plumbing Engineering Design Handbook 2005-2006, for an average of 600 students and 339 employees at the FASTC facility each day, the estimated FASTC water and sewer utility load would be 16,000 gallons per day.

Potable Water

The town of Blackstone and Fort Pickett have an agreement that the water treatment plant and the wastewater treatment plant (WWTP) will maintain 75% of the capacity in the event that Fort Pickett were to become fully mobilized (Blackstone 2014). Based on a permitted capacity of 3.5 million gallons per day (mgd) at the town of Blackstone's water treatment plant, this would be 2.625 mgd. According to 2011-2012 water consumption data (Blackstone 2012), the average daily water usage for the town of Blackstone is approximately 514,000 gpd. Therefore, an estimated 3.15 gallons mgd capacity would be required to supply water for the town, Build Alternative 3 (16,000 gpd), and to maintain the required reserve capacity for Fort Pickett (2.625 mgd). The 3.15 mgd demand is within the existing permitted capacity of 3.5 mgd. The town of Blackstone was contacted regarding this evaluation and concurred that the proposed water demand could be met by Blackstone water services (Blackstone 2013). Therefore, Build Alternative 3 would have no significant direct or indirect impacts on community potable water services and supply. No adverse impacts are anticipated to the drinking water source, the Nottoway Reservoir. The reservoir is capable of having an average storage capacity of 7.72 mgd (VaARNG 2011).

New water supply lines for the FASTC facilities on LRA Parcel 9, the Grid Parcel, and Parcel 21/20 would tie into the existing facilities. All utility construction would occur within existing or proposed roadways or building footprints. Any interconnections with water lines along Military Road would require the proper handling and disposal of asbestos present on approximately 2,000 lf of water main piping along Military Road on the western boundary of LRA Parcel 9 (refer to **Section 4.2.11** *Hazardous Substances*).

Wastewater Treatment

According to 2011-2012 wastewater treatment data (Blackstone 2012), the Blackstone WWTP currently treats approximately 514,000 gpd. The projected daily average volume of wastewater that would be treated at the WWTP following the construction of FASTC is 530,000 gpd (514,000 plus 16,000 gpd from FASTC). The WWTP currently has a capacity of 2 mgd. Therefore, under current conditions, the WWTP has ample capacity to meet the projected 530,000 gpd of wastewater flow. However, in the event Fort Pickett was to become fully mobilized, the town of Blackstone would need to maintain a wastewater treatment capacity reserve of 1.5 mgd. Even under present conditions without FASTC, the capacity of the WWTP would not be sufficient to handle the projected flows in addition to the 1.5 mgd from Fort Pickett. Under normal demand, there would be no significant direct or indirect impacts to the existing wastewater treatment capabilities with Build Alternative 3. The town of Blackstone was contacted regarding this evaluation and concurred that the proposed wastewater treatment demand could be met by the Blackstone WWTP (Blackstone 2013). However, to ensure sufficient reserve capacity, the town may choose to pursue additional capacity to meet existing and future needs (Blackstone 2014).

New wastewater lines for the FASTC facilities on LRA Parcel 9, the Grid Parcel, and Parcel 21/20 would tie into the existing facilities. All utility construction would occur within existing or proposed roadways or building footprints.

Electricity

Electrical power demand for Build Alternative 3 would be between approximately 2.231 and 5 megavolt amperes. Electricity for the FASTC campus would be provided by the Southside Electric Cooperative. Any buildings requiring back up power would be provided with dedicated generators (Southside Electric Cooperative 2011). Currently the two substations located at the intersection of Military Road and West Entrance Road have enough capacity to serve the proposed project (Southside Electric Cooperative 2012). If a new primary source were to be required, it would most likely be placed in the same area. Southside Electric has the ability to design and build such a facility (Southside Electric Cooperative 2011). Southside Electric has an environmental process that requires them to adhere to all applicable local, state, and federal requirements; therefore, any impact that might occur as a result of work performed by the utility would be mitigated through a separate regulatory process. The minor increase in electrical services to support FASTC is well within the capacities of the Southside Electric Cooperative, and no significant direct or indirect impacts are expected. The two largest buildings of FASTC (A01 and T01) would minimize demand for electrical services through compliance with LEED Silver standards for environmentally sustainable construction and the Energy Policy Act of 2005.

Telecommunications

There is ample telecommunications infrastructure on and near Fort Pickett. Relocation of an existing fiber node and poles may be required to accommodate the proposed facility components and security requirements. Of the 144 strands of fiber present, 16 are currently active, carrying 40% capacity of the 2.5 gigabits per second available on the local system (Mid-Atlantic Broadband Cooperative 2011). Mid Atlantic Broadband has indicated that it can also provide a dedicated OC-48 service if one is required in the final facility design (Mid-Atlantic Broadband Cooperative 2011). The minor increase in

telecommunications services to support the FASTC facilities is well within the capacities of the existing providers, and no significant direct or indirect impacts are expected.

Solid waste

Solid waste generation for construction and operation of FASTC would be minimized though a mandatory recycling program that would meet the standards of LEED Silver and EO 13514. A construction waste management plan would be developed to achieve recycling of a minimum of 50% of construction, demolition, and land clearing waste material.

FASTC operations would generate solid waste such as office waste, café waste, and packaging from supplies. At full build out, on-site employment at FASTC would be 339 employees (2020) and up to 10,000 students would be trained annually. Based on the California Solid Waste Characterization Database waste generation rates for educational facilities, the facility would be expected to generate, at a maximum, approximately 0.12 tons of solid waste per employee annually (approximately 220 pounds per day total, facility-wide) and 0.5 pounds per student per day (CalRecycle 2012). Therefore, at full build out, the facility can be expected to generate approximately 5,219 pounds (2.6 tons) of solid waste per day and 1,904,000 pounds (952 tons) of solid waste per year.

A mandatory recycling program would be developed for FASTC operations and would be managed in conjunction with Fort Pickett's recycling program or by a qualified outside waste hauler. It is estimated that at least 59% of solid waste would be recycled (LEED Reference Guide 2009) therefore reducing waste disposal requirements to 374 tons per year. In 2011, 18,889.37 tons of solid waste was reportedly deposited in the Nottoway County Landfill (VDEQ 2012). FASTC solid waste would increase the disposal rate by 2%. The local landfill is estimated to reach capacity by 2027. However, the county has purchased 160 acres of land near the intersection of U.S. Route 460 and Highway 614 for the location of a new county landfill. Therefore, the 2% increase in solid waste generation is not anticipated to have a significant direct or indirect impact on landfill capacity.

4.2.8.2 No Action Alternative

Under the No Action Alternative the FASTC facilities would not be constructed and there would be no impacts to utilities.

4.2.8.3 Mitigation

Impacts associated with installation of water, wastewater, electrical or telecommunication lines would be minimized by construction within existing or new roadways or utility corridors to avoid additional areas of disturbance.

Water demand would be reduced through the use of ultra-low flow fixtures, rain collection, use of grey water, native plant species for non-irrigated landscaping, and avoidance of permanent irrigation.

Impacts to area landfills would be minimized via regulatory compliance with the Pollution Prevention Act and EO 13101 (Greening the Government through Waste Prevention, Recycling, and Federal Acquisition).

4.2.9 Public Health and Safety

Factors considered in determining whether an alternative would have a significant public safety impact include the extent or degree to which implementation of the alternative would subject the public to increased risk of contracting a disease or experiencing personal injury. For activities conducted at FASTC, there would be specific and documented procedures in place to ensure that the public is not endangered by training activities.

4.2.9.1 Build Alternative 3

Emergency Services

Police services on Fort Pickett and in the town of Blackstone are experienced and sufficiently staffed. Build Alternative 3 would not have adverse impacts on the police departments.

Facilities constructed for Build Alternative 3 would be designed to be fire resistant and incorporate fire protection measures to the maximum extent in accordance with GSA Facilities Standards for Public Buildings (P100). In the event of fire, the town of Blackstone would be called as first responder. The Blackstone Fire Department has indicated that they would respond to calls at FASTC, as is currently the procedure under their mutual aide agreement with the Fort Pickett Fire Department, but the response time would be 10-12 minutes as opposed to 3 minutes from Fort Pickett. The Blackstone Fire Department did not indicate that primary responder service for FASTC would be beyond their current response capacity; however, if they are engaged in a response elsewhere in Nottoway County, Fort Pickett would be called on to respond to fires at FASTC (Blackstone Fire Department 2012b). The Fort Pickett fire department has all necessary equipment to respond to fires at FASTC, but can be short staffed at times and may not be able to provide first responder fire protection for FASTC emergencies. Nottoway County has ample firefighting and rescue resources to provide response if needed. There is a moderate potential for direct adverse impacts to FASTC or the community due to slower response times for fire emergencies during times when multiple fire emergencies occur.

Operational Safety

All siting requirements for explosive materials storage and explosive safety quantity distance (ESQD) requirements and permissible storage capacities would be followed as set by the U.S. Department of Defense (DoD) Explosives Safety Board, as they are currently followed at Fort Pickett. Management practices and contingency plans for use, handling, storage, transportation, and disposition of hazardous substances would be implemented at FASTC.

All explosives and firing training areas would have perimeter signage and drop bar gates to discourage accidental access to hazardous areas that is consistent with practices currently in use at Fort Pickett.

All training areas including driving tracks would be designed to contain all training activities within the site such as explosives, small arms munitions, and cars on the driving tracks.

Therefore, the potential for direct or indirect impacts to public safety would be minimal.

Environmental Health Effects

Current activities at Fort Pickett generate noise, which is generally conducted in accordance within applicable regulations to protect the general population and workers from excessive noise exposure. Any additional noise generated by Build Alternative 3 would also be conducted with applicable regulations (refer to **Section 4.2.3.6**) and Build Alternative 3 is not expected to cause additional environmental health effects.

An increase in potential for accidental releases of hazardous materials to surface and groundwater during training activities may result with Build Alternative 3. However, with implementation of a SPCC Plan at FASTC any potential accidental releases would be minimized and there would be no effects to environmental health.

No direct or indirect impacts to environmental health from Build Alternative 3 would be expected due to additional sources of stationary and mobile sources of air emissions.

Notifiable Diseases

Because incoming FASTC trainees and employees are subject to U.S. visa immunization procedure requirements and U.S. visa health requirements for medical and human rights clearance, there would be no risk of transmission of notifiable diseases by FASTC staff or trainees. Similarly, because outgoing FASTC trainees and employees must obtain DOS Class I medical clearance, there would be no risk of transmission of notifiable diseases by FASTC staff or trainees outside the study area.

4.2.9.2 No Action Alternative

Under the No Action Alternative the FASTC facilities would not be constructed and there would be no impacts to operational safety.

4.2.9.3 Mitigation

Impacts to public health and safety would be minimized via the use of proposed safety features such as controlled access gates and signage. Adherence to GSA Facilities Standards for Public Buildings would further minimize impacts to public health and safety by providing an appropriate level of security for the proposed buildings. U.S. visa immunization and health requirements would prevent impacts to public health.

Compliance with state and federal regulations regarding the management of hazardous materials and waste and adherence to existing land use controls would minimize impacts to public health and safety from accidental releases.

4.2.10 Aesthetic and Visual Resources

Potential visual impacts and aesthetic effects were assessed based on the appearance and layout of the proposed structures relative to those physical features that make up the existing visible landscape, including land, water, vegetation, and man-made features. For the purpose of this analysis, the Proposed Action would cause a significant impact to visual resources if they:

- Would substantially alter the views or scenic quality associated with particularly significant and/or publicly recognized vistas, viewsheds, overlooks, or features;

- Would substantially change the light, glare, or shadows within a given area; and
- Would substantially affect viewers with particular sensitivity or intolerance to a changed view (e.g., a hillside neighborhood with views of a relatively undisturbed, naturally appearing landscape).

4.2.10.1 Build Alternative 3

The overall landscape of the study area is mainly forested and exists in its natural state. Build Alternative 3 would maintain vegetative buffers as a means to minimize direct and indirect impacts to the overall visual environment of the study area. Construction proposed in areas currently developed would have minimal direct and indirect visual impacts due to the consistency between the current and proposed land uses. Parcel 21/20 and LRA Parcel 9 would have short-term visual effects during demolition and construction, but these impacts would be temporary in nature. Site lighting would be designed to meet local or federal dark sky guidelines, which would minimize visual impacts from nighttime light pollution and glare.

Military Road

Visual impact from Military Road approaching LRA Parcel 9 would likely be minimal because the existing dense forest would be left intact around the borders of the parcel.

Dearing Avenue

Existing vegetation along the Dearing Avenue corridor approaching the Grid Parcel would be left intact. Therefore, Build Alternative 3 would not result in adverse impacts to visual and aesthetic resources.

West Entrance Road

Build Alternative 3 would not result in any significant changes to the overall visual environment from the West Entrance Road access corridor.

Parcel 21/20

The overall visual environment of Parcel 21/20 would be altered from a primarily undeveloped forested landscape to one peppered with development and clearing associated with Build Alternative 3. The Firearms Training Environment would be located in the east-central portion of Parcel 21/20; however, ranges would be located next to existing VaARNG firing ranges and would therefore not cause significant changes to the overall visual and aesthetic nature of the area. The Explosives Training Environment would be located in the northern portion of Parcel 21/20; however, access would be through use of existing tank trails along with new road creation, visually causing little change to the overall aesthetic environment. The western area of Parcel 21/20 would remain forested.

Grid Parcel

The Grid Parcel contains buildings with a mixture of architectural styles along with some gridded areas containing remnants of old structures and secondary growth. The Core Area and the central warehouse and public works building would be located on the Grid Parcel. Under Build Alternative 3, the visual environment would not be altered significantly and would continue to contain buildings with a mixture of architectural styles.

LRA Parcel 9

Build Alternative 3 would result in changes to the visual environment of LRA Parcel 9 due to clearing associated with the construction of the driving tracks and the addition of buildings. Older structures on the eastern portion of LRA Parcel 9 would be replaced by new, visually attractive facilities. Because the current development on the eastern boundary of LRA Parcel 9 is a mix of architectural styles, the impact of new development associated with the Mock Urban Training Environment would not result in any significant changes to the overall visual environment. The central portion of LRA Parcel 9 would contain the High Speed Driving Track Area and the northern portion would contain the Off-Road/ Unimproved Driving Track Area. The central and northern portions of LRA Parcel 9 are mainly forested and the visual environment would be altered in the central area by Build Alternative 3, but the Off-Road Driving Course would consist of unpaved tracks through the forest and there would be limited clearing of trees. Vegetation would be preserved wherever possible and plantings would re-establish disturbed forest edges to create a natural forest edge to minimize visual impacts. Direct and indirect impacts to views of LRA Parcel 9 would likely be minimal because the existing dense forest would be left intact around the borders of the parcel.

4.2.10.2 No Action Alternative

Under the No Action Alternative the FASTC facility would not be constructed and there would be no impacts on visual and aesthetic resources.

4.2.10.3 Mitigation

Visual impacts would be minimized via the proposed use of vegetative buffers around newly developed areas and parcel borders.

4.2.11 Hazardous Substances

For impacts from hazardous substances to be considered significant, the following would have to occur:

- Leaks, spills, or releases of hazardous substances to environmental media (i.e., soils, surface water, groundwater, air, and/or biota) resulting in unacceptable risks to human health or the environment.
- Violation of applicable federal, state, or local laws or regulations regarding the transportation, storage, handling, use, or disposal of hazardous substances.

4.2.11.1 Build Alternative 3

Under Build Alternative 3, an increase in the use, generation, and storage of hazardous materials and wastes would be anticipated as a result of demolition, construction, and the operation of the FASTC facility.

Facilities constructed on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 under Build Alternative 3 would be designed to prevent occupant exposures to radon above the USEPA action level of 4 picocuries per liter, in accordance with GSA Facilities Standards for Public Buildings (P100). Therefore, there would not be adverse impacts associated with radon under Build Alternative 3.

Parcel 21/20

Demolition

No demolition activities would occur on Parcel 21/20 as this parcel does not contain structures. Therefore, there would be no significant direct or indirect impacts with regards to hazardous wastes from demolition on this parcel.

Construction

Former Underground Gasoline Pipeline: Construction of Build Alternative 3 would not occur near the route of the former gasoline pipeline located along the east side of Dearing Avenue between E 15th Street and E 27th Street adjacent to Parcel 21/20. Because the location of Build Alternative 3 is not near the route of this former gasoline pipeline in this location, the proposed construction would not be affected by any potential soil contamination associated with the former gasoline pipeline.

Should any future changes in development plans, such as construction plans for the Entry Loop Road access to the Core Area, require disturbing soils along the east side of Dearing Avenue, additional investigations for potential soil contamination would be warranted. The pipeline was reportedly cleaned and abandoned in place; therefore, the pipes are still located underground along the route and would need to be removed, if encountered. Based on available information, all known gasoline releases from this pipeline were remediated. However, confirmatory sampling of the pipeline adjacent to Parcel 21/20 has not been permitted. Therefore, residual soil contamination is possible at discrete locations along the former gasoline pipeline route. However, based on the results of soil sampling and analysis of this same former gasoline pipeline that was done during follow up environmental assessment investigations on LRA Parcel 9 (Cardno TEC 2013a), if construction were ever proposed along Dearing Avenue and contamination is encountered during additional soil investigations, it is anticipated that contaminant levels would not be high and any contamination would be readily managed on a case by case basis in accordance with applicable federal, state, and local regulations.

Trimble Road Landfill: The contamination plume associated with the Trimble Road Landfill may be impacting groundwater down gradient from the landfill. Contaminants in groundwater have the potential to result in vapor intrusion if buildings were constructed over the plume area. The landfill area has been excluded from the proposed site and Build Alternative 3 does not include any development in this area. No use of groundwater near the plume is proposed; therefore, there would be no environmental health risk.

Dearing Avenue Landfill: The boundary of Parcel 21/20 was modified to exclude the Dearing Avenue landfill and areas immediately to its north. Therefore, the landfill would not pose a risk to development under Build Alternative 3.

Potential Ordnance/Explosives Burn/Disposal Area: As discussed in **Section 3.2.11.2**, it is unknown if any residual soil or groundwater contamination is present in the suspected potential ordnance/explosives burn/disposal area. Under Build Alternative 3, there are no ground disturbing activities proposed for this area.

Should any future changes in development plans require disturbing soils or groundwater in this area, a soil and groundwater investigation would be undertaken to identify any potential environmental risks.

To protect worker health and safety, the Health and Safety Plan for site development would identify this area as containing unknown hazards.

Operation

The operation of the FASTC facility would require the use and storage of hazardous materials and wastes 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[28], and would be managed in accordance with applicable Resource Conservation and Recovery Act (RCRA) and OSHA 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 SPCC Plan would be prepared in accordance with the 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.

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.

[28] Title 49 CFR 100-199

Grid Parcel

Demolition

Former Underground Gasoline Pipeline: Concepts for Build Alternative 3 propose to use the existing roadway grid to the extent feasible. If roadway demolition becomes necessary, there would be potential that the demolition activities would include the need to remove segments of the old pipeline. The Phase II environmental site assessment (ESA) investigations (Schnabel Engineering 2012a) and follow up environmental assessment investigations (Cardno TEC 2013a) have determined that all releases associated with the pipeline have been remediated (Schnabel Engineering 2010, Schnabel Engineering 2012a, Cardno TEC 2013a). Therefore, no contamination is anticipated should the pipeline route be encroached upon in LRA Parcel 9.

Underground Storage Tanks (USTs)/Above Ground Storage Tanks (ASTs): No undocumented USTs or historic UST-related contamination was identified on the parcel during any of the Phase II ESAs and follow up investigations (Schnabel Engineering 2012a, Cardno TEC 2013a). The possibility of undocumented USTs on the LRA Parcel 9 cannot be completely eliminated nor can the presence of residual contamination from historic USTs. Extensive magnetometer surveys did not detect any USTs or other large metallic anomalies, and due diligence with regards to undocumented USTs has been achieved. The lack of historical documentation regarding USTs remains a "significant data gap" as defined by ASTM-1527.05. However "all appropriate inquiries" have been performed for the property using all reasonably ascertainable information. If undocumented USTs are encountered during site development, they would be removed and closed by a licensed contractor in coordination with VDEQ. Contaminant levels associated with undocumented USTs are not anticipated to be high and would be managed on a case by case basis in accordance with applicable federal, state, and local regulations as such locations are encountered during demolition activities. If unregistered or unknown USTs are encountered during construction, they would also be removed and closed by a licensed contractor in coordination with VDEQ.

The USTs associated with Buildings 1319 and 1351 on the Grid Parcel have been closed by VDEQ but residual contamination is present in the soil. According to VDEQ, closure of a remediation case does not mean that the property is free of contamination. Most remediation cases are closed with contamination remaining on the property. In such cases, subsequent purchasers (i.e., GSA) who develop or alter the property are responsible for properly managing contaminated media and addressing environmental impacts resulting from development activities. This includes disposal of petroleum contaminated soils generated by construction activities and disposal of contaminated water generated by dewatering activities.

Construction

USTs/ASTs: The potential for presence of undocumented USTs could not be completely eliminated and they may be present on the Grid Parcel. If unregistered or unknown USTs are encountered during construction, they would be removed and closed by a licensed contractor in coordination with VDEQ.

Development activities associated with the construction of Build Alternative 3 do not appear to encroach on the former locations of Buildings 1319 and 1351 and are not likely to encounter contaminated soils associated with these sites.

Former Underground Gasoline Pipeline: Construction of the Entry Loop Road under Build Alternative 3 may encounter the former gasoline pipeline, which would have to be avoided or removed. As noted above, no contamination is anticipated to be encountered along the former gasoline pipeline route on LRA Parcel 9, and no further action regarding contamination would be required.

Operation

Operational impacts of the FASTC facility would be the same as those described for Parcel 21/20.

LRA Parcel 9

Demolition

Prior to demolition, the small volumes of containerized pesticides, herbicides, paints, solvents, petroleum products in various areas on the parcel, and any paint filters that may be present within the paint booth of the former arts and crafts building at 326 Armistead Avenue would be disposed of as hazardous waste in accordance with applicable federal, state, and local regulations.

USTs/ ASTs: Two USTS are currently located on LRA Parcel 9. The USTs were tested and found to be tight (no leaks), and borings adjacent to the tanks revealed no contaminants of concern. These USTs would be abandoned in place or removed and closed by a licensed contractor in coordination with VDEQ. All existing ASTs would also be removed by a licensed contractor in coordination with VDEQ.

Nottoway County will be notified of the release discovered and delineated at Building 1100 during the follow up environment assessment investigations conducted in December 2012 (Cardno TEC 2013a). As the current AST owner/operator, Nottoway County is required to report the release to VDEQ, and VDEQ would determine if remediation of the release is warranted.

There is a potential for residual gasoline and oil contamination from other undocumented or previously removed USTs and ASTs on LRA Parcel 9. No undocumented USTs or historic UST-related contamination was identified on the parcel during any of the Phase II ESAs and follow up investigations (Schnabel Engineering 2012a, Cardno TEC 2013a). The possibility of undocumented USTs on the LRA Parcel 9 cannot be completely eliminated nor can the presence of residual contamination from historic USTs. Extensive magnetometer surveys conducted during the follow up environment assessment investigations conducted in December 2012 (Cardno TEC 2013a) did not detect any USTs or other large metallic anomalies that would indicate the presence of a UST, and due diligence with regards to undocumented USTs has been achieved. The lack of historical documentation regarding USTs remains a "significant data gap" as defined by ASTM-1527.05. However "all appropriate inquiries" have been performed for the property using all reasonably ascertainable information. If undocumented, unregistered, or unknown USTs are encountered during site development, they would be removed and closed by a licensed contractor in coordination with VDEQ. Contaminant levels associated with undocumented USTs are not anticipated to be high and would be managed on a case by case basis in accordance with applicable federal, state, and local regulations as such locations are encountered.

Former Underground Gasoline Pipeline: Roadway demolition would require the removal of the former gasoline pipeline where encountered. The pipeline was reportedly cleaned and abandoned in place, and all subsequent Phase II investigations have determined that all releases associated with the pipeline

have been remediated (Schnabel Engineering 2010, Schnabel Engineering 2012a, Cardno TEC 2013a). Therefore, no contamination is anticipated to be encountered along the pipeline.

Environmental Baseline Survey Site 13 (EBS 13): The existing fence around the 18-acre portion of EBS 13 would be demolished under Build Alternative 3. GSA would seek to obtain a written statement from Nottoway County or USACE, the responsible party for managing EBS 13, regarding the status of future maintenance requirements for the fence.

Lead Based Paint (LBP): LBP may be present in the site's structures. Coordination with the Virginia Department of Labor and Industry would be initiated to determine whether any special handling or disposal requirements are applicable for the demolition of the structures. If required by the Virginia Department of Labor and Industry, surveys for LBP would be conducted on structures on LRA Parcel 9 prior to alteration or demolition activities. LBP samples would be analyzed in accordance with USEPA Toxicity Characteristic Leaching Procedure methodology. Based on this federal testing methodology, the paint would be considered hazardous if lead is detected at concentrations greater than 5 milligrams per liter (mg/L). If LBP were detected at hazardous concentrations, these materials would be removed and disposed of as appropriate. LBP would be managed and disposed of according to applicable state, federal, and local requirements for protecting human health and safety and the environment. Therefore, any impacts associated with the removal of LBP would be beneficial in nature.

Surficial soils in the vicinity of the water tower, if disturbed, would be re-used on-site and a land use restriction would be imposed for those areas containing elevated concentrations of lead to prohibit residential development. Additionally, the elevated concentrations at the specific locations should be noted in any worker Health and Safety Plans and appropriate precautions implemented if any disturbance of the area is to occur.

Asbestos Containing Materials (ACM): Substantial asbestos abatement was conducted on LRA Parcel 9 in 1997 and all friable asbestos was removed from the structures prior to their transfer to Nottoway County. However, non-friable ACM is assumed to be present in the site's structures in pipe insulation, floor tiles, floor tile mastic, transite, and roofing materials.

Under the National Emission Standards for Hazardous Air Pollutants (NESHAPs), the majority of the remaining non-friable ACM would be classified as Category I. Category I includes all non-friable asbestos containing packing, gaskets, resilient floor covering, and asphalt based roofing products containing more than 1% asbestos. Asbestos containing mastic is also considered a Category I material. The NESHAP regulations specify that Category I asbestos materials that are not in poor condition and not friable prior to demolition do not have to be removed, except where demolition will be by intentional burning. Non-friable asbestos cement products such as transite would be classified under NESHAP as Category II material. Category II non-friable ACM is defined as any material, excluding Category I, containing more than 1% asbestos that when dry, cannot be pulverized or reduced to powder by hand pressure. Category II materials that have a high probability of being crumbled, pulverized, or reduced to powder as part of the demolition must be removed before demolition begins. If any suspect ACM is encountered during demolition activities, a Virginia licensed asbestos abatement contractor would characterize the material and determine the proper technique for its removal. ACMs would be managed, transported, and disposed according to applicable federal, state, and local requirements for protecting human health and

safety and the environment. Therefore, adverse impacts associated with ACMs would not occur. The removal of the material from the site would be beneficial.

Polychlorinated biphenyl (PCB): Any buildings or portions thereof constructed prior to 1979 on LRA Parcel 9 would receive a full PCB survey prior to demolition. PCB-containing materials would be handled and disposed of in accordance with all applicable federal, state, and local regulations. PCBs would be characterized, managed, transported, and disposed of according to applicable state, federal, and local requirements for protecting human health and safety and the environment. PCB-containing materials are classified according to the concentration of PCBs present. There are three classifications of PCB-containing materials: (a) PCBs (>500 parts per million [ppm]), (b) PCB-contaminated (5-500 ppm) and (c) non-PCB (<5 ppm). Any PCB or PCB-contaminated material would be disposed of at an approved disposal facility within one year from the date when the item is declared a waste or is no longer fit for use in accordance with applicable regulations. The removal of PCB-containing equipment from the facility would have a beneficial impact on hazardous wastes at the facility.

Construction

ACM: Build Alternative 3 construction activities are not anticipated to disturb asbestos on water main piping along Military Road; however, in the event utility upgrades intersect with the water main where asbestos is present, the asbestos and any contaminated soils would need to be properly removed.

LBP: Build Alternative 3 construction activities are not anticipated to disturb soils within the water tower site. However, should disturbance of this area occur, reuse of the soil would be permitted provided reuse is limited to commercial/industrial use. As an alternative, because the material has been demonstrated to be non-hazardous, the top 6 inches of soils could be removed and disposed of as solid waste (Cardno TEC 2013b).

EBS 13: The EBS 13 site on LRA Parcel 9 has land use restrictions that would limit FASTC development over a limited portion of the EBS-13 site. In the 18-acre fenced area of the site, no residential development or groundwater use would be permitted as specified in the land use controls. Within this fenced area, there is a 4-acre portion of land where no excavation would be permitted as specified in the land use controls. Signage restricting access would be maintained or a fence would be constructed to prevent disturbance of this area.

Former Fuel Station Site BCT-22: Groundwater contamination of methyl tertiary butyl ether (MTBE) associated with the BCT-22 plume has entered LRA Parcel 9 from an adjacent former gas station site (former fuel station site BCT-22). There are two groundwater monitoring wells (BCT-MW-14 and BCT-MW-16) associated with this plume that are located on LRA Parcel 9. These monitoring wells are part of a continuing VDEQ approved monitoring program for this groundwater plume containing MTBE. Monitoring well BCT-MW-14 is located in the northwest corner of LRA Parcel 9 and well BCT-MW-16 is located approximately 1,200 feet down gradient and to the southeast of the well BCT-MW-14. Groundwater samples tested for this project at BCT-MW-14 found detectable quantities of MTBE. However, no detectable amounts of MTBE were found in groundwater samples taken from the BCT-MW-16 well. The primary impact of the plume to FASTC construction would be a restriction of groundwater use in the area. This is a prudent measure as the contaminated plume may migrate further into the site. Given the presence of detectable quantities of MTBE, tapping the groundwater for potable

drinking water purposes is not advisable and any pumping of groundwater in this area for other purposes may have the potential to affect the movement of the plume. A potential secondary impact would be potential vapor intrusion if buildings were to be proposed for construction in that area. Access to these two monitoring wells (each is a 3-foot high, steel-encased 4-inch diameter pipe) needs to be maintained to allow sample collection on a quarterly basis. An adjustment to the locations and numbers of these monitoring wells or remedial actions is also allowed under deed covenants should the plume continue to migrate and regulatory authorities require remedial action. This area is the proposed location of the High Speed Driving tracks and Ring Road, and no buildings are proposed in this area. A Phase II ESA determined that since no groundwater wells or buildings are proposed in the areas down gradient of the plume, associated health risks are considered to be low (Schnabel Engineering 2012c). According to deeds for this parcel, the U.S. Army has retained responsibility for monitoring BCT-22 (Schnabel Engineering 2010).

Operation

Operational impacts of the FASTC facility on LRA Parcel 9 would be the same as those described for Parcel 21/20.

4.2.11.2 No Action Alternative

Under the No Action Alternative the FASTC facility would not be constructed and no demolition or construction activities would occur. LBP, ACM, PCBs, and USTS would remain in place, where present, and no soil and groundwater investigations or remediation would occur.

4.2.11.3 Mitigation

Prior to demolition of structures, small volumes of containerized pesticides, herbicides, paints, solvents, and petroleum products in various structures on the parcel would be removed and properly disposed.

GSA would confirm U.S. Army responsibility for future remediation of (MTBE in the groundwater on LRA Parcel 9 if remedial action is required.

According to a project specific Phase III Risk Management and Remediation Plan (Cardno TEC 2013b) prepared in 2013, all known release areas or areas requiring further investigation that would present an environmental and/or human health risk would be addressed according to the real estate agreements between GSA and the property owners prior to site development. Areas of environmental risk in the study area and needed actions identified in the Remedial Plan are summarized in **Table 4.2-17**.

Impacts associated with hazardous substances would be minimized through compliance with federal regulations regarding the management of hazardous materials and wastes (RCRA, Comprehensive, Environmental Response, Compensation and Liability Act, Oil Pollution Act, Pollution Prevention Act).

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.

Table 4.2-17. Summary of Environmental Risk Areas

Area	Needed Action	Location
Grid Parcel		
ASTs	Soil residuals management	Bldg 1319, Bldg 1351
Potential for undocumented USTs	Potential removal/remediation of site soil	Site wide
Former Underground gasoline pipeline	Soil testing along the pipeline if disturbed by the project; remediation of site soil if contamination present	South side 15th Street
Parcel 21/20		
Former Underground gasoline pipeline	Soil testing along the pipeline if disturbed by the project; remediation of site soil if contamination present	East side of Dearing Avenue
Potential ordnance/explosives burn/disposal area	Soil testing if disturbed by the project; potential groundwater testing and remediation of site soil if contamination present	Northeast corner – tank trail (if disturbed)
LRA Parcel 9		
Containerized products	Remove/dispose containerized pesticides, herbicides, paints, solvents, and petroleum products	Various structures to be demolished
ASTs	Remediation of site soil	Bldg 1100
UST s	Removal	553 Garnett Ave, 697 Garnett Ave
LBP	Characterization, removal, and disposal	Site wide Buildings; Water tower soils (if disturbed)
ACM buildings	Characterization, removal, and disposal	Site wide
ACM water main	Characterization, removal, and disposal if disturbed by the project	Military Road
MTBE groundwater plume	Maintain access to two groundwater monitoring wells located on LRA Parcel 9 for quarterly sample collection by U.S. Army; groundwater use should be restricted	BCT-22
EBS-13 land use restrictions	Removal of the fence around the 18-acre area with groundwater contact restrictions-confirm regulatory status of fence; maintain signage or construct fencing around 4-acre area subject to excavation restriction	EBS-13
Potential for undocumented USTs	Potential removal/remediation of site soil	Site wide

4.3 Other Considerations

4.3.1 Consistency with Federal and State Plans, Policies, and Controls

Build Alternative 3 would not conflict with the objectives of other applicable federal and state plans, policies, and regulations. A summary of this compliance status is provided in **Table 4.3-1**.

Table 4.3-1. Applicable Federal State Plans, Policies, and Regulations

Federal and State Plans, Policies, and Controls	Status of Compliance
NEPA of 1969 (42 U.S. Code [USC] §§ 4321, et seq.), Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR §§ 1500-1508)	This Supplemental Draft EIS has been prepared in accordance with the President's Council on Environmental Quality (CEQ) Regulations implementing NEPA and GSA NEPA procedures. Preparation of this Supplemental Draft EIS, and provisions for public participation and review, are being conducted in compliance with NEPA.
Clean Air Act	The air quality analysis in the EIS concludes that proposed emissions under Build Alternative 3: 1) would not create a major regional source of air pollutants or affect the current attainment status of the area, and 2) would comply with all applicable state and regional air agency rules and regulations.
Clean Water Act	Permits under CWA Sections 401 and 404 would be required. Stormwater runoff during construction would be performed in compliance with Virginia's General Permit for Discharges of Stormwater from Construction Activities. Proposed demolition and construction activities would require preparation of a SWPPP and use of BMPs to limit potential erosion and runoff.
Pollution Prevention Act	The FASTC facility would incorporate measures to reduce hazardous substances from being released into the environment prior to recycling, treatment, or disposal. The construction and operation of the facility would incorporate practices that increase efficiency in the use of energy, water, or other natural resources, and protect resources.
Oil Pollution Act	All petroleum storage areas associated with FASTC would be managed in accordance with this act.
Safe Drinking Water Act	All drinking water sources at FASTC would meet the requirements of this Act.
Noise Control Act	Construction and operation of FASTC would be conducted in accordance with applicable regulations to protect the general population and workers from excessive noise exposure.
Endangered Species Act	Build Alternative 3 may affect the proposed listed NLEB and GSA is consulting with USFWS in accordance with Endangered Species Act Section 7. There is no effect to other listed species or critical habitat. Informal consultation with USFWS was conducted for other species in 2012, and concurrence was obtained. Updated informal consultation undertaken in 2014 will be included in the Final EIS.
Fish and Wildlife Coordination Act	Build Alternative 3 may affect the proposed listed NLEB and GSA is consulting with USFWS in accordance with Endangered Species Act Section 7. There is no effect to other listed species or critical habitat. Informal consultation with USFWS was conducted for other species in 2012, and concurrence was obtained. Updated informal consultation undertaken in 2014 will be included in the Final EIS.
Migratory Bird Treaty Act	Build Alternative 3 would not impact populations of migratory birds or their critical habitat.

Table 4.3-1. Applicable Federal State Plans, Policies, and Regulations

Federal and State Plans, Policies, and Controls	Status of Compliance
Bald and Golden Eagle protection Act	Build Alternative 3 would not result in any "takes" of bald or golden eagles.
National Historic Preservation Act	No adverse impacts to historic properties or traditional cultural properties are expected as a result of Build Alternative 3. Consultation with the Virginia State Historic Preservation Officer will be concluded in the Final EIS.
Archaeological Resources Protection Act	Build Alternative 3 would not affect archaeological resources.
Native American Graves Protection and Repatriation Act	No Native American human remains, funerary objects, sacred objects, and objects of cultural importance have been discovered within the study area.
Farmland Protection Policy Act	Build Alternative 3 was analyzed with regard to impacts to prime farmland.
Comprehensive, Environmental Response, Compensation and Liability Act	Build Alternative 3 would avoid impacts to Installation Restoration Program sites.
Resource Conservation and Recovery Act	Build Alternative 3 would not result in significant hazardous materials related impacts. Management protocols for hazardous substances related to FASTC would follow existing regulations and procedures.
Toxic Substances Control Act	No toxic substances regulated under this act are proposed to be utilized during FASTC construction or operation.
Energy Independence and Security Act	FASTC would be designed in a manner that would manage stormwater runoff so that it does not exceed the predevelopment rate or volume.
EO 11593 (Protection and Enhancement of the Cultural Environment)	Build Alternative 3 has provided measures to ensure the protection, restoration, and maintenance of federally owned sites, structures, and objects of historical, architectural, or archaeological significance.
EO 11990 (Protection of Wetlands)	Build Alternative 3 construction activities would impact wetlands directly and indirectly. Specific measures would be taken during the design process to avoid and minimize impacts to wetlands. GSA would obtain a Section 404 permit and wetland impact mitigation measures would be implemented to compensate for adverse impacts.
EO 11988 (Floodplain Management)	Build Alternative 3 would not impact floodplains or floodplain management.
EO 12088 (Federal Compliance with Pollution Control Standards)	Build Alternative 3 would be implemented in compliance with environmental laws and fully cooperate with USEPA, Virginia, interstate, and local agencies to prevent, control, and abate environmental pollution.
EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations)	Build Alternative 3 would not have disproportionately high and adverse effects on minority and low-income populations.
EO 13045 (Protection of Children from Environmental Health Risks and Safety Risks)	Build Alternative 3 would not have adverse health and safety risks that disproportionately affect children.
EO 13101 (Greening the Government through Waste Prevention, Recycling, and Federal Acquisition)	The FASTC facility would promote recycling and utilize recycled-content and environmentally preferable products to the extent feasible.
EO 13123 (Greening the Government through Efficient Energy Management)	Through LEED design standards the FASTC facility would improve building energy, promote the use of renewable energy, and reduce greenhouse gas emissions associated with energy use.

Table 4.3-1. Applicable Federal State Plans, Policies, and Regulations

Federal and State Plans, Policies, and Controls	Status of Compliance
EO 13148 (Greening the Government through Leadership in Environmental Management)	LEED and LID practices would implement cost-effective, environmentally sound landscaping practices, and reduce adverse impacts to the natural environment.
EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds)	Build Alternative 3 has incorporated steps to protect migratory birds.
VDOT Road Design Manual	Potential traffic improvements were analyzed in accordance with the design standards specified in the manual.
Asbestos Permit Application And Notification For Demolition/ Renovation	Prior to demolition activities, an asbestos permit would be submitted for approval.
Virginia Construction General Permit	A Virginia General Construction Permit would be obtained for FASTC construction.
Virginia Erosion and Sediment Control Program	The minimum standards specified by this Program would be implemented during FASTC construction.
Virginia Stormwater Management Program	A General Construction Permit would be obtained for FASTC construction in accordance with Program requirements.

4.3.2 Consistency with Local Plans, Policies, and Controls

Build Alternative 3 would not conflict with the objectives of other applicable local plans, policies, and regulations. A summary of this compliance status is provided in **Table 4.3-2**.

Table 4.3-2. Applicable Local Plans, Policies, and Regulations

Local Plan, Policy, Permit, or Control	Status of Compliance
Nottoway County Zoning Regulations	Build Alternative 3 would be consistent with Nottoway County zoning regulations.
Nottoway Comprehensive Plan	FASTC construction would be consistent with the existing Nottoway County Comprehensive Plan.

4.3.3 Irreversible and Irretrievable Commitment of Resources

NEPA requires that environmental analysis include identification of "…any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented." The term "resources" (both renewable and nonrenewable) means the natural and cultural resources committed to, or lost by, the action, as well as labor, funds, and materials committed to the action.

The permanent use and subsequent loss of non-renewable resources, such as oil, natural gas, and iron ore, are considered irreversible because non-renewable resources cannot be replenished by natural means. An action that causes a loss in the value of an affected resource, which cannot be restored (e.g., disturbance of a cultural site), is considered an irretrievable commitment of resources. Similarly, the consumption of a renewable resource that would be lost for a period of time is also considered an irretrievable commitment of resources. Renewable natural resources include water, lumber, and soil, all of which can be replenished by natural means within a reasonable timeframe.

Build Alternative 3 would involve irretrievable commitments of both non-renewable and renewable resources. Facility development involving demolition and construction activities would expend fuel, construction materials, and labor. The operation and maintenance of the new facilities associated with

FASTC would require energy to heat, cool, and light the buildings. The increase in personnel under the action alternative may result in additional residential construction in and around Blackstone and surrounding counties, which would also expend fuel, construction materials, and labor. Conducting maintenance activities and office operations would require the expenditure of fuel and certain types of materials.

All new construction would comply with EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management, and EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance. EO 13423 sets goals for federal agencies in areas such as energy efficiency, renewable energy, toxic chemical reduction, recycling, sustainable buildings, electronics stewardship, and water conservation. EO 13514 expands on the EO 13423 requirements with mandates for federal agencies to meet numerical and non-numerical targets. For example, EO 13514 requires that 95% of all new contracts require the use of water-efficient fixtures, low-flow fixtures, non-toxic or less toxic products, and energy-efficient products. EO 13514 also requires that all new construction comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings. This includes employing design and construction strategies that increase energy efficiency, eliminate solid waste, and reduce stormwater runoff.

The total amount of construction materials (e.g., concrete, insulation, wiring, etc.) required for Build Alternative 3 is relatively small when compared to the resources available in the region. The construction materials and energy required for facility development and operations are not in short supply. Moreover, the use of construction materials and energy would not have an adverse impact on the continued availability of these resources. The commitment of energy resources to implement Build Alternative 3 is not anticipated to be excessive in terms of region-wide usage. Furthermore, compliance with EO 13423 and EO 13514 requirements would minimize irreversible or irretrievable effects to multiple non-renewable and renewable resources.

4.3.4 Relationship Between Short Term Use of the Environment and Long Term Productivity

Construction of FASTC is not expected to result in the types of impacts that would reduce environmental productivity, have long-term impacts on sustainability, affect biodiversity, or narrow the range of long-term beneficial uses of the environment. As discussed in Chapters 3 and 4, Build Alternative 3 would result in both short- and long-term environmental effects.

Short-term uses of the environment associated with the build alternative would include improvements to existing and former military lands. Short-term effects would include localized disruptions and higher noise levels in some areas. Project-related construction activities would temporarily increase air pollution emissions and noise in the immediate vicinity of the affected area(s). Depending upon their location, humans and animals could experience somewhat increased levels of noise due to FASTC operations. Noise from construction activities would be short-term and would not be expected to result in permanent damage of long-term changes in wildlife productivity or habitat use.

CHAPTER 5 CUMULATIVE EFFECTS

5.1 Cumulative Effects Definition

Federal regulations implementing the National Environmental Policy Act (NEPA)[29] require that the cumulative impacts of a Proposed Action be assessed. Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA define cumulative impacts as:

> *The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.*[30]

A cumulative impact may be additive (where the net adverse cumulative effects are strengthened by the sum of individual effects), countervailing (where the net adverse cumulative effect is less as a result of the interaction between positive and negative individual effects) or synergistic (where the net adverse cumulative effect is greater than the sum of the individual effects). Cumulative impacts can result from individually minor but collectively significant actions that take place over time. Accordingly, a cumulative impact analysis identifies and defines the scope of other actions and their interrelationship with the Proposed Action if there is an overlap in space and time. Cumulative impacts are most likely to occur when there is an overlapping geographic location and a coincident or sequential timing of events. Because the environmental analysis required under NEPA is forward-looking, the aggregate effect of past actions is analyzed to the extent relevant and useful in analyzing whether the reasonably foreseeable effects of a Proposed Action may have a continuing, additive and significant relationship to those effects.

5.2 Description of Geographical Study area

This cumulative effect analysis was prepared for the Proposed Action. For the purposes of the cumulative effects analysis, the geographic study area is the three parcels being developed: Parcel 21/20, the Grid Parcel, and Local Redevelopment Authority (LRA) Parcel 9. However, for some impact categories, such as traffic and socioeconomics, the geographic area may include the town of Blackstone and the surrounding counties including: Amelia County, Brunswick County, Chesterfield County, Dinwiddie County, Lunenburg County, Mecklenburg County, and Prince Edward County.

5.3 Relevant Past, Present, and Reasonably Foreseeable Future Actions

This section identifies past, present, and reasonably foreseeable future actions not related to the Proposed Action that have the potential to cumulatively impact the resources in the affected environment of the proposed project and its vicinity. A summary table is presented at the end of this section to identify the resources that would be affected by each project and to provide a temporal context (where available). Geographic distribution, intensity, duration, and historical effects of the various identified projects were considered when determining whether a particular activity may

[29] Council on Environmental Quality 40 Code of Federal Regulations (CFR) Parts 1500-1508
[30] 40 CFR 1508.7

contribute cumulatively and significantly to the impacts of the proposed Foreign Affairs Security Training Center (FASTC). Resource specific information needed for a detailed cumulative analysis was not reasonably available for all of the identified projects. Therefore, projects with insufficient data for all resources were dismissed from the cumulative analysis. Projects with limited available resource information were included to the extent practicable. The general locations of the past, present, and reasonably foreseeable future projects are depicted in **Figure 5.3-1**.

Past Actions

Regional Training Institute Complex

The ARNG Maneuver Training Center Fort Pickett (Fort Pickett)-based 183d Regiment, Regional Training Institute officially opened its headquarters and education complex on December 4, 2010. The official opening marks the completion of the first of two construction phases. Phase I began in September 2008 and is a total of 83,554 square feet (sf) that includes the regimental headquarters building, an educational building with administrative and classroom space, an Officer Candidate School building and a separate building for an auditorium. The location is shown in **Figure 5.3-1**. The key features of Phase 1 are:

- An approximately 8,000 sf regimental headquarters building that house offices, administrative work space and a conference room for the command group, operations and staff sections, and the headquarters company.
- An approximately 61,500 sf education building with administrative and office space for the RTI's three training battalions, classrooms, a library, learning center, maintenance classroom, medical aid station, supply area, and fitness center.
- An approximately 9,700 sf Officer Candidate School Building with offices, administrative work space, conference room, classrooms, and counseling areas.
- An approximately 4,900 sf 250-seat auditorium with stage.
- Phase II consists of 123,916 sf of student barracks and was completed in 2011. The design and construction of the facility used green building practices and meets Leadership in Energy and Environmental Design (LEED) silver certification through the U.S. Green Building Council. The building has many energy and utility saving features built into it, including waterless urinals and motion detector lights (VaARNG 2010). The site of the new facility formerly contained baseball fields (VaARNG 2011).
- Construction of the Regional Training Institute Complex has the potential to contribute to cumulative impacts on geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, recreation, utilities and infrastructure, and aesthetic and visual resources when considered in conjunction with the Proposed Action and other past, present, and reasonable foreseeable future projects.

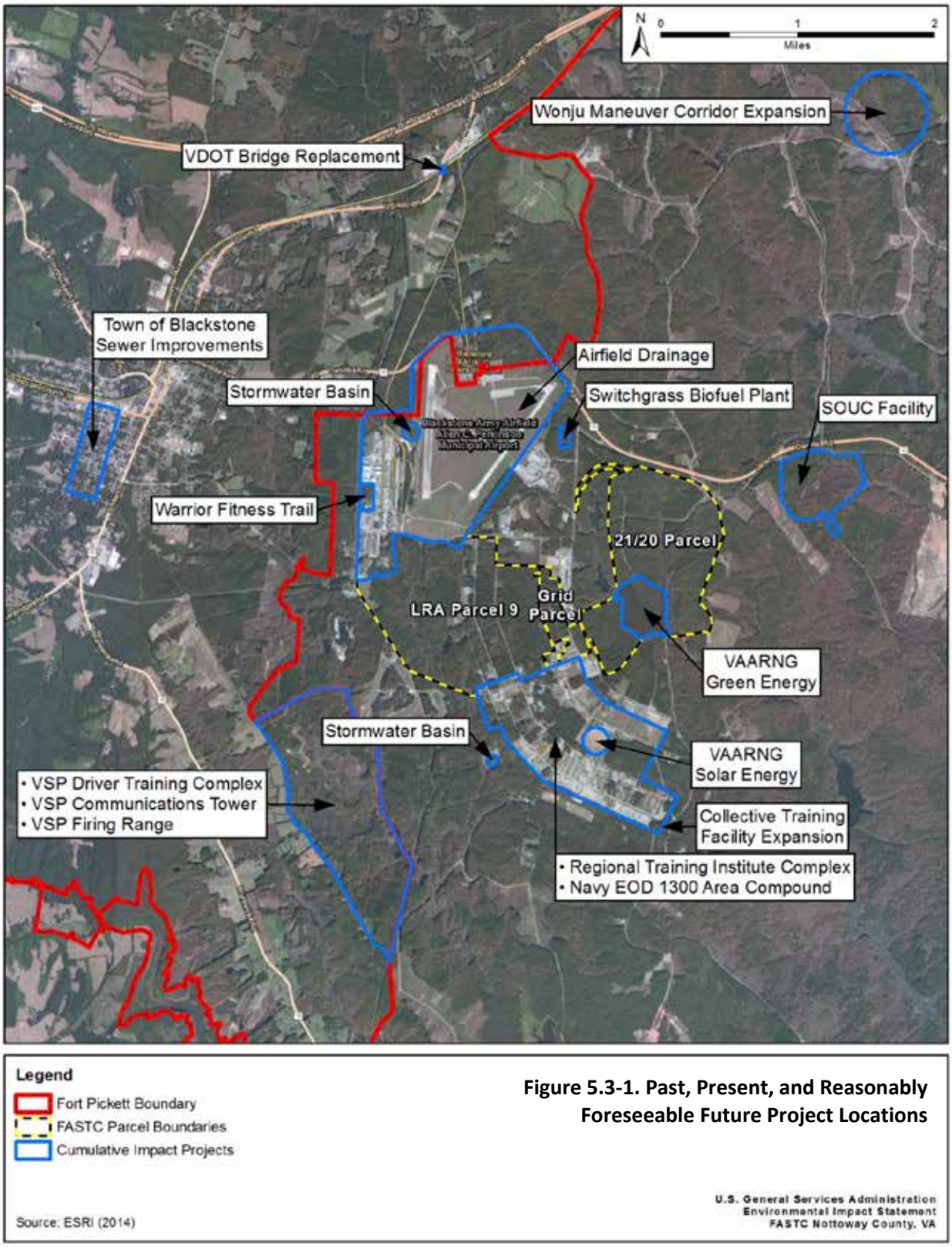

Figure 5.3-1. Past, Present, and Reasonably Foreseeable Future Project Locations

Warrior Fitness and Nature Trail

On August 4, 2012, the Warrior Fitness and Nature Trail was officially opened. The trail features 11 fitness station and 14 nature observation points over the course of a half-mile loop. The trail is located in six acres of forested area at the corner of Military Road and Ninth Streets within Fort Pickett (**Figure 5.3-1**). The fitness stations include a stretching area, pull-up bars, sit up boards, and other apparatus along with signage describing their proper use for various fitness levels. The nature observation points contain signage that identifies various trees, shrubs, and plants along the trail. Several bat houses are also installed along the trail (Courier-Record 2012b).

Construction of the Warrior Fitness Trail has the potential to contribute to cumulative impacts on biological resources and recreation when considered in conjunction with the Proposed Action and other past, present, and reasonable foreseeable future projects.

Pennsylvania Army National Guard 56th Stryker Brigade Combat Team Transformation and Training

Fort Pickett is involved in the transformation and training of the Pennsylvania Army National Guard 56th Stryker Brigade Combat Team. The combat team would utilize the existing facilities, maneuver, and training range areas as necessary to provide qualification training for the Pennsylvania Army National Guard 56th Stryker Brigade Combat Team. Approximately 15 acres of contiguous forested land was removed and additional facilities were constructed to accommodate the proficiency training requirements of 56th Stryker Brigade Combat Team (Pennsylvania Army National Guard 2006).

The transformation and training of the Pennsylvania Army National Guard 56th Stryker Brigade Combat Team has the potential to contribute to cumulative impacts on biological resources, air quality, noise, land use, traffic and transportation, and utilities and infrastructure when considered in conjunction with the Proposed Action and other past, present, and reasonable foreseeable future projects.

Collective Training Facility

A Collective Training Facility encompasses six acres near the Directorate of Plans, Training, and Security (DPTS)/Range Operations Building at Fort Pickett (**Figure 5.3-1**). Construction began in spring/summer of 2013 and should be complete by January 2015. The intent of the project is to expand and rehabilitate the existing facility to meet current training targetry requirements for current mission tactics and techniques required for urban operations under simulated combat conditions. The facility is designed to train ARNG and reservists in an urban area, including: clearing, breaching, and offensive/defensive operations in an urban setting. New primary structures to facilitate training include: a townhouse, a church, six residences, two one-story stores/offices, a warehouse, a service/fire station, a police station, a cemetery, and power station. New residences feature flat rooftops and wooden fence courtyards to mimic current military theaters. The project also included upgrades to existing buildings, such as repainting, resealing, and installation of electrical and data services. Supporting facilities include: Range Operations center, after-action review building, operations/storage building, latrine and covered mess site, site preparation, grading, utilities, storm drainage and force protection. This project is anticipated to contribute to cumulative impacts, in conjunction with other past, present, and future projects on the following resources: topography, geology and soils, water resources, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, and aesthetic and visual resources.

Wonju Maneuver Corridor Expansion

The Fiscal Year (FY) 2014 project is complete and involved 138 acres of clear cut converted to open maneuver land, located in the northern training area near Archer and Wonju Roads (**Figure 5.3-1**). The project is anticipated to have both temporary and permanent cumulative impacts, in conjunction with other past, present, and future projects on the following resources: topography, geology and soils, water resources, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, and aesthetic and visual resources.

Stormwater Basins

Two stormwater basins were constructed, one located off Military Road near the main installation entrance and one in the 2400 block of Garnett (**Figure 5.3-1**). This project is anticipated to contribute to cumulative impacts, in conjunction with other past, present, and future projects on the following resources: topography, geology and soils, water resources, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, and aesthetic and visual resources.

Airfield Drainage

The airfield drainage project included the construction of a stormwater detention pond with associated piping and an outfall structure. The stormwater detention pond is located adjacent to the Blackstone Army Airfield at Fort Pickett, as shown in **Figure 5.3-1** (Courier-Record 2012c). This project has the potential to contribute to cumulative impacts on topography, geology and soils, water resources, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, and aesthetic and visual resources when considered in conjunction with the Proposed Action and other past, present, and reasonable foreseeable future projects.

Virginia State Police Driver Training Complex

The Virginia State Police (VSP) has completed the construction of a new law enforcement training complex near the southwest border of Fort Pickett. The project includes a three-story, 48,000-square-foot administration and classroom building, a 120-person dormitory, a cafeteria, driver simulation rooms, an observation tower, and a vehicle maintenance garage with four bays for the care and repair of the VSP fleet (Virginia Tech 2012).

The facility includes a three-mile highway response course consisting of four-lane divided roadways, two-lane secondary roads, an on/off ramp, a simulated bridge surface, and a loop, as well as outer and inner tracks with off-road recovery areas that allow multiple vehicles to use the course at any given time. Also included are a ½-mile off-road response course, a 37-acre urban response course intended to simulate different aspects of an urban environment, and a skill response course (Virginia Tech 2012).

The 680 acre project site is located adjacent to and on land formerly owned by Fort Pickett Military Reservation and is bordered by State Route 644 to the west, Igloo Road to the north, Utility Road to the south, and Hurricane Branch to the east (**Figure 5.3-1**).

According to the Governors Report (Commonwealth of Virginia 2000), public utilities would not be required for the facility. Water would be provided by an on-site well and wastewater would utilize on-

site septic systems. Fire protection water would be stored in an on-site water storage tank with booster pumps. Electricity would be provided from existing power service and stormwater would be managed with detention basins.

Construction of the Driver Training Complex avoids wetlands, archaeological sites, and Virginia Department of Conservation and Recreation-Division of Natural Heritage conservation sites (VSP 2009).

Construction on the new VSP Driver Training Complex began in March 2011 and the facility was dedicated on September 20, 2012. As with Fort Pickett, DOS will coordinate with VSP to determine if shared use of facilities is feasible in view of differing mission requirements and training schedules. The project is anticipated to contribute to cumulative impacts on topography, geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, and aesthetic and visual resources when considered in conjunction with the Proposed Action and other past, present, and reasonable foreseeable future projects.

Town of Blackstone Sewer Improvements

The town of Blackstone, in compliance with a Virginia Department of Environmental Quality (VDEQ) Consent Order, performed upgrades to the municipal sewer and water collection and distribution systems. The Consent Order was due to occasional over flowing at some pump stations. The majority of the work took place in residential areas along College, Brunswick, and Lunenburg Avenues within the central area of town (**Figure 5.3-1**). These upgrades included:

- Installing approximately 17,750 lf of 8 inch sanitary sewer
- Installing approximately 393 lf of 12 inch sanitary sewer
- Installing approximately 2,082 lf of 12 inch force main
- Installing 64 manholes
- Removing 44 manholes
- Installing approximately 15,500 lf of 4 inch sanitary sewer laterals
- Removing and replacing approximately 1,175 tons of asphalt
- Installing five backup generators at pump stations
- Upgrading two existing pump stations with new pumps and controls
- Installing approximately 1,833 lf of 10 inch water main

This project is anticipated to contribute to cumulative impacts on geology and soils, air quality, noise, socioeconomics, traffic, and utilities and infrastructure when considered in conjunction with the Proposed Action and other past, present, and reasonable foreseeable future projects.

Navy EOD 1300 Area Compound

A Notice of Invitation to Bid (Bid # PN: 2W0000812P) was issued for this project on August 1, 2012. The project would entail the construction of one free-standing wood frame structure, the upgrade and renovation of an existing wood frame pole building and the installation of 12,000 sf of concrete slab and additional crushed stone to accommodate eight ready service locker buildings, five mobile units and one concrete and steel armory in the Navy EOD 1300 Area Compound located on Fort Pickett, as shown in **Figure 5.3-1** (Courier-Record 2012b).

The Navy EOD 1300 Area Compound has the potential to contribute to cumulative impacts on geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, and aesthetic and visual resources when considered in conjunction with the Proposed Action and other past, present, and reasonable foreseeable future projects.

Socioeconomic Trends

In 2010, the total resident population in the eight county study area (i.e. Nottoway County, where the FASTC project would be located, and seven other adjacent or otherwise connected counties where employees may reside including Amelia, Brunswick, Chesterfield, Dinwiddie, Lunenburg, Mecklenburg, and Prince Edward) was 459,223. Since 1990, the population in the study area has grown faster than the population of the state of Virginia as a whole, having increased by 40% compared to 29.3%, for the state overall. Population in the study area is concentrated in Chesterfield County, which had 316,236 total residents in 2010 (69% of the total). From 1990 to 2010 Chesterfield County's population grew 51.1%, faster than any other county in the study area and Virginia overall. This population growth has resulted in associated commercial business development in Chesterfield County.

However, Nottoway County, where FASTC is proposed, had a 2010 population of 15,853 and population growth of only 5.7% from 1990 to 2010; population growth was slower in Nottoway County than any other county in the study area and slower than Virginia overall. Nottoway County has had a decline in overall economic activity with a decline in activity at Fort Pickett since the mid-1990s along with a decline in the manufacturing sector in recent years, leading directly to lower employment and an economy without a primary driving force.

Along with population, most of the housing units in the study area are located in Chesterfield County. Consistent with national and regional trends, there has been a decline in the construction of housing units in Chesterfield County since 2005. Of the 122,555 housing units in Chesterfield County, 115,680 are occupied and 6,875 are vacant. The 6,875 vacant units in Chesterfield County represent 37.4% of the total number of vacant housing units within the study area. Mecklenburg County, which has 5,096 vacant units, has 27.7% of the vacant housing units located within the study area. As of 2010 there were 6,650 total housing units in Nottoway County, 944 of which were vacant (5.1%). Blackstone had 1,698 total housing units, 248 of which were vacant (comprising 1.3% of vacant units in the study area and 26% of the vacant units in Nottoway County). Most of the available housing in the study area was in Chesterfield County (68.4%). There were 2,934 housing units for rent in Chesterfield County and 1,714 for sale. There were 308 available housing units in Nottoway County in 2010, 4.5% of the study area total. Blackstone had 123 available units in 2010, 95 for rent and 28 for sale.

<u>Present Actions</u>

Southside Electric Cooperative Upgrades

Southside Electric Cooperative is making infrastructure improvements including new lines, new substations, new switching stations, improvement of over 700 miles of transmission lines. Substations will be converted from 12.47 kilovolts to 24.94 kilovolts to reduce line loss and increase service reliability. Over 2.5 million dollars will be spent in Nottoway, Lunenburg, Dinwiddie, and Brunswick Counties (Southside Electric Cooperative 2012). This project is anticipated to contribute to cumulative

impacts, in conjunction with other past, present, and future projects on the following resources: topography, geology and soils, water resources, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, and aesthetic and visual resources.

Switchgrass Biofuel Plant

Nottoway County is building a 5,000 sf facility that would use switchgrass to create fuel. The building will be three sided and process approximately 3,000 tons of switchgrass a year. The Piedmont Geriatric Hospital of Nottoway County will be one of the users of the fuel. The plant is located behind Arbor Tech on Butterwood Road, as shown in **Figure 5.3-1** (Nottoway County 2012b).

This project has the potential to contribute to cumulative impacts on geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, and aesthetic and visual resources when considered in conjunction with the Proposed Action and other past, present, and reasonable foreseeable future projects.

VaARNG Solar Energy

VaARNG is currently installing 2,000 solar panels that will cover approximately 2.5 acres and provide the Regional Training Institute (RTI) with nearly 80 percent of its daytime energy needs. The 488-kilowatt solar energy array is located at the corner of E Parade and E 23rd St (**Figure 5.3-1**). In addition, VaARNG is also planning to construct a covered parking structure and install solar fields on top of the Building 316 parking lot. Construction of the solar energy installation should be completed by the end of 2014 (VaARNG Public Affairs Office 2014).

This project has the potential to contribute to cumulative impacts on geology and soils, water resources, biological resources, air quality, noise, land use, socioeconomics, traffic, utilities and infrastructure, aesthetic and visual resources, and hazardous materials and wastes when considered in conjunction with the Proposed Action and other past, present, and reasonably foreseeable future projects.

Virginia State Police Firing Range

VSP has proposed the construction of a multi-agency, firing range on former Fort Pickett land (**Figure 5.3-1**). The new firing range will share the 687 acres acquired by VSP in 2008 for construction of its Law Enforcement Driver Training Track and Facility. The proposed Target Practice Range would consist of one 30-lane pistol range; two 18-lane pistol ranges; one 15-lane rifle range; parking areas; prefabricated range towers; restrooms and a pavilion (VSP 2012). According to the site plan, the pistol ranges will be approximately 150 feet long and the rifle range will be approximately 600 feet long (VSP 2012). The ranges will feature 20-foot earthen berms surrounding the pistol and rifle firing lanes. To prevent lead contamination from spent rounds, each lane will be equipped with a lead-collection backstop system. All aspects of the range are in compliance with industry standards used by federal and state public safety agencies nationwide (VSP 2010). An environmental impact report for the project did not identify any surface waters, wetlands, floodplains, cultural resources, threatened or endangered species habitat in the proposed construction area.

The new range site, which is adjacent to Fort Pickett, will be utilized by VSP, Virginia Department of Game and Inland Fisheries' (VDGIF) Conservation Police, Nottoway County Sheriff's Office, and the

police departments of Blackstone, Burkeville, and Crewe (VSP 2010). DOS would consider shared use of facilities with VSP to the extent feasible for the respective missions.

This project has the potential to contribute to cumulative impacts on geology and soils, biological resources, air quality, noise, socioeconomics, traffic and transportation, and utilities and infrastructure when considered in conjunction with the Proposed Action and other past, present, and reasonably foreseeable future projects.

Reasonable Foreseeable Future Actions

Virginia State Police Communication Tower

VSP prepared an environmental impact report for the construction of a 199-foot self-supporting communications tower in Nottoway County (VDEQ 2014). The report indicates that an equipment shelter compound would be constructed along with the tower to support the Statewide Agency Radio System at the VSP driver training facility site on Ridge Road (**Figure 5.3-1**). The project start date is not known, therefore, the cumulative impacts of the project are difficult to fully assess. However, the project is anticipated to contribute to cumulative impacts on geology and soils, biological resources, air quality, land use, utilities and infrastructure, and aesthetic and visual resources when considered with the Proposed Action and other past, present, and reasonable foreseeable future projects.

Solar Facility

A 100-300-acre solar facility is currently being sited to provide power. The location is not yet known, but should be determined by the end of 2014. As the location is unknown, cumulative impacts are difficult to fully assess. However, this project is anticipated to contribute to cumulative impacts, in conjunction with other past, present, and future projects on the following resources: topography, geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic and transportation, utilities and infrastructure, aesthetics and visual resources, and hazardous materials and wastes.

VaARNG Green Energy

The VaARNG is considering constructing a 5.0 megawatt Biomass Energy Plant and a 1.0 megawatt solar photovoltaic system within the boundaries of Fort Pickett. The biomass plant would be powered by waste from a local sawmill, renewable wood biomass from surrounding forests and possibly trash from Fort Pickett and surrounding towns. The solar energy generation system would be located at the Trimble Road Landfill (**Figure 5.3-1**). This project has the potential to contribute to cumulative impacts on climate, geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic, utilities and infrastructure, aesthetic and visual resources, and hazardous materials and waste when considered in conjunction with the Proposed Action and other past, present, and reasonably foreseeable future projects.

Virginia Department of Transportation (VDOT) Bridge Replacement

VDOT is planning to replace an existing railroad bridge on Cox Road (US Route 460 Business) just north of the AC Perkins Airfield (**Figure 5.3-1**). The bridge is located along an access route to Fort Pickett. Traffic will need to be detoured via US Route 460 or otherwise managed during the construction process. Construction is scheduled to commence in 2015.

This project has the potential to contribute to cumulative impacts on geology and soils, air quality, noise, socioeconomics, and traffic when considered in conjunction with the Proposed Action and other past, present, and reasonably foreseeable future projects.

Commercial Recreational Hunting and Fishing Facility

Nottoway County Supervisors recently approved a Use by Special Exemption permit for the operation of a commercial outdoor recreational facility to be located on 377 acres off of Robertson Road, west of Blackstone. The commercial hunting and fishing facility would be constructed in phases and, over time, would include shooting ranges, camping, trail riding, special events for scouting, guest lodging, hunting for the disabled, hunting and fishing equipment sales (including firearm sales) and a meat processing facility. The planned shooting range would feature a protective berm to prevent stray bullets from leaving the property and all hunting activity would be conducted in accordance with Virginia game laws.

This project has the potential to contribute to cumulative impacts on topography, geology and soils, biological resources, air quality, noise, socioeconomics, traffic and transportation, and utilities and infrastructure when considered in conjunction with the Proposed Action and other past, present, and reasonably foreseeable future projects.

Special Operations Urban Combat Facility

The Navy prepared an Environmental Assessment for the proposed construction and operation of a Special Operations Urban Combat (SOUC) facility at Maneuver Training Center, Fort Pickett (**Figure 5.3-1**). The SOUC facility would consist of land designed to replicate a variety of high density urban areas in appearance, construction material and building type, with the specific purpose of better preparing military units for urban warfare. SOUC facility elements include: residential, commercial, and institutional type mock buildings (one to several floors), narrow roads, blind alleys, and long primary attack corridors to simulate three-dimensional urban environments, reminiscent of third world countries, where enemies often take refuge among civilians.

The SOUC facility would be developed in two phases. Phase 1 development, proposed to occur from FY15-FY18, involves assembly and placement of training aids to simulate third world government buildings, and a combat "village" setting. The construction footprint involves development on less than 20% of the entire 158-acre site, and site clearing would occur from October to April to avoid the active season for northern long-eared bat (NLEB). Phase 2 development includes approximately nine acres located in the central portion of the proposed site, to be developed as a Central Business District or City, between FY19 and FY21. Phase 2 involves placement of more modular training aids, containers, and pre-cast concrete structures.

This project has the potential to contribute to cumulative impacts on geology and soils, biological resources, air quality, noise, land use, utilities and infrastructure, and aesthetic and visual resources when considered in conjunction with the Proposed Action and other past, present, and reasonably foreseeable future projects.

Socioeconomic Trends

Reasonably foreseeable future socioeconomic trends in the study area may be inferred from future projections of population growth. Population growth projections in the study area are mixed. Between

2010 and 2035, the population of Chesterfield County is projected to increase to approximately 460,000 people (45% increase) with an average annual growth rate of 1.8% (Chesterfield Planning Commission 2012). However, Nottoway County is expected to decrease in population by 2030; projections show a 5.2% decline in Nottoway County from 2010 to 2030. This projection is the result of the declining economic base in recent years and associated out-migration from the area. From this information, it is reasonable to assume that under the current forecast of population growth, economic development can be expected to grow in Chesterfield County and remain slow in Nottoway County.

Table 5.3-1 provides a summary of all past, present, and reasonably foreseeable future projects to identify the resources that would be affected by each project and provide a temporal context (where available).

Table 5.3-1. Relevant Past, Present, and Reasonably Foreseeable Future Projects

	Estimated Completion Date	Climate	Topography	Geology and Soils	Water Resources	Biological Resources	Cultural Resources	Air Quality	Noise	Land Use and Zoning	Socioeconomics	Traffic and Transportation	Recreation	Utilities and Infrastructure	Public Health and Safety	Aesthetic and Visual Resources	Hazardous Materials and Wastes	Reason for Dismissal From Analysis
Past Projects																		
Regional Training Institute Complex	2008-2011			•		•		•	•	•	•	•	•	•		•		R[1]
Warrior Fitness Trail	2012					•							•					R
Pennsylvania Army National Guard 56th Stryker Brigade Combat Team Transformation and Training	2006-2007					•		•	•	•		•		•				I
Collective Training Facility	2013-2015		•	•	•	•		•	•	•	•	•		•		•		R
Wonju Maneuver Corridor Expansion	2014		•	•	•	•		•	•	•	•	•		•		•		R
Stormwater Basins	2014		•	•	•	•		•	•	•	•	•		•		•		R
Airfield Drainage	2013		•	•	•	•		•	•	•	•	•		•		•		I
VSP Driver Training Complex	2013		•	•		•		•	•		•	•		•		•	•	R
Navy EOD 1300 Area Compound	2013			•		•		•	•	•	•	•		•		•		I
Town of Blackstone Sewer Improvements	2014			•				•	•		•	•		•				R/I
Present Projects																		
Southside Electric Cooperative Upgrades	2014		•	•	•	•		•	•	•	•	•		•		•		R/I
Switchgrass Biofuel Plant	2014			•		•		•	•	•	•	•		•		•		R/I
VaARNG Solar Energy	2014			•		•		•	•	•	•	•		•		•	•	I
VSP Firing Range	2015			•		•		•	•		•	•		•				R
Reasonable Foreseeable Future Projects																		
VSP Communications Tower	TBD			•		•		•		•				•		•		R
Solar Facility	TBD		•	•		•		•	•	•	•	•		•		•	•	I
VaARNG Green Energy	TBD	•		•		•		•	•	•	•	•		•		•	•	R/I
VDOT Bridge Replacement	2015			•				•	•		•	•						I
Commercial Recreational Hunting and Fishing Facility	TBD		•	•		•			•	•	•	•	•	•				R/I
SOUC Facility	2015-2021			•		•		•	•	•	•	•		•		•		R

Notes: [1] *R=Retained; RI= Retained/Incomplete data; I=Insufficient Data*

5.4 Cumulative Effects Analysis

Resource specific information required to perform a detailed cumulative analysis was not reasonably available for all of the identified projects. Projects with insufficient data for all resources were distinguished with a letter "I" in Table 5.3-1 and were not included in the cumulative analysis. These projects were identified as having occurred or as proposed to occur but no other information was included in the cumulative analysis. Projects with limited available resource information were distinguished with a "R/I" in Table 5.3-1 and were included to the extent practicable. For these projects, limited specific information was obtained and assessed cumulatively, where possible. Projects with sufficient information for cumulative analysis were distinguished in Table 5.3-1 with an "R" and are considered cumulatively for all applicable resource categories.

5.4.1 Climate

Virginia's climatic changes have been thoroughly documented over recent decades. Scientific evidence predicts that climate change will continue and may accelerate unless action is taken to reduce global greenhouse gas (GHG) emissions. Regional climate models predict that annual average temperatures will rise by three to four degrees centigrade over this century and possibly more, with corresponding increases in both maximum and minimum temperatures. Overall precipitation is also expected to increase by about ten percent with more days of intense precipitation and precipitation became more variable, with greater frequency of both wet and dry periods (Repetto 2012).

Under the Proposed Action, the design of the two largest buildings (A01 and T01) of Build Alternative 3 to LEED Silver standards would improve building energy efficiencies and reduce GHG emissions associated with energy use as compared to similar buildings constructed to general construction industry standards.

One project was identified that may have the potential to produce cumulative impacts when considered with Build Alternative 3: the VaARNG Green Energy project. The VaARNG is currently constructing a 488-kilowatt solar energy installation at Fort Pickett. This solar project will be regulated under Virginia's Solar Permit By Rule regulation. Additionally, as part of the Green Energy project, the VaARNG is planning to construct a biomass energy plant. This plant would meet the definition of "stationary source" of air emissions as defined by the Clean Air Act (CAA). The facility would be regulated under the state Permit By Rule regulation for Small Renewable Energy Projects (Combustion).

The 5.0 megawatt bioenergy plant would emit GHGs as a result of combustion. Once both facilities are constructed, the two systems would be assumed to ultimately operate concurrently as there are significant daily and seasonal variations in the solar resource, and how much electricity is generated by a photovoltaic system varies by time of day, time of year, and weather conditions (cloudiness, temperature, and wind). Based on studies of photovoltaic systems (Connors et al 2004), these systems are estimated to reduce the amount of GHG emissions generated on a production basis as compared to other energy generation (coal, fuel oil, gas combustion) systems. Additionally, the combustion of biomass such as sawdust and municipal waste precludes the disposal of these materials by more traditional means, eliminating the methane that would be generated as these material biodegrade.

Some or all of the emissions of carbon dioxide emitted by the bioenergy plant would be offset by the reduction in the much more potent methane that would be prevented from generation.

The GHG emissions of the biomass energy plant, in combination with Build Alternative 3, would result in minimal increases in the atmosphere's concentration of GHGs, and, in combination with past and future emissions from all other sources, contribute incrementally to the global warming that produces the adverse effects of climate change. At present, no methodology exists that would enable estimating the specific impacts (if any) that this increment of warming would produce locally or globally.

5.4.2 Topography

Some of the past, present, and reasonably foreseeable future construction projects in the area would occur on land that has already been disturbed and/or was historically developed. Therefore, these projects would only have temporary impacts on topography as a result of grading activities and ground disturbance during construction. Following completion of construction, existing grades would be restored where possible. Minor changes in topography associated with these projects would be localized and would not result in significant cumulative impacts.

Construction projects proposed in previously undeveloped areas would have larger and more permanent impacts on area topography. These projects include:

- Mission EA Past Projects
- Combined Arms Collective Training Center
- Wonju Maneuver Corridor Expansion
- Stormwater Basins
- Airfield Drainage
- VSP Driver Training Complex
- Southside Electric Cooperative Upgrades
- VSP Communications Tower
- Solar Facility
- VSP Firing Range
- SOUC Facility

Topographic impacts resulting from the implementation of the aforementioned projects in previously undeveloped areas are not anticipated to substantially alter or remove prominent geologic features; or alter area drainage patterns and associated groundwater recharge.

Minor direct topographical changes are anticipated on Parcel 21/20, the Grid Parcel, and LRA Parcel 9 to accommodate the proposed development of the FASTC facility. Extensive grading and filling would occur during site preparation for the various buildings and structures needed for FASTC training activities. Grading and filling activities would not require blasting nor would it result in changes in area drainage patterns. The importation or offsite disposal of soil would not be required. Therefore, the Proposed Action would have no significant impacts on topography. When considered with past, present, and reasonably foreseeable future projects, Build Alternative 3 would not result in cumulative impacts to topography. Therefore, cumulative impacts would not be significant.

5.4.3 Geology and Soils

Implementation of Build Alternative 3 along with past, present, and reasonably foreseeable future projects would disturb and redistribute soils within the study areas. Construction projects proposed in previously undeveloped areas would have larger impacts on geology and soils. However, soils in these areas would already meet structural requirements and, therefore, would not require the importation of structural fill. Construction of the FASTC elements would have a direct impact on project area soils as a result of temporary disturbance from construction activities and off-road drive track operation. However, geotechnical investigations for Build Alternative 3 indicated that structurally suitable soils are present in the area. Therefore, past, present, and reasonably foreseeable future construction projects in previously undisturbed areas in the vicinity are also likely to contain suitable soils and not require the importation of structural fill. Soil not used for structural support would be incorporated into site grading and landscaping, is common practice, and would not be disposed of off-site. Erosion and sedimentation controls would be employed for all construction projects as required by federal and state regulations. Therefore, cumulative impacts to geology and soils would not be significant when considered with Build Alternative 3.

5.4.4 Water Resources

Soil erosion and stormwater runoff are largely responsible for degradation of surface waters. Implementation of Build Alternative 3 along with past, present, and reasonably foreseeable future projects would disturb soils and would result in temporary increases in soil disturbance and potential soil erosion and a permanent increase in impervious surfaces in the area, with a consequential increase in stormwater runoff. Any construction project where clearing, grading, and excavating activities would disturb one acre or more, including smaller sites in a larger common plan of development, would be required to obtain a General Construction Permit for their stormwater discharges under the Clean Water Act (CWA). A Stormwater Pollution Prevention Plan (SWPPP) is a requirement of the National Pollutant Discharge Elimination System (NPDES) permit process. For projects that disturb less than once acre, compliance with the Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations would be required. Compliance with these programs would ensure the use of best management practices (BMPs) for erosion, sedimentation, and stormwater flow control. This assessment assumes BMPs would be effective at controlling soil erosion and stormwater flow for the applicable new construction projects identified in **Table 5.3-1**. As a result, cumulative construction impacts to water resources would not be significant.

Cumulative projects would result in an increase in impervious surface areas in the project vicinity, resulting in a corresponding increase in stormwater runoff that has the potential to carry elevated levels of contaminants, such as sediments, nutrients, heavy metals, organic and inorganic compounds, and detrimental microorganisms. The increase in impervious surfaces would result in an associated increase in stormwater discharge intensities and volume. This increase would likely be accommodated by existing or new stormwater infrastructure to ensure the timely and low-impact flow of stormwater to minimize erosion and flooding concerns. Low Impact Development (LID) measures would also be incorporated into the FASTC facility design that would further minimize stormwater flow. As a result, cumulative impacts to water resources would not be significant.

Cumulative actions would result in increases in the amount of petroleum, oil, and lubricants (POLs), hazardous waste, pesticides, and fertilizers being stored, transported, and utilized. Increasing the storage, transportation, and use of these substances would increase the potential for releases to water resources. Implementation of BMPs associated with addressing site- and activity-specific water resource protection needs, provisions of facility-specific SWPPPs, and Spill Prevention, Control, and Countermeasure (SPCC) Plans would minimize potential impacts from facility operations, including the transportation, storage, and use of fuel, on all water resources. As a result, cumulative impacts to water resources would not be significant.

While groundwater production rates would increase as a result of the VSP Driver Training Complex construction, no cumulative impacts are anticipated as the remaining construction projects would utilize municipally supplied water. Therefore, impacts to groundwater would not be significant.

An estimated 5.72 acres of wetlands (4.86 acres of direct impacts and 0.86 acres of clearing impacts) would be adversely affected by Build Alternative 3. GSA would obtain a permit for wetland and stream impacts from USACE under CWA Sections 404 and 401, which would require full mitigation of impacts. The mitigation would reduce the direct impacts to less than significant. Based on available information, it appears that the other past, present, and reasonably foreseeable future construction projects would avoid affecting wetlands or would have minor effects; therefore, there would be no cumulative wetland impacts.

5.4.5 Biological Resources

Vegetation

Build Alternative 3 would involve ground disturbing activities and tree clearing for construction of new facilities. A substantial portion of the proposed construction and demolition projects associated with Build Alternative 3 would occur within areas that have been previously disturbed and/or are actively managed (i.e., silviculture, mowed, and landscaped). Most cumulative projects are presumed to impact terrestrial biological resources if there is ground disturbance. Insufficient details on each project are available to assess the total loss of habitat for all of the cumulative projects. Projects where the site areas are known are included in the cumulative analysis and are summarized in **Table 5.3-2**. 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 cumulatively, the past, present, and reasonably foreseeable future projects in the area would result in the development of approximately 1,590 acres of previously disturbed and undisturbed land in Nottoway County. Much of this land is forested. According to a 2011 forest survey conducted by the United States (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 723 acres of forest would constitute a loss of less than one half of 1% of forested land in Nottoway County and is not considered to be significant. 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.

Table 5.3-2. Construction Project Areas and Forest Impacts

Project	Estimated Site Area Development (Acres)	Previously Disturbed	Forested	Estimated Forest Area Impact (Acres)
Regional Training Institute Complex	5	yes	no	0
Pennsylvania Army National Guard 56th Stryker Brigade Combat Team Transformation and Training	15	unknown	no	0
Wonju Maneuver Corridor Expansion	138	partially	yes	138
VSP Driver Training and Target Practice Range Complex	680	yes	partially	60
Switchgrass Biofuel Plant	1	unknown	unknown	1
SOUC Facility	158	no	yes	29
Subtotal	**997**			**228**
FASTC Build Alternative3	468	partially	partially	365
Total Cumulative	**1,465**			**593**

Wildlife

Cumulative impacts to wildlife would be both short- and long-term. Short-term noise level increases from construction activities could temporarily displace wildlife from the immediate area, including birds that are protected under the Migratory Bird Treaty Act. Similar impacts may also result from long-term noise increases from area operations. Those wildlife species that are more tolerant of human activity are anticipated to acclimate to operational noise and repopulate suitable habitat areas, where present (Larkin 1994).

Permanent impacts to wildlife would result from the cumulative loss of habitat from the past, present, and reasonably foreseeable future development of the area. Approximately 1,000 acres of forest habitat would be removed from the area and would no longer available to wildlife. The re-vegetation strategies outlined in Section 4.1.5.3, *Mitigation*, would reduce cumulative impacts to wildlife habitat by preserving forest block connectivity to the extent practicable. The preservation of connectivity would provide for wildlife movement between forested areas and would minimize impacts to forest interior species by providing linkages between the larger forest blocks in the area. The species that would be affected by this habitat loss are widespread in the area and are not subject to regulatory protection. Wildlife species would be permanently displaced by the past, present, and reasonably foreseeable future projects, however, suitable habitat would be available on adjacent land areas. Conservation measures that would be implemented under the Endangered Species Act for NLEB, including conducting most site clearing from October to April to minimize construction impacts, would also benefit other wildlife, including migratory birds, during the breeding season. Therefore, cumulative impacts to wildlife would not be significant.

Threatened and Endangered Species

Re-vegetation strategies and conservation measures for NLEB that would be implemented for Build Alternative 3 and the proposed SOUC project would reduce cumulative impacts to NLEB habitat. Conservation measures may include preserving forest block connectivity to the extent practicable, conducting most vegetation clearing from October to April to avoid the NLEB maternity season, and the use of dark sky lighting standards. Preservation of 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.

Impacts to NLEB could result from noise associated with construction and operational activities. The Regional Training Institute Complex, the Pennsylvania Army National Guard 56th Stryker Brigade Combat Team Transformation and Training, the Wonju Maneuver Corridor Expansion, and the Virginia State Police Driver Training and Target Practice Range Complex will have already been constructed and would not contribute cumulative construction noise; however, operational noise may be cumulative. The Switchgrass Biofuel Plant is currently under construction. There were no operational noise impacts reported for these projects. Military training activities at the proposed SOUC facility would generate a minor increase in noise from vehicle and airspace operations. However, the facility is located adjacent to Fort Pickett firing ranges that already produce noise. 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. Route 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 immediate vicinity of the northwest boundary of Fort Pickett 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.

5.4.6 Cultural Resources

Implementation of the Proposed Action would have no direct or indirect adverse effects on National Register of Historic Places (NRHP)-eligible architectural or archaeological resources. All sites recommended as potentially eligible for the NRHP would be avoided by the Proposed Action. GSA has initiated consultation with the Virginia State Historic Preservation Officer (SHPO) on this finding of effects and the results will be incorporated in the Final SEIS.

Ground disturbance and construction of new facilities associated with other cumulative projects located within Fort Pickett could impact prehistoric and historic archaeological resources or historic buildings. A review of each project would need to be completed prior to construction to determine if the project is located in an area of the installation with a high potential for archaeological resources, and an archaeological survey would be conducted to identify and evaluate archaeological sites for NRHP significance. A review would also be completed to determine whether any previously undocumented buildings would need to be surveyed and evaluated for NRHP significance. Any impacts to eligible resources would be resolved through the Section 106 process. Federal projects with potential for impacts on cultural resources would undergo Section 106 review under the National Historic Preservation Act (NHPA), which includes consultation with the Virginia SHPO and affected Native

American tribes. For these reasons, it is expected that there would be no cumulative impacts on cultural resources.

5.4.7 Air Quality

The study area for air quality cumulative impacts is the area in the vicinity of Fort Pickett that would experience an increase in air emissions from construction and operations actions associated with the Proposed Action. The past, present, or reasonably foreseeable future actions identified in **Section 5.3** that have a potential to interact with the Proposed Action and cumulatively impact air quality primarily include projects that would increase or decrease operations at Fort Pickett, establish a new stationary source of air emissions, increase vehicle traffic in the area, or require new construction in the area.

The previous projects identified in **Section 5.3** generally did not have long-term impacts to air quality. Therefore, they would not have long-term cumulative impacts to air quality when considered with the Proposed Action. The present and reasonably foreseeable future projects identified in **Section 5.3** have the potential to contribute to changes in air quality. The majority of the impacts would be short-term construction impacts from projects occurring during the same time period as FASTC construction (**Table 5.3-1**). The Proposed Action would not significantly impact local or regional air quality; therefore, in conjunction with past, present, and reasonably foreseeable future projects, the Proposed Action would not contribute to significant cumulative impacts to air quality.

Traffic increases in the area resulting from new construction and increased operations would likely result in an increase in mobile source emissions. Short-term cumulative impacts from traffic emissions would largely be due to increased construction traffic from projects occurring during the same time period as FASTC construction (**Table 5.3-1**). When considered cumulatively these projects are anticipated to have emissions that would not be significant. The CAA regulates mobile source engines with newer engines required to emit lower levels of internal combustion emissions. Thus, long-term impacts of highway vehicle emissions will decrease. The mobile source emissions that would be generated from highway vehicles used by FASTC staff and students would result in minor emission increases in the near future, but would decline as newer model vehicles are used. The reduction of mobile source engine emissions in the future, per CAA requirements, would contribute to a long-term reduction of the overall mobile source and GHG emissions. Therefore, the long-term cumulative air quality conditions affected by mobile source operations would likely remain the same or improve slightly, as compared to the existing conditions and would not be significant.

5.4.8 Noise

The VDOT Bridge Replacement is the only cumulative project known to be scheduled for construction during the same time frame as the Proposed Action. Because this project and the implementation of Build Alternative 3 would begin in 2015, there would be cumulative noise impacts in the vicinity of U.S. Route 460, Cox Road, and Military Road from construction vehicles traveling to/from the site. Construction projects would be limited during certain days and hours during the week to minimize impacts. These cumulative impacts would be temporary and not significant.

Operations of all the cumulative projects would generate some level of noise. It is unlikely that the cumulative projects would generate noise at levels that would be subject to regulation or harmful to

human health. Environmental impact documents were reviewed for the VSP Driver Training Complex and VSP Firing Range. There were no operational noise impacts reported for these projects. Military training activities at the proposed SOUC facility would generate a minor increase in noise from vehicle and airspace operations. However, the facility is located adjacent to Fort Pickett firing ranges that already produce noise, and wooded areas surrounding the site would buffer and dampen noise. Implementation of Build Alternative 3 along with past, present, and reasonably foreseeable future projects would not result in significant cumulative impacts.

5.4.9 Land Use and Zoning

Construction under Build Alternative 3 would remain within the boundaries of Fort Pickett and there would be no direct land use impact to Fort Pickett or Nottoway County land uses. Induced business growth or development in Nottoway County and in the town of Blackstone due to trainees and staff spending in proximity to the FASTC facility may occur. There is available space in downtown Blackstone for commercial businesses in the business and commercial zones that is both developed and vacant or yet to be developed. There are also General Business zoned properties of the County in Pickett Park and along Route 460 that would be suitable locations for induced development such as motels and/or restaurants that would frequented by FASTC trainees. This potential induced growth would most likely be in appropriately zoned and vacant properties. Therefore, business growth would be consistent with local and county zoning and comprehensive plans.

Parcel 21/20 and Grid Parcel are currently federal land and are not zoned. Build Alternative 3 would be consistent with existing military land uses, but would directly and adversely impact recreational uses of forested areas. Several of the VaARNG proposed future developments would convert forested areas into developed land (i.e., VSP Driver Training Complex, SOUC Facility). Implementation of Build Alternative 3 along with past, present, and reasonably foreseeable future projects would result in cumulative impacts to land use; however, the impacts would not be significant.

LRA Parcel 9 is currently zoned industrial. Build Alternative 3 would constitute a change in zoning from industrial to federal land. The Nottoway Board of Supervisors intends to make these changes and has provided correspondence stating there is no conflict between the County's Comprehensive Plan and the proposed FASTC facility. Implementation of Build Alternative 3 along with past, present, and reasonably foreseeable future projects would not result in cumulative impacts to zoning.

5.4.10 Socioeconomic Resources and Environmental Justice

Implementation of the Proposed Action along with past, present, and reasonably foreseeable future projects would result in cumulative changes in the socioeconomic condition in the study area. Most of the projects would have short- or long-term beneficial economic impacts. Short-term jobs would be created in the construction of facilities, while long-term jobs would be created for the operation of the facilities. The projects are anticipated to bring additional residents and workers to the area and it is anticipated that these residents and workers would shop (i.e., food, clothing, gas, household goods, restaurants, etc.) in the local community thereby contributing positive cumulative impacts on the local economy. The cumulative effects of this beneficial economic impact may bolster the slow growing economy in Nottoway County.

The cumulative impacts of the various past, present, and reasonably foreseeable future projects is consistent with the development trends found in the socioeconomic study area (i.e. Nottoway County, where the FASTC project would be located, and seven other adjacent or otherwise connected counties where employees may reside including Amelia, Brunswick, Chesterfield, Dinwiddie, Lunenburg, Mecklenburg, and Prince Edward). With the exception of portions of Chesterfield County, the bulk of the study area can be classified as rural; typically counties in the study area have low population density (large land area with a relatively small population).

The FASTC construction effort would be temporary and is not be expected to result in a short- or long-term increase in population when considered in conjunction with past, present, and reasonably foreseeable future projects. Therefore, there would be no cumulative direct or indirect impacts to the study area housing market, including temporary residences such as motels and recreational vehicle parks from FASTC construction. FASTC operations are estimated to generate an estimated 574 direct jobs and 209 indirect/induced jobs within the study area. Total operations-related employment would increase from 78 in 2016 to a steady-state total of 783 jobs in 2020. This population would be spread throughout the study area, but, based on a survey of a sample of expected transfer employees, the bulk of new population would be expected to reside in Chesterfield (70%) and Nottoway (15%) counties. This would result in less than 1% of the total housing units and 10% of the available housing units in Nottoway County. In Chesterfield County, increased demand would represent less than 1% of the total housing units and 3% of the available housing units. As a result of the proposed land acquisition, there would be up to five occupied residential units, and up to nine businesses and one nonprofit entity that would be displaced. Some of these individuals would be considered low-income. GSA has initiated relocation planning, and counselors have contacted the individuals and businesses to advise people about relocation assistance benefits. GSA has undertaken a proactive public outreach effort to gather information in order to meet any special concerns related to the potential relocation. Reimbursement of moving costs may be paid on the basis of actual reasonable moving costs and related expenses or under certain circumstances, a fixed payment may be provided. As a result, this impact would not be significant.

Direct and indirect employment associated with past, present, and reasonably foreseeable future projects other than the Proposed Action is expected to be minor as the majority of the identified projects would have low staffing needs that are anticipated to be filled by current residents of the region and would not result in significant population growth or associated development; therefore the additive effect of cumulative population growth would be minor.

Environmental Justice

The cumulative beneficial economic impacts of the Proposed Action along with past, present, and reasonably foreseeable future projects may bolster the slow growing economy in Nottoway County and be beneficial to minority and low-income populations of the study area.

Implementation of the Proposed Action along with past, present, and reasonably foreseeable future projects may result in cumulative short-term noise and traffic impacts associated with construction traffic along Route 460, Cox Road, and Military Road that would be adjacent to a minority and low income area (refer to **Figure 4.2-12**). However, these roadways primarily traverse an industrial zone

where there are few residents. The impacts would also be experienced by a small number of residents in non-minority areas along the travel routes for the Proposed Action and for the other projects. Temporary cumulative construction impacts would, therefore, not be disproportionately high and adverse for environmental justice populations. Based on the traffic cumulative impacts discussed in **Section 5.4.10**, there would not be long-term cumulative traffic effects on the minority area. Therefore, based on this assessment of short- and long-term impacts, there would be beneficial cumulative economic impacts and there would not be disproportionately high and adverse cumulative impacts to environmental justice populations.

Protection of Children

Implementation of the Proposed Action would not result in any potential for health and safety risks to children at Fort Pickett or impacts to schools. Therefore, there would be no cumulative impacts.

5.4.11 Traffic and Transportation

Temporary traffic impacts would result from demolition and construction activities. The following types of additional trips are expected be added to the highway network:

- Construction worker commuting trips;
- Trips involving the delivery and removal of construction equipment and materials; and
- Trips involving the removal of demolition debris and excess fill material.

These trips would be temporary, and would not occur after the completion of project construction. Whereas construction worker commuter trips are expected to be concentrated during the traditional peak commuting periods, other trips would likely be dispersed throughout the typical working day. Regardless of the access option selected, construction traffic would approach the project site via Dearing Avenue, and would not enter Fort Pickett at either the Main Gate or the West Gate. The existing barrier across Dearing Avenue to the north of W. 10th Street would be temporarily opened to construction traffic until construction activities are completed. Given the temporary nature of construction traffic, and considering that all traffic movements are characterized by level of service (LOS) C or better conditions under the No Action Alternative (refer to **Section 4.2.6.2**), the addition of construction related trips is not expected to result in a significant traffic-related impact. Because the operations under the Proposed Action would not cause any movement to exceed the minimum performance standard of LOS D, there would be no adverse traffic impacts and no avoidance, minimization, or mitigation measures are needed.

The past, present, or reasonably foreseeable future projects that have potential to interact with the Proposed Action and cumulatively impact traffic are limited to those projects that would add personnel and increase traffic in the vicinity of Fort Pickett. Projects that would have short-term cumulative construction traffic impacts when considered with FASTC include the VSP Driver Training Complex, VSP Communications Tower, VSP Firing Range, and VDOT Bridge Replacement.

The VSP Driver Training Complex, VSP Communications Tower and VSP Firing Range would all occur on State owned land off of Ridge Road. Construction traffic from the north would access the site via U.S. Route 460, VA Route 40, West Entrance Road, Ridge Road, and Igloo Road. From the south, construction

traffic would access the site via Route 46 and Ridge Road. The VDOT Bridge Replacement project would occur on Cox Road and would replace the railroad overpass just north of the Allen C. Perkins Airport. The replacement project may hinder traffic movement at this location and because it would occur during the same year as the Proposed Action. Therefore, short-term cumulative impacts would result during construction.

To assess long-term operational cumulative traffic impacts, environmental impact documents were reviewed for the VSP Driver Training Complex and the VSP Firing Range. There were no traffic impacts reported for these projects. The EOD 1300 Area Compound is assumed to support existing personnel training at Fort Pickett and would not generate additional operational traffic. Therefore, there would not be long-term cumulative effects with the Proposed Action for these projects.

Infrastructure and utility related projects (i.e., Stormwater Basins, Airfield Drainage, Southside Electric Cooperative Upgrades, Switchgrass Biofuel Plant, VaARNG Solar Energy, VSP Communications Tower, Solar Facility, town of Blackstone Sewer Improvements, and VaARNG Green Energy projects) are not likely to result in operational traffic increases. Only the Regional Training Institute Complex and Pennsylvania Army National Guard 56th Stryker Brigade Combat Team Transformation and Training have potential for cumulative traffic increases, but these increases are not known at this time and would be dependent on the degree and frequency of the training being conducted.

Therefore, based on estimates of traffic for all projects, implementation of Build Alternative 3 along with past, present, and reasonably foreseeable future projects would have short-term cumulative impacts during construction, but would not result in long-term cumulative impacts to traffic and transportation.

5.4.12 Recreation

Build Alternative 3 would have a direct adverse impact on hunting resources. The construction of the FASTC facility would impact approximately 1,210 acres of hunting area on Parcel 21/20, the Grid Parcel, and LRA Parcel 9. The acreage lost to FASTC construction constitutes approximately 3% of the available hunting land at Fort Pickett. However, to minimize this impact, hunting would be permitted during periods of time and in areas where training is not occurring, to the extent feasible. Therefore, with mitigation to allow continued access and other available hunting areas, direct and indirect impacts to recreational hunting would be adverse, but not significant. There would be no impacts on fishing activities.

Cumulative impacts to fishing and hunting would occur as a result of the past, present, and reasonably foreseeable future projects. Site development would reduce the land available for hunting and fishing within the boundaries of Fort Pickett. Hunting and fishing areas would still exist at Fort Pickett in areas outside of the cumulative project sites and no decrease in the number of hunting and fishing licenses issued is anticipated. The establishment of a 377 acre commercial recreational hunting and fishing facility to the west of the town of Blackstone would further minimize impacts to hunting and fishing. Therefore, cumulative impacts would not be significant.

5.4.13 Utilities and Infrastructure

Implementation of the Proposed Action along with past, present, and reasonably foreseeable future projects would increase demand for power, water, and sewer. If the VaARNG Green Energy (biomass

energy plant and solar photovoltaic array) project is constructed, they would be net producers of electricity and would help to offset increased power demands from the newly constructed facilities. The cumulative increase in electrical demand is anticipated to be within the capacities of the Southside Electric Cooperative Upgrades, and no significant cumulative impact is expected. In addition Southside Electric Cooperative is in the process of making infrastructure upgrades that will increase their efficiency.

Cumulative increases in the demand for potable water would be minor. The proposed driver training facility would use on-site wells to meet demand. The remaining cumulative projects are anticipated to use municipal water. Total demand is not anticipated to exceed the existing permitted capacity of 3.5 million gallons per day (mgd) at the town of Blackstone's water treatment plant. The town of Blackstone and Fort Pickett have an agreement that the water treatment plant will maintain 75% of the capacity in the event that Fort Pickett were to become fully mobilized (Blackstone 2014). Based on a permitted capacity of 3.5 mgd, this would be 2.625 mgd resulting in a capacity of 875,000 gpd for the town. Therefore, cumulative impacts to potable water would not be significant.

According to 2011-2012 wastewater treatment data (Blackstone 2012) the Blackstone wastewater treatment plant (WWTP) currently treats approximately 514,000 gallons per day (gpd). The projected daily average volume of wastewater that would be treated at the WWTP following the construction of FASTC (16,000 gpd) and the VSP Driver Training Complex (22,275 gpd) is 552,275 gpd. The WWTP currently has a capacity of 2 mgd. Therefore, cumulative impacts to the WWTP would not exceed the existing treatment capacity and would not be significant. However, the town of Blackstone maintains a 1.5 mgd water and wastewater reserve in the event that Fort Pickett becomes fully mobilized (Blackstone 2014). If full mobilization should occur, then the capacity of the WWTP would not be sufficient to handle the projected cumulative flows. Additional development induced by the Proposed Action and other projects may add additional demand. To ensure sufficient reserve capacity, the town may choose to pursue additional capacity to meet existing and future needs (Blackstone 2014).

5.4.14 Public Health and Safety

Emergency Services

The past, present, and reasonably foreseeable future projects are not anticipated to have significant cumulative impacts on emergency services. Police services at Fort Pickett and in Nottoway County and the town of Blackstone are experienced and well-staffed. Likewise, there are ample firefighting and rescue resources in Nottoway County and the town of Blackstone but they can be short staffed during instances of multiple simultaneous emergencies. Therefore, there is a moderate potential for adverse cumulative impacts to occur due to slower response times for fire emergencies if multiple fire emergencies were to occur.

Operational Safety

Operations at FASTC would be conducted within the confines of the study area parcels and all operations would be conducted with the oversight of FASTC instructors and safety personnel. Therefore, operational safety would have no cumulative effect with other operations being conducted within the region by other agencies and organizations.

Environmental Health Effects

Current activities at Fort Pickett generate noise which is conducted in accordance with applicable regulations to protect the general population and workers from excessive noise exposure. Any additional noise generated due to the past, present, and reasonably foreseeable future projects would also be conducted with applicable regulations and the Proposed Action is not expected to cause additional environmental health effects.

A cumulative increase in potential for accidental releases of hazardous materials may occur as a result of past, present, and reasonably foreseeable future projects. However, compliance with existing laws such as CWA and Resource Conservation and Recovery Act (RCRA) would minimize the potential for potential accidental releases and would expedite response and clean-up efforts if a release should occur. Therefore, the Proposed Action would not result in adverse cumulative environmental health effects.

Notifiable Diseases

FASTC is the only past, present, or reasonably foreseeable future project that would result in the hosting trainees from outside the U.S. Incoming FASTC trainees and employees are subject to U.S. visa immunization procedure requirements and U.S. visa health requirements for medical and human rights clearance. The cumulative projects are more likely to involve only U.S. citizens. Therefore, there would be no cumulative impacts associated with notifiable diseases.

5.4.15 Aesthetic and Visual Resources

Implementation of the Proposed Action along with past, present, and reasonably foreseeable future projects would have minor changes to the aesthetic and visual resources of the study area. Projects associated with VaARNG are planned to occur in areas with similar buildings and structures and may improve the visual aesthetics of the area by replacing older unattractive buildings to accommodate new development. As a result, cumulative impacts would not be significant.

5.4.16 Hazardous Materials and Waste

The combined past, present, and reasonably foreseeable future actions are expected to result in an increase in the transport, storage, and use of POLs that would result in a cumulative increase in the potential for accidental releases as a result of spills from vehicle maintenance and fueling and motor vehicle accidents. The increase in hazardous materials and wastes would be both short- and long-term. Short-term cumulative impacts would generally be limited to the construction period for the majority of these projects and would not result in any long-term increase of hazardous materials. For those projects where long-term hazardous waste generation would occur (i.e., VSP Driver Training Complex, VSP Firing Range) the impacts would be limited to the immediate area and the sites would be managed so as to minimize or eliminate potential impacts to the environment. Existing facilities and established procedures are in place for the safe handling and use of these materials, and any increase in hazardous waste generated at Fort Pickett would be removed and disposed in accordance with applicable federal, state, and local regulations. No cumulatively significant impacts from hazardous materials and wastes are anticipated.

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CHAPTER 6 SUMMARY OF MITIGATION MEASURES FOR PREFERRED ALTERNATIVE AND PROPOSED MANAGEMENT ACTIONS

Avoidance and minimization of adverse impacts to natural, cultural, and other environmental resources were integrated into the Proposed Action to the greatest extent possible and practicable. However, adverse impacts may not always be completely avoided and/or minimized. Adverse impacts for each resource are discussed in the environmental consequences section and are described below and summarized at the end of the chapter in **Table 6.16-1**.

6.1 CLIMATE

Incorporation of Leadership in Environmental and Energy Design (LEED) Silver standards into the design of the two largest buildings planned for the FASTC Core Area (A01 and T01) would improve building energy efficiency. As a result greenhouse gas emissions associated with climate change that are generated by energy use would be reduced as compared to non-LEED certified buildings built to general construction standard specifications.

6.2 TOPOGRAPHY, GEOLOGY, AND SOILS

Grading and filling impacts to topography and soils would be minimized during the design process to the extent feasible and though compliance with the regulatory requirements outlined in the Clean Water Act (CWA) (Sections 319 and 401), the Virginia Stormwater Management Program, and the Virginia Erosion and Sediment Control Program.

Additionally, best management practices (BMPs) for erosion and dust control would be implemented during facility construction and operation. BMPs may include application of water or gravel during construction and operation activities.

6.3 WATER RESOURCES

Measures to avoid and/or minimize impacts to water resources, such as orienting all stream crossings to be perpendicular to the stream channel, the use of suitably sized culverts or bridges, as appropriate, to maintain efficient peak flow and minimize stream impacts, and avoidance of 100-foot wetland and stream buffers, would be incorporated in detailed project design to the extent feasible. Low Impact Development (LID) measures and stormwater BMPs would be incorporated into the facility design to minimize stormwater runoff.

Impacts to water resources would be minimized via compliance with Energy Independence and Security Act of 2007 (Section 438); the Clean Water Act (CWA); the Virginia Stormwater Management Program; and the Virginia Erosion and Sediment Control Program. Adherence to regulations and plans for the transport, storage, use, and disposal of petroleum, oil, and lubricants, hazardous waste, pesticides, and fertilizers would avoid or minimize the potential for accidental release.

Further minimization of impacts to wetlands would be considered where possible as the proposed project proceeds to detailed design, and methods to reduce impacts to remaining wetlands would be considered further. Unavoidable wetlands and stream impacts under Build Alternative 3 would be

mitigated through full compliance with the permit issued under CWA Section 404 and 401 via the one or more of the following mechanisms:

1. Purchase Credits from an approved wetland and stream bank within the Nottoway River watershed. Preliminary inquiries made to wetland mitigation banks in the wetland mitigation bank service area for the affected watershed indicated that mitigation bank credits would be available for the project.
2. In Lieu Fee Payment to the Virginia Aquatic Resources Trust Fund managed by the Nature Conservancy.
3. Purchase of mitigation credits from the Army National Guard (ARNG) Maneuver Training Center Fort Pickett (Fort Pickett) from a potential mitigation bank under consideration by ARNG within the Nottoway River watershed portion of the Army Compatible Use Buffer (ACUB) area, if available.

The U.S. General Services Administration (GSA) would obtain a permit for wetlands and streams impacts from USACE under CWA Sections 404 and 401, which would require full mitigation of impacts.

6.4 Biological Resources

6.4.1 Vegetation

In order to minimize impacts to vegetation during and after completion of construction the following re-vegetation strategies have been proposed:

1. **Avoid Disturbance Whenever Possible**: The Proposed Action would be designed to preserve as much existing vegetation as possible.
2. **Treat Disturbed Edges**: Where existing woodland/forest is disturbed, new woodland-edge vegetation (early succession trees, shrubs, grasses) would be planted along the disturbed edges to re-establish a more natural edge to forest, create corridors for wildlife movement, and prevent invasive species from establishing along disturbed edges.
3. **In Disturbed Areas, Re-Establish Appropriate Native Plant Communities**: In areas that would require a heavy amount of clearing, plant communities native to the central Piedmont, including oak/hickory and pine/oak woodland, loblolly pine/oak savanna, shrub land, and grassland, would be utilized to re-vegetate disturbed areas. These plant communities would be tailored to both the cultural requirements of the site and the programmatic requirements of training mission. Approximately 180 acres of vegetation would be restored under Build Alternative 3, including approximately 87 acres of forest. Under Build Alternative 3, approximately 10 acres of vegetation would be re-established on Parcel 21/20, and 170 acres would be re-established on Local Redevelopment Authority (LRA) Parcel 9.
4. **Connect Plant Communities Across Larger Areas**: Re-vegetation would connect plant communities of the same type across larger areas of the site to the maximum extent feasible to create and preserve corridors for the movement of wildlife and “deeper” habitats required by interior dependent species.

6.4.2 Wildlife

Compliance with the CWA, the Virginia Stormwater Management Program and the Virginia Erosion and Sedimentation Program would minimize the amount of sediment that may enter surrounding wetlands and surface waters resulting in impacts to fish and other wildlife that live in or utilize the surface waters.

Site lighting would be designed to meet local or federal dark sky guidelines, which would minimize lighting impacts to wildlife from operations. Conservation measures that would be implemented under the Endangered Species Act for the northern long-eared bat (NLEB), including conducting most site clearing from October to April to minimize construction impacts, would also benefit other wildlife, including migratory birds, during the breeding season.

6.4.3 Threatened and Endangered Species and Bald Eagle

Conservation measures that would be implemented under the Endangered Species Act to avoid adverse effects to NLEB during the NLEB maternity season would include designing site lighting to meet local or federal dark sky guidelines, which would minimize lighting impacts from nighttime light pollution and glare during operations. To minimize construction impacts, most of the vegetation clearing would be conducted from October to April. Because of unavoidable constraints on the proposed project schedule, Phase 1 construction would have to occur during summer of 2015, but represents only 9 acres of forest to be cleared out of the total 365 acres. Any additional conservation measures stipulated by the U.S. Fish and Wildlife Service would be included in the Final EIS.

Under Build Alternative 3, construction would not occur within the 660 foot buffer of the bald eagle nest; therefore, mitigation is not needed to comply with the Bald and Golden Eagle Protection Act.

6.5 Cultural Resources

Operations using simulators (flash bangs) would not occur within 656 feet of the Officers Club adjacent to the southern boundary of LRA Parcel 9.

Compliance with Section 106 of the National Historic Preservation Act (NHPA) would eliminate or minimize impacts to cultural resources. Should future project design result in potential impacts to Sites 44NT0210, 44NT0212, 44NT0219, 44NT0220, 44NT0221, or 44NT0222, Phase II testing and evaluation would be conducted. Consultation with the Virginia State Historic Preservation Officer is ongoing, and if the need for mitigation measures is identified they would be included in the Final EIS.

6.6 Air Quality

Impacts to air quality (PM_{10} emissions) from fugitive dust would be minimized by implementing BMPs such as periodic wetting of soils and various other dust control measures during FASTC construction and operation.

6.7 Noise

Construction activity would be limited to daytime weekday hours to the extent feasible to minimize impacts to surrounding areas and along the routes of construction vehicle travel.

The use of vegetative buffers would be incorporated into the FASTC design to the extent feasible to minimize noise impacts to the surrounding areas. Simulator operations would not occur within 656 feet of the Officers Club.

To be in regulatory compliance with federal Occupational Safety and Health Administration (OSHA) 1910.95, FASTC demolition (explosives and simulators) training and firing ranges (small caliber firearms) would provide hearing protection to personnel working and training at these sites during live operations.

Other measures to minimize impacts that would be considered to the extent feasible would be implementation of a process to notify the public in advance of peak noise events.

6.8 Land Use and Zoning

Impacts to land use and zoning would be minimized via compliance with current zoning regulation and the Nottoway County Comprehensive Plan. Additional impact minimization would occur via compliance with Department of Defense criteria regarding runway clear zones and accident potential zones. Dust and glare would be limited in these zones to avoid impacts to air navigation. Form 7460 would be submitted to the Federal Aviation Administration (FAA) for a formal determination that the proposed project would not constitute a hazard to air navigation.

No significant impacts would occur to land use or zoning, therefore no mitigation would be required.

6.9 Socioeconomic Resources and Environmental Justice

Impacts to displaced residents and businesses would be minimized via compliance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act,* which would provide assistance to families and businesses displaced by the FASTC facility.

Protections for the safety of children include security measures such as drop bar gates and signage to discourage accidental entry to training areas and though continued supervisory control of children attending the daycare center. Other measures that would be considered to minimize noise impacts on children attending the daycare center at Fort Pickett would be implementation of a process to notify the daycare center in advance of peak noise events.

To assist the communities of the study area in planning for growth, GSA and the U.S. Department of State (DOS) would take an interest in seeing that the potential economic benefits of the FASTC development would be leveraged to help support sustainable economic development in the community. A joint effort of GSA's Urban Development/Good Neighbor program and USEPA's Community Assistance and research expertise will coordinate with and assist local officials and planners in preparing for FASTC-related economic effects. Where feasible, GSA would also seek to identify potential resources that may assist local planners in this effort.

6.10 Traffic and Transportation

Abandonment of the Virginia Department of Transportation (VDOT) maintained roadways within LRA Parcel 9 in coordination with VDOT and the Nottoway County Board of Supervisors would be required.

Travel Demand Management Measures

- Travel demand management includes transporting trainees by shuttle bus to and from the FASTC facility to minimize vehicular trips.
- Design the Entry Loop road to accommodate and efficiently process vehicles approaching the Core Area would be considered. As feasible, passenger cars traveling to and from the surface parking lot would be separated from buses, minivans, and pedestrians. Where queues may form, sufficient storage would be provided to avoid blocking adjacent lanes and prevent vehicles from stacking onto Dearing Avenue.
- To facilitate the transfer of students, minivans may be scheduled to arrive and park before buses in the morning, and buses would be in place before the arrival of minivans in the afternoon. Signage, pavement markings, pedestrian islands, and other design elements would be considered to accommodate safe and efficient pedestrian movement at the Core Area.

Potential Intersection Improvements

Because Build Alternative 3 would not cause any intersection movements to exceed the minimum performance standard of LOS D, there would be no adverse traffic impacts and no avoidance, minimization, or mitigation measures would be needed.

However, the analysis determined that existing turning lane storage would be less than VDOT design standards at two intersections under the existing conditions (without the Proposed Action) and three additional intersections that would result from the Proposed Action with access Options A and/or B. To address these turning lane storage criteria, it is recommended that VDOT study these turning lane deficiencies and potential improvements to bring the intersections up to their design standards. Following are the improvements that may be warranted:

- Cox Road/Military Road – (with or without the Proposed Action) new exclusive westbound left turn lane, including storage and taper
- Darvills Road/Military Road – (with or without the Proposed Action) extend the existing eastbound right turn lane storage and taper
- U.S. Route 460/Cox Road (Option A or B) – extend the existing westbound left turn lane storage and taper
- Darvills Road/Military Road (Option B only) – new exclusive westbound right turn lane, including storage and taper
- Darvills Road/Dearing Avenue(Option B only) – extend existing eastbound right turn lane storage and taper

Regarding the implementation of improvements, should VDOT determine they are warranted, GSA and DOS have no authority to fund or implement roadway improvements outside property boundaries. Intersection improvements identified would be under the jurisdiction of VDOT. Funding and implementation of improvements would have to occur through the appropriate Commonwealth of Virginia transportation organizations. Accordingly, state and/or local governments would determine whether improvements identified would be implemented.

6.11 Recreation

There would be adverse impacts to hunting areas on Parcel 21/20 and LRA Parcel 9. DOS would minimize this impact to the extent feasible by allowing hunting access to Parcel 21/20 and LRA Parcel 9 to the extent practicable between training operations.

6.12 Utilities and Infrastructure

Impacts associated with installation of water, wastewater, electrical, or telecommunication lines would be minimized by construction within existing or new roadways or utility corridors to avoid additional areas of disturbance.

Water demand would be reduced through the use of ultra-low flow fixtures, rain collection, use of grey water, native plant species for non-irrigated landscaping, and avoidance of permanent irrigation.

Impacts to area landfills would be minimized via compliance with the Pollution Prevention Act and Executive Order (EO) 13101 (Greening the Government through Waste Prevention, Recycling, and Federal Acquisition).

6.13 Public Health and Safety

Impacts to public health and safety would be minimized via the use of safety features such as drop bar gates and signage, compliance with GSA Facilities Standards for Public Buildings, Federal regulations regarding the management of hazardous materials and waste (Comprehensive, Environmental Response, Compensation and Liability Act [CERCLA], Resource Conservation and Recovery Act [RCRA], Toxic Substances Control Act [TSCA], Oil Pollution Act, Pollution Prevention Act), and U.S. visa immunization and health requirements. All training areas including driving tracks would be designed to contain all training activities within the site such as explosives, small arms munitions, and cars on the driving tracks so that there would be no impact to public safety.

6.14 Aesthetic and Visual Resources

Visual impacts would be minimized via the use of vegetative buffers around newly developed areas and parcel borders.

6.15 Hazardous Substances

Prior to demolition of structures, small volumes of containerized pesticides, herbicides, paints, solvents, and petroleum products would be removed and properly disposed.

Impacts to hazardous substances would be minimized via compliance with Federal regulations regarding the management of hazardous materials and wastes (CERCLA, RCRA, TSCA, Oil Pollution Act, Pollution Prevention Act).

GSA would confirm U.S. Army responsibility for future remediation of methyl tertiary butyl ether (MTBE) in the groundwater on LRA Parcel 9 if remedial action is required.

According to a project specific Phase III Risk Management and Remediation Plan (Cardno TEC 2013b) prepared in 2013, all known release areas or areas requiring further investigation that would present an

environmental and/or human health risk would be addressed according to the real estate agreements between GSA and the property owners prior to site development.

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 the use of treatments and/or chemical amendments, such as lime, to increase the pH of the soil to degrade any harmful residual explosive compounds.

6.16 Other Management Actions

The following general management measures would be implemented:

Establishing a FASTC community liaison/outreach program would be considered to ensure open communication with the community and to address any public concerns related to FASTC.

Mitigation measures that would be incorporated into the Record of Decision would be monitored to ensure mitigation is providing the benefit intended in the mitigation commitment.

After the Master Plan is finalized and should the project move forward to design, GSA would monitor any changes in the proposed project for any potential that significant environmental impacts not addressed in the Supplemental Final EIS might occur. Should additional potential significant impacts be identified, additional environmental analysis, in accordance with the National Environmental Policy Act (NEPA), would be undertaken prior to the changes being implemented.

Table 6.16-1. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Supplemental EIS	Regulatory Mitigation	Other Mitigation under Consideration
Climate	• LEED Silver design standards for A01 and T01 improve building energy efficiency reducing greenhouse gas emissions	• None	• None
Topography, Geology and Soils	• Minimize grading and filling to extent feasible • Water application and other dust control measures during construction and operations • Vegetation and BMPs to minimize erosion	• CWA Sections 319 and 401 • VA Erosion and Sediment Control Program • VA Stormwater Management Program • VA Permit for Discharges of Stormwater from Construction Activities • Stormwater Pollution Prevention Plan (SWPPP)	• None
Water Resources	• Perpendicular stream crossings • Suitably sized culverts to maintain efficient peak flow • LID measures and stormwater BMPs • 100-foot wetland/stream buffer avoidance wherever feasible	• Energy Independence and Security Act • Maintenance of current stormwater runoff rates and volumes • CWA Sections 319, 401, and 404 • VA Erosion and Sediment Control Program • VA Stormwater Management Program • VA Permit for Discharges of Stormwater from Construction Activities • SWPPP • Wetland and stream impacts mitigation to include purchase of mitigation credits from mitigation bank and/or in lieu fee payment	• None
Biological Resources	• Avoid disturbance whenever possible • Treat disturbed edges • Re-establish approximately 180 acres of native plant communities including 87 acres of forest • Connect plant communities across larger areas • Compliance with federal dark sky lighting guidelines and conducting most vegetation clearing from October to April to avoid adverse effects to NLEB under the Endangered Species Act.	• CWA Sections 319, 401, and 404 • VA Erosion and Sediment Control Program • VA Stormwater Management Program • Maintain 660 foot forest buffer around bald eagle nest	• Avoid tree clearing during migratory bird nesting season to the extent feasible
Cultural Resources	• Avoidance of potential National Register of Historic Places-eligible archaeological sites • Simulator operations would not occur within 656 feet of the Officers Club	• NHPA Section 106 compliance	• Additional Phase II if future project design results in potential impacts to Sites 44NT0210, 44NT0212, 44NT0219, 44NT0220, 44NT0221 or 44NT222
Air Quality	• Various dust control measures	• None; project area is in attainment	• None

Table 6.16-1. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Supplemental EIS	Regulatory Mitigation	Other Mitigation under Consideration
Noise	• Maintenance of vegetative buffers • Limit construction activity to daytime weekday hours to the extent feasible • Simulator operations would not occur within 656 feet of the Officers Club	• OSHA approved hearing protection	• Public notice prior to peak noise events
Land Use and Zoning	• Locate facilities to be compatible with adjacent land use • Limit dust and glare in airfield zones to avoid impacts to air navigation	• U.S. Army clear zone and accident potential zone compliance • Submit Form 7460 to FAA for formal determination of compatibility with air navigation	• None
Socioeconomics	• Security gates/Signage	• Uniform Relocation Assistance and Real Property Acquisition Policies Act	• Joint effort of GSA's Urban Development/Good Neighbor program and USEPA's Community Assistance and research expertise will coordinate with and assist local officials and planners in preparing for FASTC-related economic effects. • Notification of daycare center prior to peak noise events
Traffic and Transportation	• Use of shuttle buses to reduce vehicle trips	• Coordination with VDOT and Nottoway County in abandonment of existing roads on LRA Parcel 9 • An access permit from VDOT would be required for the establishment of the access gate on Dearing Avenue under Option B.	• Travel demand management to improve circulation at the Core Area • Turning lane storage improvements at 5 intersections by the jurisdictional authority if funding is available
Recreation	• Hunting open when no training occurring	• None	• None
Utilities and Infrastructure	• Construction in existing or proposed roadways and utility corridors • Water demand reduction techniques	• Pollution Prevention Act • Source reduction measures • Executive Order 13101 Greening the Government through Waste Prevention, Recycling, and Federal Acquisition • Recycling Policies	• None

Table 6.16-1. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Supplemental EIS	Regulatory Mitigation	Other Mitigation under Consideration
Public Health and Safety	• Gates and signage • GSA Facilities Standards for Public Buildings • U.S. Visa immunization and health requirements • Containment on site of all training – explosives, small arms munitions, and cars on driving tracks	• Oil Pollution Act • Spill Prevention, Control, and Countermeasures Plan • Hazardous materials/waste management regulations (CERCLA, RCRA, TSCA, Oil Pollution Act, Pollution Prevention Act) • Compliance with Hazardous Materials Management Regulations • Compliance with Hazardous Waste Management Regulations • Adherence to Land Use Controls	• None
Aesthetic and Visual Resources	• Vegetative buffers	• None	• None
Hazardous Substances	• Disposal of existing or introduced hazardous substances and waste during demolition, construction, and operations in accordance with regulations • Address all known release areas or areas of potential environmental and/or human health risk requiring further investigation according to 2013 Phase III Risk Management and Remediation Plan and real estate agreements.	• Oil Pollution Act • Spill Prevention, Control, and Countermeasures Plan • Hazardous materials/waste management regulations (CERCLA, RCRA, TSCA, Oil Pollution Act, Pollution Prevention Act) • Compliance with Hazardous Materials Management Regulations • Compliance with Hazardous Waste Management Regulations • Adherence to Land Use Controls	• Manufactured BMPs (filtration systems) • Soil amendments for leachate treatment
General Management	• Monitor mitigation measures to ensure benefits are realized • Monitor potential environmental impacts of final project design; perform additional impact analysis and NEPA documentation for any potentially significant impacts not included in Supplemental EIS		• Establish community liaison/outreach program

CHAPTER 7 REFERENCES

American Farmland Trust. 2006. Farmland Information Center Fact Sheet. August 2006.

ARNG-MTC Fort Pickett. 2010. Bow Hunting Area Tree Stand map. December 9, 2010.

Blackstone. 1992. Town of Blackstone Official Zoning Map. July 29, 1992.

Blackstone. 2012. Excel spreadsheet sent by the town of Blackstone providing water and sewer data from May 2011 to May 2012. The spreadsheet was sent via email on June 12, 2012.

Blackstone. 2013. Water Consumption and Sewer Usage. Personal communication with P. Vannoorbeeck, Town Manager, Blackstone, VA via phone to T. Coniff, Environmental Analyst/Planner, Cardno, Middletown, CT. January 22.

Blackstone. 2014. Commercial/Industrial Capacity for Development of FASTC. Personal communication between P. Vannoorbeeck, Town Manager, Blackstone, VA via phone to K. Hall, Senior Associate, Cardno, Middletown, CT. October 28.

Blackstone Police. 2014. Community Services Information. Personal communication with S. Jackson, Secretary to the Chief, Blackstone Police, via phone to C. Ailes, Environmental Analyst/Planner, Cardno, Charlottesville, VA. September 17.

Blackstone Volunteer Fire Department. 2012a. Personal communication with Philip Arms via telephone on May 3, 2012.

Cardno TEC. 2013a. Report of Follow up Environment Assessment Work for LRA Parcels 9 and 10, Grid Parcel, and Parcel 21/20 for the Proposed Foreign Affairs Security Training Center. January.

Cardno TEC. 2013b. Phase III ESA Risk Management and Remediation Plan for the Proposed Foreign Affairs Security Training Center, Nottoway County, Virginia. March.

Center of Conservation Biology (CCB). 2014. Eagle Nest Locator Mapping Portal. http://www.ccbbirds.org/what-we-do/research/species-of-concern/virginia-eagles/nest-locator/. Accessed August 15, 2014.

Chesterfield County Public Schools. 2012. http://mychesterfieldschools.com/school_schedules.html. Accessed August 29, 2012.

Chesterfield Planning Commission. 2012. Moving Forward. The Comprehensive Plan for Chesterfield County. September 18, 2012.

Commonwealth of Virginia. 2000. Report of the Department of Criminal Justice Services, Department of State Police and Department of Military Affairs: Development of a Statewide Driver Training Facility, to the Governor and the General Assembly of Virginia. Senate Document No. 13.

Connors, Stephen, Katherine Martin, Michael Adams, Edward Kern, and Baafour Asiamah-Adjei. 2004. Emissions Reductions from Solar Photovoltaic (PV) Systems. LFEE Report No.: 2004-003 RP. August 2004.

Conservation Management Institute. 2007. Avian Atlas of ARNG-MTC Fort Pickett, Virginia. Blacksburg, Virginia 24061.

Courier-Record. 2012a. "Town Proposes Sewer Hike." Article from Publication No. 135720 Volume 123 #1. Wednesday, January 4, 2012.

Courier-Record. 2012b. "Girl Scout's project will benefit Pickett." August 1, 2012.

Courier-Record. 2012c. Notice of Invitation for Bids PN:2W0000812P 1300 Area Navy EOD Compound.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm. Accessed May 8, 2012.

Department of Defense (DoD). 2008. Unified Facilities Criteria (UFC): Airfield and Heliport Planning and Design. UFC 3-260-01. November 17.

Department of the Interior. 2013. Fish and Wildlife Service. General Provisions; Revised List of Migratory Birds. Federal Register Vol. 78, No. 212. Friday November 1.

DOS (U.S. Department of State). 2009. Procedures for Medical Examination and Clearance: 16 FAM 210 Medical Clearance (CT:MED-8; 10-19-2009; Office of Origin: MED). http://www.state.gov/documents/organization/89692.pdf. Accessed May 3, 2012.

DOS. 2014. Data provided by request in support of economic and fiscal technical studies.

Drought Monitor. 2010. http://drought.unl.edu/dm/classify.htm Updated January 2, 2008, accessed December 3, 2010.

Environment Canada. 2004. How Much Habitat is Enough? A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern. 2d ed. Downsview, Ontario, Canada.

Federal Regulations. 2012. Electronic Code of Federal Regulations: Title 50: Wildlife and Fisheries, Part 22 – Eagle Permits. http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=86a68c8e017fe95aa7b13f96fb10d14a&rgn=div5&view=text&node=50:8.0.1.1.5&idno=50. Updated May 2, 2012, accessed May 4, 2012.

FEMA (Federal Emergency Management Agency). 2010. FEMA NFHL Webmap Service. http://hazards.fema.gov/wmsconnector/wmsconnector/Servlet/. Accessed September 9, 2012.

FEMA. 2012. Earth Quake Hazard Maps. http://www.fema.gov/hazard/earthquake/hazards.shtm. Accessed May 24, 2012.

GSA (U.S. General Services Administration). 1999. NEPA Desk Guide. Environmental Justice Data Requirements, Section 9.2.2.

GSA. 2012. Relocation Planning, Impacts and Cost Estimate Under the Foreign Affairs Security Training Center Program, Blackstone VA. Prepared by Concourse Federal Group, LLC, April 19, 2012.

Hall, Linnea S., Paul R. Krausman, and Michael L. Morrison. 1997. The habitat concept and a plea for standard terminology. Wildlife Society Bulletin 25 (1):173–182.

Holma, Marc. 2010. Letter to Lieutenant Colonel James A. Zollar, Virginia Army National Guard. On file at Virginia Department of Historic Resources, Richmond. October 10, 2010.

International Dark-Sky Association and the Illuminating Engineering Society of North America. Model Lighting Ordinance. June 15, 2011

Kalderis, Dimitrios, Albert L. Juhasz, Raj Boopathy, and Steve Comfort. 2011. Soils contaminated with explosives: Environmental fate and evaluation of state-of-the-art remediation processes (IUPAC Technical Report). Pure Appl. Chem. 83 (7):1407–1484.

Kieran Timberlake. 2014. Master Plan Update, Draft Final. Foreign Affairs Security Training Center. Prepared for General Services Administration and U.S. Department of State, Bureau of Diplomatic Security, Office of Physical Security Programs, Arlington, VA. September 23, 2014.

Kramar, David E., Verl Emerick, and Matt Fields 2013. Bald Eagle Survey and Monitoring of the Nottoway Macro Basin and Fort Pickett: Results—2013.

Larkin, R. P. 1994. Effects of military noise on wildlife: a literature review. Final Report to U.S. Army Construction Engineering Research Laboratory, November 1994.

LEED. 2009. Leadership in Energy and Environmental Design Reference for Green Building Design and Construction. 2009 Edition. Pages 338–345.

Mid-Atlantic Broadband Cooperative. 2011. Personal communication with Gary Ramsey, meeting at Fort Pickett with Nottoway County, General Services Administration, Fort Pickett, and the U.S. Department of State. September 20-21, 2011.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. http://www.natureserve.org/explorer. Accessed May 7, 2012.

Nottoway Ambulance. 2012. Personal communication with Harold Bliss via telephone on May 9, 2012 at 9:00 am.

Nottoway County. 2006. Nottoway County Comprehensive Plan. Prepared by the Nottoway County Planning Commission and Adopted by Nottoway County Board of Supervisors. October 19, 2006.

Nottoway County. 2009. Nottoway County Water Supply Plan.

Nottoway County. 2010. Personal communication from John Prosise via e-mail on September 21, 2010.

Nottoway County. 2012a. County Administration. http://www.nottoway.org/administration.shtml. Accessed August 8, 2012.

Nottoway County. 2012b. Switchgrass Biofuel Plant Project Information. Personal communication between R. Roark, Nottoway County Administrator, Nottoway, VA via phone to T. Coniff, Environmental Analyst/Planner, Cardno, Middletown, CT. September 5.

Nottoway County Board of Supervisors. 2012. Nottoway County, Virginia Proposed Budget For The Year Ending June 30, 2013. Published in the Courier-Record, Wednesday, April 11, 2012.

Nottoway County Sheriff's Office. 2012. http://www.nottoway.org/sheriff.shtml. Accessed August 17, 2012.

Pennsylvania Army National Guard. 2006. Final Environmental Impact Statement for the Transformation of the Pennsylvania Army National Guard 56th Brigade into a Stryker Brigade Combat Team. January.

Pennsylvania Game Commission. 2009a. Upland Sandpiper (Bartramia longicauda). November 13, 2009.

Pennsylvania Game Commission. 2009b. Loggerhead Shrike (Lanius ludovicianus). October 16, 2009.

Repetto, Robert, PhD. 2012. Economic and Environmental Impacts of Climate Change in Virginia. Demos. April 19, 2012.

Rich, A. C., D. S. Dobkin, and L. J. Niles. 1994. Defining Forest Fragmentation by Corridor Width: The Influence of Narrow Forest-Dividing Corridors on Forest-Nesting Birds in Southern New Jersey. Conservation Biology 8:1109–1121.

Rose, A.K. 2013. Virginia's Forests, 2011. Resource Bulletin SRS–197. U.S. Department of Agriculture Forest Service, Southern Research Station, Asheville, NC.

Schnabel Engineering. 2010. Phase 1 Environmental Site Assessment Fort Pickett Site Nottoway County, Virginia.

Schnabel Engineering. 2012a. Preliminary Geotechnical Engineering Report. FASTC, Fort Pickett, Nottoway County, Virginia. Schnabel Reference 09230023.02. May 5, 2012.

Schnabel Engineering. 2012b. Phase II Fort Pickett Site LRA and 21/20 Parcels FASTC, Fort Pickett, Nottoway County, Virginia. Schnabel Reference 09230023.02. May, 25 2012.

Schnabel Engineering. 2012c. Phase I Environmental Site Assessment Addendum, Fort Pickett Site Parcel 10 and Grid Parcel, Nottoway County, Virginia. Schnabel Reference 09230023.02. July 24, 2012.

Smith, Stephanie. 2007. The Interagency Security Committee and Security Standards for Federal Buildings. CRS Report for Congress. November 23, 2007.

Southside Electric Cooperative. 2011. Personal communication with George Felts, meeting at Fort Pickett with Nottoway County, General Services Administration, Fort Pickett, and the Department of State. September 20-21, 2011.

Southside Electric Cooperative. 2012. Electric Power Source Information. Personal communication between G. Felts, Southside Electric Cooperative, Crewe, VA via phone to T. Coniff, Environmental Analyst/Planner, Cardno, Middletown, CT. October 12.

Southside Electric Cooperative. 2014. Personal communication between G. Felts, Southside Electric Cooperative, Crewe, VA via phone to T. Coniff, Environmental Analyst/Planner, Cardno, Middletown, CT. September 23.

St. Germain, M.J. 2006. Bat Species Assemblage at Fort Pickett, Blackstone, Virginia. Conservation Management Institute – Military Lands Division, College of Natural Resources, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

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

Tetra Tech. 2005. Decision Document EBS-13 Parcel Operable Unit 6 Fort Pickett Army Garrison Blackstone, VA. May 18, 2005.

Tetra Tech. 2010. Five-Year Review Report for EBS-13 Salvage Yard, Fort Pickett Virginia. July 2010.

The Tornado Project. 2014. Virginia Tornadoes 1950–2012. http://www.tornadoproject.com/alltorns/vatorn.htm#N. Accessed November 3, 2014.

UCONN. 2013. University of Connecticut, College of Agriculture and Natural Resources, Center for Land Use and Research. What we are measuring, Core Forest Explained. http://clear.uconn.edu/projects/landscape/forestfrag/measuring/core_explained.htm. Accessed February 14, 2013.

U.S. Army. 1999. Underground Gasoline Pipeline Abandonment Summary of Activities. Prepared by Omega Environmental Services. October 13, 1999.

U.S. Army. 2007. Environmental Protection and Enhancement, Army Regulation 200-1, Headquarters Department of the Army, Washington, D.C. December 2007.

U.S. Army. 2009. Department of the Army. Army Compatible Use Buffer (ACUB), Success Story, Fort Pickett ACUB. April 2009.

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM). 2005. Virginia Army National Guard Statewide Operational Noise Management Plan. July 2005.

USACHPPM. 2006. Fact Sheet. How does the Department of Defense assess noise and its impacts? Operational Noise Program. Aberdeen Proving Ground, MD.

U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual, Wetlands Research Program Technical Report Y-87-1 (online edition).

USACE. 1997. Species Profile: Loggerhead Shrike (*Lanius ludovicianus*) on Military Installations in the Southeastern United States. Technical Report SERDP-97-8. September 1997.

U. S. Army Environmental Command. 2011. Military Response Program. http://aec.army.mil/usaec/cleanup/mmrp00.html. Accessed 5/2/2012

U.S. Army Public Health Command (USAPHC). 2011. Operational Noise Consultation No. 52-EN-0FNT-12 Operational Noise Contours Fort Pickett, Virginia. November 28, 2011.

U.S. Bureau of Labor Statistics (BLS). 2011a. Local Area Unemployment Statistics.

BLS. 2011b. Quarterly Census of Employment and Wages.

BLS. 2011c. Consumer Price Index (CPI-U), 2001-2010.

U.S. Census Bureau (U.S. Census). 1990. 1990 Decennial Census.

U.S. Census. 2000. 2000 Decennial Census.

U.S. Census. 2005. U.S. Census Bureau, Population Division, Interim State Population Projections. http://www.census.gov/population/www/projections/files/SummaryTabA1.pdf.

U.S. Census. 2010a. 2010 Decennial Census.

U.S. Census. 2010b. 2010 American Community Survey, 5-year Estimates.

U.S. Census. 2012. Statistical Brief. Poverty Areas. http://www.census.gov/population/socdemo/statbriefs/povarea.html.

USDA (U.S. Department of Agriculture). 2010. 2010 Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed October 8, 2010.

USDA. 2012. Forest Inventory Data Online. Virginia: Nottoway County:2008-2011. http://apps.fs.fed.us/fido/. Accessed: August 27, 2012.

U.S. Department of Labor. 2012. Occupational Safety and Health Administration, Occupational Noise Exposure, Standard 1910.95.

USDOT (U.S. Department of Transportation). 2007. Final Environmental Impacts Statement and Environmental Impact Evaluation, Route 82/85/11 Corridor, Salem, Montville, East Lyme and Waterford. July 2007.

USEPA. 2012a. What is a Toxic Substance? http://www.epa.gov/kidshometour/toxic.htm. Last updated May 9, 2012, accessed June 2012.

USEPA. 2012b. Designated Uses. http://water.epa.gov/scitech/swguidance/standards/uses.cfm. Last updated March 6, 2012, accessed January 22, 2012.

USEPA. 2014. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2012. http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html. 15 April. Accessed on November 24, 2014.

U.S. Fish and Wildlife Service (USFWS). 1993a. Recovery Plan for Michaux's Sumac (Rhus michauxii). Prepared by Asheville Field Office, USFWS, Atlanta, Georgia. April 30, 1993.

USFWS. 1993b. Recovery Plan for Dwarf Wedge Mussel (Alasmidonta heterodon). Prepared by Annapolis Field Office, USFWS, Annapolis, Maryland. February 8, 1993.

USFWS. 2003a. Fact Sheet: Roanoke Logperch (Percina rex). August 2003.

USFWS. 2003b. Recovery Plan for the Red-cockaded Woodpecker (Picoides borealis). Second Revision. January 27, 2003.

USFWS. 2007. An Update to the Roanoke Logperch Recovery Plan. Prepared by A. Rosenberger, University of Alaska Fairbanks, School of Fisheries and Ocean Sciences for USFWS. http://www.sfos.uaf.edu/directory/faculty/rosenberger/LRP_RecoveryPlanUpdate.pdf. Accessed May 7, 2012.

USFWS. 2013. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List the Eastern Small-Footed Bat and the Northern Long-Eared Bat as Endangered or Threatened Species; Listing the Northern Long-Eared Bat as an Endangered Species; Proposed Rule. Federal Register 78:61046-61080.

U.S. Geological Survey (USGS). 1998. Effects of Management Practices on Grassland Birds: Loggerhead Shrike.

USGS. 2012. Hydrologic Unit Maps. http://water.usgs.gov/GIS/huc.html. Accessed August 28, 2012.

Virginia Army National Guard (VaARNG). 2007. Integrated Natural Resources Management Plan and Environmental Assessment Fort Pickett Maneuver Training Center Blackstone, Virginia.

VaARNG. 2010. "Ceremony marks the opening of new education complex at Fort Pickett" Written by Cotton Puryear. http://vko.va.ngb.army.mil/virginiaguard/news/dec10/RTIribboncutting.html. Accessed August 20, 2012.

VaARNG. 2011. Environmental Assessment Future Mission Requirements 2011 Maneuver Training Center, Fort Pickett. June.

VaARNG. 2013. Personal communication, Dan Falwell, Fort Pickett Department of Public Works, VaARNG, regarding transite on water main pipeline, February 20, 2013.

VaARNG 2014a. Personal communication, Brandon Martin, Fort Pickett Directorate of Public Works, VaARNG, Natural Resources Manager, regarding beaver management, November 2014.

VaARNG 2014b. Personal communication, Dan Falwell, Fort Pickett Department of Public Works, VaARNG, regarding the former gasoline pipeline, September 2014.

Virginia Cooperative Extension. 2009. Using Tractor Test Data for Selecting Farm Tractors. Publication 442-027. Communication and Marketing, College of Agriculture and Life Sciences. Virginia Polytechnic Institute and State University.

Virginia Department of Conservation and Recreation (DCR). The Natural Communities of Virginia, Classification of Ecological Community Groups: Loblolly Pine Savannas. http://www.dcr.virginia.gov/natural_heritage/ncTVIc.shtml. Last modified February 2, 2012, accessed September 5, 2012.

Virginia Department of Military Affairs 2012. 2012 Nottoway River Fish and Aquatic Habitat Survey.

DCR. 2012b. The Natural Communities of Virginia Classification of Ecological Community Groups. Oak - Hickory Woodlands and Savannas. http://www.dcr.virginia.gov/natural_heritage/ncTIIIo.shtml. Accessed September 5, 2012.

DCR. 2012c. The Natural Communities of Virginia, Classification of Ecological Community Groups: Piedmont Prairies. http://www.dcr.virginia.gov/natural_heritage/ncTIVh.shtm. Last modified February 2, 2012, accessed September 5, 2012.

Virginia Department of Environmental Quality (VDEQ). 2010. Virginia 305(b)/303(d) Water Quality Integrated Report to Congress and the EPA Administrator for the Period January 1, 2003 to December 31, 2008.

VDEQ. 2011. Water Quality Assessment Guidance Manual for 2012 305(b)/303(d) Integrated Water Quality Report. June 2011.

VDEQ. 2013a. VDEQ Risk Assessment for RCRA Corrective Action. http://www.deq.state.va.us/Programs/LandProtectionRevitalization/RemediationProgram/RiskAssessment.aspx. Accessed January 21, 2013.

VDEQ. 2013b. Personal communication with Elizabeth Lohman, Environmental Program Manager, regarding VDEQ position on lead in soil samples at water tower on LRA Parcel 9. March 6, 2013.

Virginia Department of Historic Resources (VDHR). 2011. Guidelines for Conducting Historic Resources Survey in Virginia. Richmond: Virginia Department of Historic Resources. October. Available electronically at: http://www.dhr.virginia.gov/pdf_files/Survey%20Manual-evOct.2011Final.pdf.

Virginia Department of Housing and Community Development (VDHCD). 2009a. Local Revenue of Virginia's Counties and Cities, FY 2008. http://www.dhcd.virginia.gov/CommissiononLocalGovernment/PDFs/locrev08.pdf.

VDHCD. 2009b. Operating Expenditures of Virginia's Counties and Cities, FY 2008. http://www.dhcd.virginia.gov/CommissiononLocalGovernment/PDFs/oe2008.pdf.

VDHCD. 2009c. Federal and State Categorical Aid to Virginia's Counties and Cities, FY 2008. http://www.dhcd.virginia.gov/CommissiononLocalGovernment/PDFs/cataid08.pdf.

Virginia Department of Military Affairs (VDMA). 2004. Architectural Survey Conducted at Fort Pickett, Blackstone, Virginia, Virginia Army National Guard. Prepared for Virginia Department of Military Affairs, Blackstone, Virginia, by Parsons, Fairfax, Virginia. April 2004.

VDMA. 2008. Final Integrated Cultural Resources Management Plan Revision for Facilities of the Virginia Army National Guard, Fiscal Years 2008–2012. Prepared for Virginia Department of Military Affairs by Versar Inc., Springfield, Virginia. March 2008.

VDMA. 2010. Architectural Survey and Historic District Evaluation of MTC-Fort Pickett, Virginia Army National Guard. Prepared for Virginia Department of Military Affairs, Blackstone, Virginia, by Versar Inc., Springfield, Virginia. May 2010.

VDMA. 2011. Environmental Assessment Future Mission Requirements 2011 Maneuver Training Center, Fort Pickett. Prepared by Gilmore Environmental Consulting. June 2011.

Virginia Employment Commission. 2011. Community Profiles. http://www.vawc.virginia.gov/gsipub/index.asp?docid=342. Last updated November 22, 2011.

Virginia Employment Commission. 2012. Economic Information Services Division, Labor Market Information. Community Profiles. Last updated August 30, 2012.

Virginia General Assembly (VGA). 2012. Legislative Information System: Virginia Administrative Code – Title 9. http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC5. Accessed May 29, 2012.

Virginia National Guard Public Affairs Office. 2014. Virginia National Guard breaks ground for new solar array. http://www.dvidshub.net/news/145819/virginia-guard-breaks-ground-new-solar-array#.VEkntqPD_IU#ixzz3Gz8JbE3Z. Accessed October 23, 2014.

Virginia Polytechnic Institute and State University (Virginia Tech). 2012. Land Development Design Initiative. New State Police Driver Training Facility. http://www.lddi.cee.vt.edu/projects/profiles/public/new_state_police_driver_traning_center.html[8. Accessed August 13, 2012.

Virginia Tech Southern Piedmont Agricultural Research and Extension Center. 2012. Personal communication with Dr. Carol Wilkinson, regarding the activities taking place at the Extension Center. August.

Virginia State Police (VSP). 2009. Environmental Impact Review: Proposed Driver Training Facility Blackstone, Virginia. Project Code 156-17541. Prepared by Dewberry and Davis. August 7, 2009.

VSP. 2010. Virginia State Police Accepts Nottoway County Offer to Build State-of-the-Art Law Enforcement Firing Range. News Release No. 52. September 10, 2010.

VSP. 2012. Environmental Impact Review: Virginia State Police Training Facility – Target Range, Blackstone , Virginia. Project Code 15619805000. Prepared by Dewberry and Davis. August 21, 2012.

Weston. 2009. Final Long-Term Monitoring Report. BCT-22 Property. Fort Pickett, Virginia. May 2009.

Weston, Roy F. 1997. Fort Pickett Underground Gasoline Pipeline Report.

Wildlife Preservation Canada. 2012. http://wildlifepreservation.ca/species-in-need/canadian-species/species-9/.

Wolf. 2010. Department of Defense Legacy Resource Management Program. Project Number 09-450. Propagation of Species At Risk Atlantic Pigtoe on Military Installations. April 30, 2010.

Woodward-Clyde. 1997. U.S. Army Base Realignment and Closure 95 Program Environmental Baseline Survey Report Fort Picket, Virginia. February 25, 1997.

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