



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

October 2012



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

**Draft Environmental Impact Statement for
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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 Draft Environmental Impact Statement (EIS) to evaluate potential environmental impacts that may result from the development and operation of the proposed DS FASTC in Nottoway County, Virginia. The proposed location is near the town of Blackstone within and adjacent to the Army National Guard Maneuver Training Center Fort Pickett. The purpose of the proposed FASTC in Nottoway County is to consolidate existing dispersed training functions into a single suitable location to improve training efficiency and enhance training operations. The proposed FASTC would provide state-of-the-art training for 8,000–10,000 students annually to meet the increased demand for well-trained security personnel. The facility would be designed, built, and secured to federal standards on four adjacent parcels at Fort Pickett and within Nottoway County's Local Redevelopment Area. FASTC would include facilities for soft skills training, such as classrooms, simulation labs, and a fitness center; hard skills training, such as driving tracks, mock urban environments, and firing and explosives ranges; as well as administrative and life support facilities including administrative offices, dormitories, a dining hall, and emergency medical response services.

The Draft EIS analyzes the direct, indirect and cumulative impacts of two build alternatives, Build Alternative 1 and Build Alternative 2, 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. The two build alternatives consist of alternative layouts on varied parcels of land for achieving the programmatic requirements of the proposed FASTC facility with site designs that would have the least environmental impact. Impacts are compared with the No Action Alternative, where FASTC would not be developed.

Comments on this Draft EIS are due by: December 10, 2012, 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.

EXECUTIVE SUMMARY

The United States (U.S.) General Services Administration (GSA) has prepared this Draft Environmental Impact Statement (EIS) to evaluate the potential environmental impacts that may result from the development and operation of 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 is near the town of Blackstone within and adjacent to the Army National Guard (ARNG) Maneuver Training Center Fort Pickett (Fort Pickett), which is operated by the Virginia Army National Guard.

GSA has prepared this EIS in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended; the Council on Environmental Quality regulations implementing NEPA (40 Code of Federal Regulations 1500-1508); and GSA's Public Building Service NEPA Desk Guide.

Cooperating agencies in preparing this Draft EIS include DOS, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and National Guard Bureau.

ES.1 PURPOSE AND NEED

The purpose of the proposed FASTC in Nottoway County is to consolidate existing dispersed training functions into a single suitable location to improve training efficiency and enhance training operations. With continued conflict throughout the world, the proposed FASTC would provide state-of-the-art training to meet the increased demand for well-trained security personnel. Existing training facilities are geographically separated and located in leased space or contracted facilities, which frequently do not meet training standards at a level required by DS. The lack of a dedicated training facility results in scheduling inefficiencies, increased costs, and decreased productivity.

To accommodate a consolidated training center, a large area of developable land in proximity to DS headquarters in Arlington, Virginia is needed to provide sufficient space for the construction and operation of the proposed FASTC and to provide appropriate safety buffers and security perimeters surrounding the facility. The proposed FASTC design must meet all DOS programmatic needs and must also be vetted through GSA's Design Excellence Process. 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.

ES.2 PROPOSED ACTION

The Proposed Action is the acquisition of land and the development of a consolidated DS FASTC in Nottoway County, Virginia. The Proposed Action would consolidate training functions currently taking place at various leased and contracted facilities at one state-of-the-art center.

The proposed FASTC would be designed, built, and secured to federal standards on up to four available adjacent parcels at Fort Pickett and within Nottoway County's LRA area. The parcels are identified as Fort Pickett Parcels 21/20 and the Grid Parcel, which comprise approximately 567 acres and 74 acres, respectively, and Nottoway County LRA Parcels 9 and 10, which are 726 and 135 acres, respectively. In

total, the four parcels comprise 1,502 acres. Circulation between the parcels would occur on the Fort Pickett roadway network and would fulfill FASTC program adjacency needs.

FASTC would be a consolidated training center for a rotating student population of 8,000–10,000 annually. FASTC would train primarily U.S. government employees. These individuals would include professional DS special agents, other DOS personnel, and a 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 staffed, managed, and maintained by a total of 850–1,070 employees. Normal operating hours would be 7:30 a.m. to 5:00 p.m., Monday through Friday, 50 weeks a year. However, FASTC would have the capability to operate for occasional weekend training sessions and limited night training sessions as required for operational needs. An average of 500-700 students would be on-site on an average training day. Training courses would range from five days to 112 days in length.

Classified and unclassified instructional components would comprise the FASTC training programs. 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. Facility development for the proposed FASTC would include facilities for soft skills training, such as classrooms, simulation labs, and a fitness center; hard skills training, such as driving tracks, mock urban environments, and firing and explosives ranges; as well as administrative and life support facilities including administrative offices, dormitories, a dining hall, and emergency medical response services.

Due to the size of the entire project, FASTC would be constructed in three phases. The proposed schedule of construction of each phase is: Phase 1 from 2014 to completion by 2017; Phase 2 from 2016 to 2018; and Phase 3 from 2018 to 2020. The number of students and staff would increase between construction phases until FASTC becomes fully operational in 2020.

ES.3 PUBLIC INVOLVEMENT

GSA and DOS have and will continue to provide opportunities for the public to provide input about the proposed project. GSA initiated the public scoping process for the FASTC project by publishing a Notice of Intent to prepare an EIS in the *Federal Register* on October 4, 2011 and by notifying federal, state, and local agencies and other parties known or expected to be concerned about the Proposed Action. GSA also published a series of advertisements announcing the scoping period and public scoping information meeting starting October 4, 2011 in six newspapers serving Blackstone and other communities in vicinity of Fort Pickett. The 30-day public scoping period began on October 4, 2011 and closed on November 3, 2011.

A public scoping meeting was held Tuesday evening, October 18, 2011, at the Blackstone Armory, Blackstone, Virginia. The meeting included informational poster displays and a video presentation about FASTC. GSA and DOS representatives were present to discuss the Proposed Action and answer questions. Informative fact sheet brochures and comment forms were provided to each attendee. The posters and fact sheets explained the three ways for the public to provide comments: at the public scoping meeting, via email to FASTC.info@gsa.gov, and mailed to GSA. The public scoping meeting was attended by 61 people, including 11 local officials and three people from the local media.

Representatives from USACE attended. GSA also held an agency scoping meeting with Commonwealth of Virginia agencies on October 11, 2011 in Richmond, Virginia.

Comments that were submitted during the public scoping period addressed multiple issues. Primary issues raised during scoping related to socioeconomics. Other scoping comments focused on noise, natural resources, land use, utilities and infrastructure, and hazardous materials. Multiple comments of support for the Proposed Action were also received.

ES.4 DEVELOPMENT OF ALTERNATIVES

ES.4.1 Site Alternatives

GSA and DOS have undertaken an extensive process in the search for a possible site for the proposed FASTC over a period of years. 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. 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. As a result of the evaluation process, GSA and DOS determined that only one site in Nottoway County, Virginia met the FASTC program requirements.

ES.4.2 Build Alternatives

A range of alternative layouts for development of the proposed FASTC on the Fort Pickett/Nottoway County parcels was considered. Each layout was analyzed in the context of functionality according to the needs of the FASTC program and 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. Since that time, the alternatives have been refined to minimize environmental impact and as a result of the GSA Design Excellence process.

The build alternatives development process consisted of the following steps:

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

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. Each layout was considered in the context of potential impacts on natural resources, the built environment, and topography. Changes were made in the proposed alternative layouts to avoid impacts.

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 Draft 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 fully evaluated in this Draft EIS. This Draft EIS also evaluates the alternative for taking no action (No Action Alternative).

ES.4.2.1 Build Alternative 1

Under Build Alternative 1, training would occur at the site in hard and soft skills training facilities and life support facilities located on Parcel 21/20 off Dearing Road and LRA Parcel 9 off Military Road. The Main Campus, with soft skills and life support facilities, would be centrally located along the western boundary of Parcel 21/20. Hard skills facilities would be located on portions of both Parcel 21/20 and LRA Parcel 9. They include a Mock Urban Environments Area on the eastern portion of LRA Parcel 9; a High Speed Driving Track Area in the central portion of LRA Parcel 9; and an Off-Road Driving Course and Unimproved Road Driving Course on the northern portion of LRA Parcel 9. A Firing Range Area and Explosives Range Area would be located in the southeast and northern portions of Parcel 21/20, respectively. Emergency medical services would be located in a tactical training building in the southeastern portion of LRA Parcel 9.

Build Alternative 1 would require the clearing of approximately 500 acres. Existing vegetation would be preserved wherever possible and cleared areas would be re-planted with native plant communities where feasible. Build Alternative 1 would require utilities infrastructure improvements. Water and wastewater requirements would tie into the town of Blackstone's existing facilities, and additional lines would be required for Parcel 21/20. New electrical transmission lines would be required for Parcel 21/20 and a new separate primary power delivery system would be developed. Existing telecommunications infrastructure on LRA Parcel 9, including fiber optic lines and a fiber optic node, would be relocated. Under Build Alternative 1, primary roadway access to the Main Campus would be from U.S. 460 to Military Road, an existing north-south circulation road at Fort Pickett, through the Fort Pickett Main Gate to the FASTC Main Campus compound access control (CAC) off Dearing Avenue, an existing north-south circulation road at Fort Pickett. Secondary access to the Main CAC off Dearing Avenue would be from U.S. 460 to U.S. 460 Business (North Main Street) to VA Route 40 to the Fort Pickett Main Gate to Military Road, or via West Entrance Road and the Fort Pickett West Gate to Military Road.

ES.4.2.2 Build Alternative 2

Build Alternative 2 includes all the FASTC program elements that are included in Build Alternative 1. Under Build Alternative 2, the facilities would be located on Parcel 21/20, LRA Parcel 9, and two additional parcels—the Grid Parcel and LRA Parcel 10. The High Speed Driving Track and Off Road/Unimproved Driving Course Areas, Firing Range Area, and Explosives Range Area would generally all be located in the same areas as Build Alternative 1. The major differences between Build Alternative 1 and Build Alternative 2 are the locations of the Main Campus, Mock Urban Environments, and three buildings of the High Speed Driving Track Area. Under Build Alternative 2, the Main Campus would be located on LRA Parcel 10; the Mock Urban Environments would be located on LRA Parcel 9 and the Grid Parcel; and the driver training building and vehicle maintenance building, including a parking garage and associated surface parking of the High Speed Driving Track Area would be located on the Grid Parcel. A warehouse building would also be located on the Grid Parcel under Build Alternative 2.

Build Alternative 2 would require the clearing of approximately 525 acres. Existing vegetation would be preserved wherever possible and cleared areas would be re-planted with native plant communities where feasible. Build Alternative 2 would also require utilities infrastructure improvements. Build Alternative 2 water and wastewater requirements would also tie into the town of Blackstone's existing facilities, and additional lines would be required for Parcel 21/20 and LRA Parcel 10. New electrical transmission lines would be required on Parcel 21/20 and LRA Parcel 10 and a new separate primary power delivery system would be developed. Existing telecommunications infrastructure on LRA Parcel 9 and Grid Parcel, including fiber optic lines and a fiber optic node, would be relocated. Under Build Alternative 2, primary daily access to the FASTC Main Campus by the majority of trainees and employees would be from U.S. 460 to Military Road. Visitors, new students, and new staff would access the FASTC Main Campus from U.S. 460 to U.S. 460 Business (North Main Street) through the FASTC CAC off West Entrance Road, west of the Fort Pickett West Gate.

ES.4.3 No Action Alternative

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. However, 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.5 PREFERRED ALTERNATIVE

Build Alternative 2 is the preferred alternative because it best meets the purpose and need of the Proposed Action. Build Alternative 2 would provide a larger area of developable land and create a site plan that achieves goals for function and performance and provides adequate room for growth. The Build Alternative 2 site plan would provide a greater opportunity to avoid wetlands, maximize the use of site topography, and enable reuse of the existing street grid and stream crossings on the Grid Parcel. Build Alternative 2 would establish an independent and distinctive identity for FASTC by providing a separate entrance to the Main Campus and a separate controlled access point outside of Fort Pickett. This independent location would also provide 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. Build Alternative 2 would facilitate access to Blackstone businesses and services and would provide better connection and adjacency among the site parcels.

ES.6 ENVIRONMENTAL CONSEQUENCES

Table ES-1 provides a summary of potential environmental effects from Build Alternative 1 and Build Alternative 2.

Build Alternatives 1 and 2 would have direct and indirect adverse impacts to wetlands, streams, and forest. With impact minimization and mitigation measures, these impacts would not be significant. Build Alternatives 1 and 2 would have no adverse effects on state or federal threatened or endangered species or result in takes, as defined under the Bald and Golden Eagle Protection Act.

Both Build Alternative 1 and 2 would have beneficial socioeconomic impacts. Neither alternative would have adverse effects on historic properties protected under the National Historic Preservation Act (NHPA). GSA is consulting with the State Historic Preservation Officer at the Virginia Department of Historic Resources (VDHR), and their concurrence with GSA's no adverse effects finding is pending.

Build Alternative 1 and 2 would have minor noise impacts in the northwest portion of Fort Pickett minor increase in the frequency of peak explosive noise events, most noticeably in the area northwest of the Fort Pickett boundary.

Build Alternatives 1 and 2 would have significant adverse traffic impacts at three roadway intersections, and would impact capacity at the Fort Pickett Main Gate during the a.m. peak period. Build Alternative 1 would increase traffic volume on Military Road at West Entrance Road within Fort Pickett, which would impede left turns during peak hours. Under Build Alternative 2, left turns would also be impeded at the FASTC access drive on Military Road at West 10th Street. Intersection improvements to mitigate these impacts have been analyzed. GSA and DOS would coordinate with the Virginia Department of Transportation, Nottoway County, the town of Blackstone, and the Virginia Army National Guard on the consideration of these improvements.

Both alternatives would result in adverse impacts on recreational hunting because access to Fort Pickett hunting areas would be reduced or eliminated in some areas.

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

Resource	No Action Alternative	Build Alternative 1	Build Alternative 2 (Preferred Alternative)
Climate	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No impact
Topography	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Minor localized changes 	<ul style="list-style-type: none"> No significant impact Minor localized changes
Geology and Soils	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Soil disturbance 501 acres 	<ul style="list-style-type: none"> No significant impact Soil disturbance 535 acres
Water Resources	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Wetland impacts 7.01 acres (5.20 direct fill filling/1.81 indirect clearing) Stream impact 1,205 linear feet Permitting and mitigation reduce impacts Net increase in impervious surface 214 acres Compliance with policies and regulations minimize impacts Net increases in stormwater runoff offset by mitigation; site hydrology would remain identical to predevelopment No impacts to groundwater 	<ul style="list-style-type: none"> No significant impact Wetland impacts 6.5 acres (4.20 direct fill/2.30 indirect clearing) Stream impact 1,127 linear feet Permitting and mitigation reduce impacts Net increase in impervious surface 225 acres Compliance with policies and regulations minimize impacts Net increases in stormwater runoff offset by mitigation; site hydrology would remain identical to predevelopment No impacts to groundwater
Biological Resources	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Vegetation clearing: 500 acres (460 forest; 40 shrub/grass) Temporary and minor permanent wildlife habitat impacts No adverse effect on threatened or endangered species No “takes” of bald or golden eagles USFWS concurrence received 	<ul style="list-style-type: none"> No significant impact Vegetation clearing: 525 acres (480 forest; 45 shrub/grass) Temporary and minor permanent wildlife habitat impacts No adverse effect on threatened or endangered species No “takes” of bald or golden eagles USFWS concurrence received
Cultural Resources/NHPA	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No adverse effect on historic properties <i>Consultation with VDHR ongoing</i> 	<ul style="list-style-type: none"> No adverse effect on historic properties <i>Consultation with VDHR ongoing</i>
Air Quality	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Temporary and long-term increases in emissions 	<ul style="list-style-type: none"> No significant impact Temporary and long-term increases in emissions
Noise	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Minor changes in land use Consistent with Nottoway County Comprehensive Plan 	<ul style="list-style-type: none"> No significant impact Minor changes in land use Consistent with Nottoway County Comprehensive Plan
Socioeconomics	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant adverse impact Beneficial socioeconomic impacts 	<ul style="list-style-type: none"> No significant adverse impact Beneficial socioeconomic impacts

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

Resource	No Action Alternative	Build Alternative 1	Build Alternative 2 (Preferred Alternative)
		<ul style="list-style-type: none"> Mitigated displacement impacts No environmental justice impacts No disproportionate impacts to children 	<ul style="list-style-type: none"> Mitigated displacement impacts No environmental justice impacts No disproportionate impacts to children
Traffic and Transportation	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> Significant impacts to 3 intersections Volume increase on Military Road at West Entrance Road would impede left turns during peak hours 	<ul style="list-style-type: none"> Significant impacts to 3 intersections Avoids impacts to Military Road/West Entrance Road intersection Volume increase on Military Road at West 10th Street and FASTC campus access.
Recreation	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Adverse impact to recreational hunting access during training schedule Minor impacts to other recreational resources 	<ul style="list-style-type: none"> No significant impact Adverse impact to recreational hunting access during training schedule Minor impacts to other recreational resources
Utilities and Infrastructure	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Increased demand for water, sewer, telecommunication and electricity. Increased demands would not exceed existing capacities 	<ul style="list-style-type: none"> No significant impact Increased demand for water, sewer, telecommunication and electricity. Increased demands would not exceed existing capacities
Public Health and Safety	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact No significant impacts to most emergency services or the public Moderate impacts to fire emergency response times 	<ul style="list-style-type: none"> No significant impact No significant impacts to emergency services or the public Moderate impacts to fire emergency response times
Aesthetic and Visual Resources	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Minor changes to aesthetics and visual resources. Impacts would be minimized with forest buffers 	<ul style="list-style-type: none"> No significant impact Minor changes to aesthetics and visual resources. Impacts would be minimized with forest buffers
Hazardous Substances	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact No cumulative impacts to climate, cultural resources or public health and safety Moderate cumulative impacts to topography, geology and soils, biological resources, air quality, noise, land use and zoning, recreation, utilities and infrastructure, visual resources, hazardous substances Cumulative short-term construction traffic impacts Moderate cumulative water resources impacts Beneficial cumulative economic impacts 	<ul style="list-style-type: none"> No significant impact No cumulative impacts to climate, cultural resources or public health and safety Moderate cumulative impacts to topography, geology and soils, biological resources, air quality, noise, land use and zoning, traffic, recreation, utilities and infrastructure, visual resources, hazardous substances Cumulative short-term construction traffic impacts Moderate cumulative impacts to water resources 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 alternatives 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 Draft EIS and will be considered during the preparation of the Final EIS. **Table ES-2** summarizes these mitigation measures.

Table ES-2. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Draft EIS	Regulatory Mitigation	Other Mitigation under Consideration
Climate	<ul style="list-style-type: none"> LEED Silver design standards improve building energy efficiency reducing GHG emissions 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Topography, Geology and Soils	<ul style="list-style-type: none"> Minimize grading and filling to extent feasible Water application during construction and operations for dust control Vegetation and BMPs to minimize erosion 	<ul style="list-style-type: none"> CWA Section 319 and 401 <ul style="list-style-type: none"> VA Erosion and Sediment Control Program <ul style="list-style-type: none"> 19 minimum standards VA Stormwater Management Program <ul style="list-style-type: none"> VA Permit for Discharges of Stormwater from Construction Activities SWPPP 	<ul style="list-style-type: none"> None
Water Resources	<ul style="list-style-type: none"> Perpendicular stream crossings Suitably sized culverts to maintain efficient peak flow Pile supported pathway stream crossings LID measures and stormwater BMPs 	<ul style="list-style-type: none"> Energy Independence and Security Act <ul style="list-style-type: none"> Maintenance of current stormwater runoff rates and volumes CWA Section 319, 401 and 404 <ul style="list-style-type: none"> VA Erosion and Sediment Control Program <ul style="list-style-type: none"> 19 minimum standards VA Stormwater Management Program <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> None
Biological Resources	<ul style="list-style-type: none"> Avoid disturbance whenever possible Treat disturbed edges Re-establish appropriate native plant communities Connect plant communities across larger areas 	<ul style="list-style-type: none"> CWA Section 319, 401 and 404 <ul style="list-style-type: none"> VA Erosion and Sediment Control Program VA Stormwater Management Program Maintain forest buffers around eagle nests 	<ul style="list-style-type: none"> Avoid tree clearing during migratory bird nesting season
Cultural Resources/NHPA	<ul style="list-style-type: none"> Avoidance of potential NRHP eligible archaeological sites 	<ul style="list-style-type: none"> NHPA Section 106 compliance 	<ul style="list-style-type: none"> Additional Phase II if future project design results in potential impacts to Sites 44NT0210, 44NT0212, 44NT0219, 44NT0220, 44NT0221 or 44NT222
Air Quality	<ul style="list-style-type: none"> Periodic wetting for dust control 	<ul style="list-style-type: none"> None; project area is in attainment 	<ul style="list-style-type: none"> None
Noise	<ul style="list-style-type: none"> Maintenance of vegetative buffers 	<ul style="list-style-type: none"> OSHA approved hearing protection 	<ul style="list-style-type: none"> Public notice prior to peak noise events.
Land Use and Zoning	<ul style="list-style-type: none"> Locate facilities to be compatible with adjacent land use 	<ul style="list-style-type: none"> U.S. Army CZ and APZ compliance 	<ul style="list-style-type: none"> None
Socioeconomics	<ul style="list-style-type: none"> Security gates/Signage 	<ul style="list-style-type: none"> Uniform Relocation Assistance and Real Property Acquisition Policies Act 	<ul style="list-style-type: none"> GSA Urban Development/Good Neighbor program to coordinate planning with local officials and planners to maximize

Table ES-2. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Draft EIS	Regulatory Mitigation	Other Mitigation under Consideration
			<ul style="list-style-type: none"> positive socioeconomic impacts. Notification of daycare center prior to peak noise events
Traffic and Transportation	<ul style="list-style-type: none"> Use of shuttle buses to reduce vehicle trips Second access drive to campus minimizes trips through Blackstone and the Fort Pickett West Gate. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Travel demand management measures Intersection improvements
Recreation	<ul style="list-style-type: none"> Hunting open when no training occurring 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Utilities and Infrastructure	<ul style="list-style-type: none"> Construction in existing or proposed roadways and utility corridors 	<ul style="list-style-type: none"> Pollution Prevention Act <ul style="list-style-type: none"> Source reduction measures EO 13101 Greening the Government through Waste Prevention, Recycling, and Federal Acquisition <ul style="list-style-type: none"> Recycling Policies 	<ul style="list-style-type: none"> None
Public Health and Safety	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Oil Pollution Act <ul style="list-style-type: none"> Spill Prevention, Control and Countermeasures Plan Hazardous materials/waste management regulations (CERCLA, RCRA, Oil Pollution Act, Pollution Prevention Act) <ul style="list-style-type: none"> Compliance with Hazardous Materials Management Regulations Compliance with Hazardous Waste Management Regulations Adherence to Land Use Controls 	<ul style="list-style-type: none"> None
Aesthetic and Visual Resources	<ul style="list-style-type: none"> Vegetative buffers 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Hazardous Substances	<ul style="list-style-type: none"> Soils investigations for petroleum releases at pipeline, UST and AST locations Groundwater investigations of potential offsite sources 	<ul style="list-style-type: none"> Oil Pollution Act <ul style="list-style-type: none"> Spill Prevention, Control and Countermeasures Plan Hazardous materials/waste management regulations (CERCLA, RCRA, Oil Pollution Act, Pollution Prevention Act) <ul style="list-style-type: none"> Compliance with Hazardous Materials Management Regulations Compliance with Hazardous Waste Management Regulations Adherence to Land Use Controls 	<ul style="list-style-type: none"> Manufactured BMPs (filtration systems) Soil amendments for leachate treatment
General Management	<ul style="list-style-type: none"> Monitor mitigation measure to ensure benefits are realized 		<ul style="list-style-type: none"> Establish community liaison/outreach program

Table ES-2. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Draft EIS	Regulatory Mitigation	Other Mitigation under Consideration
	<ul style="list-style-type: none">Monitor potential environmental impacts of final project design; perform additional impact analysis and NEPA documentation for any potentially significant impacts not included in EIS.		

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Acronyms and Abbreviations

Ac	Appling course sandy loam, undulating phase	Db	Durham course sandy loam, rolling phase
ACMs	Asbestos-containing materials	dB	Decibels
ACHP	Advisory Council on Historic Preservation	dBA	A-weighted scale decibels
ACUB	Army Compatible Use Buffer	dBc	C-weighted scale decibels
Ad	Appling course sandy loam, eroded undulating phase	dBp	Peak Sound Pressure Level
ADT	Average Daily Traffic	DCR	Virginia Department of Conservation and Recreation
Ae	Appling course sandy loam, rolling phase	DEQ	Virginia Department of Environmental Quality
Af	Appling course sandy loam, eroded rolling phase	DMM	discarded military munitions
AFIT	Afghanistan Field Immersion Training	DNL	Night Average Sound Level
APE	Area of Potential Effects	DoD	U.S. Department of Defense
APZ	Accident Potential Zone	DOS	Department of State
AST	Above Ground Storage Tank	DS	Bureau of Diplomatic Security
ARNG	Army National Guard	EA	Environmental Assessment
BRAC	Base Closure and Realignment	EBS	Environmental Baseline Survey
BABS	Blackstone Area Bus System	EIS	Environmental Impact Statement
BLS	Bureau of Labor Statistics	ESA	Environmental Site Assessment
BMP	Best Management Practices	EMS	Emergency Medical Services
CAA	Clean Air Act	EO	Executive Order
CAC	Compound Access Control	ESQD	Explosive Safety Quantity Distance
Ce	Cecil course sandy loam, undulating phase	°F	degrees Fahrenheit
Cg	Cecil course sandy loam, hilly phase	FASTC	Foreign Affairs Security Training Center
CO	carbon monoxide	FEMA	Federal Emergency Management Agency
CO ₂	carbon dioxide	FHWA	Federal Highway Administration
CO _{2e}	carbon dioxide equivalent	Fort Pickett	ARNG Maneuver Training Center Fort Pickett
Cp	Colfax sandy loam, undulating phase	FPPA	Farmland Protection Policy Act
CDNL	C-weighted day-night average sound level	ft ²	Feet/foot squared
CEQ	Council on Environmental Quality	FTE	Full-time equivalent
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	FWPCA	Federal Water Pollution Control Act
CFR	Code of Federal Regulations	GHG	Greenhouse Gases
CWA	Clean Water Act	gpd	Gallons per day
CZ	Clear Zone	GSA	U.S. General Services Administration
Da	Durham course sandy loam, undulating phase		

GWP	Global Warming Potential	MSATs	Mobile Source Air Toxics
HAPs	Hazardous Air Pollutants	NAAQS	National Ambient Air Quality Standards
HUC	Hydraulic Unit Code	N/A	Not applicable
IED	Improvised Explosive Device	NEPA	National Environmental Policy Act
IFIT	Iraq Field Immersion Training	NESHAPs	National Emission Standards for
IMPLAN	Impact Analysis for Planning Model		Hazardous Air Pollutants
INRMP	Integrated Natural Resources	NEW	Net Explosive Weight
	Management Plan	NGB	National Guard Bureau
IRP	Installation Restoration Program	NHPA	National Historic Preservation Act
Kg	kilogram	NO ₂	nitrogen dioxide
L	Liter		nitrous oxide
LBP	Lead Based Paint	NPDES	National Pollution Discharge
LEED	Leadership in Energy		Elimination System
	and Environmental Design	NRCS	Natural Resources Conservation Service
Lg	Louisburg sandy loam, undulating phase	NRHP	National Register of Historic Places
Lh	Louisburg sandy loam, rolling phase	NOI	Notice of Intent
LID	Low-Impact Development	O ₃	ozone
Lk	Louisburg sandy loam, eroded rolling phase	OSHA	Occupational Safety and
Lm	Louisburg sandy loam, hilly phase		Health Administration
Ln	Louisburg sandy loam, eroded hilly phase	PCBs	polychlorinated biphenyls
LOS	Level of Service	pCi/L	picocuries per liter
LRA	Local Redevelopment Authority	PEM	palustrine emergent wetland\
LUC	Land Use Controls	PFO	palustrine forested
LUPZ	Land Use Planning Zone	PK15(met)	Peak noise exceeded 15%of time
MDL	Made Land		caused by weather
Mg	milligram	PK50(met)	Peak noise exceeded 50%of time
Mn	Mixed alluvial land		caused by weather
MOU	Memorandum of Understanding	PM	Particulate Matter
MBTA	Migratory Bird Treaty Act	PM ₁₀	suspended particulate matter less than
MTBE	methyl tertiary butyl ether		or equal to 10 microns in diameter
MC	munitions constituents	PM _{2.5}	fine particulate matter less than or
mgd	million gallons per day		equal to 2.5 microns in diameter
MMRP	Military Munitions Response Program	ppm	parts per million
MPPEH	Material Potentially Presenting	POL	petroleum, oil, and lubricants
	an Explosive Hazard	PSS	palustrine scrub-shrub

RCRA	Resource Conservation and Recovery Act	USEPA	U.S. Environmental Protection Agency
Sa	Seneca sandy loam	USFWS	U.S. Fish and Wildlife Service
SARA	Superfund Amendments and Reauthorization Act	USGS	U.S. Geological Service
Sc	Stoney land	UST	Underground Storage Tank
sf	Square foot/feet	UXO	Unexploded Ordinance
SHPO	State Historic Preservation Offer	VA	Virginia
SO ₂	sulfur dioxide	VAARNG	Virginia Army National Guard
SPCC	Spill Prevention, Control, and Countermeasure	VAC	Virginia Administrative Code
SMP	Stormwater Management Plans	VDGIF	Virginia Department of Game and Inland Fisheries
SWPP	Stormwater Pollution Prevention Plan	VDHCD	Virginia Department of Housing and Community Development
TMDL	Total Maximum Daily Load	VDHR	Virginia Department of Historic Resources
TPY	Tons Per Year	VDMA	Virginia Department of Military Affairs
TSCA	Toxic Substances Control Act	VDOT	Virginia Department of Transportation
TTOC	Training Tactical Operations Center	VOC	Volatile Organic Compound
TUs	Test units	Vpd	vehicles per day
µg	micrograms	VSP	Virginia State Police
U.S.	United States	W	Water
U.S.C.	United States Code	We	Wilkes sandy loam, rolling phase
USACE	U.S. Army Corps of Engineers	Wg	Wilkes sandy loam, hilly phase
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine	Wh	Wilkes sandy loam, eroded hilly phase
USAPHC	U.S. Army Public Health Command	Wk	Worsham sandy loam
USDA	U.S. Department of Agriculture	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) is proposing to acquire land and develop 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 is near the town of Blackstone within and adjacent to the Army National Guard (ARNG) Maneuver Training Center Fort Pickett (Fort Pickett), which is operated by the Virginia Army National Guard (VAARNG) (**Figure 1.1-1**). The development of FASTC would establish a consolidated training center from which DS may efficiently conduct training for a wide array of DS law enforcement and security disciplines to meet increased demand for well-trained personnel. Currently, DS training functions are conducted in approximately 19 separate leased and contracted training facilities dispersed around the country. The proposed FASTC would consolidate training functions at one central facility.

What is GSA Proposing?

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

GSA has prepared this Draft Environmental Impact Statement (EIS), in cooperation with DOS and the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA) and National Guard Bureau (NGB), to analyze and assess the potential impacts of this proposal on the human and natural environment.

GSA and DOS are currently preparing a Master Plan for the proposed FASTC and have identified adjacent parcels at Fort Pickett and within Nottoway County's Local Redevelopment Authority (LRA) area as a possible site for the proposed FASTC program. Four parcels comprising the proposed site are shown in **Figure 1.1-2**; they include ARNG Parcels 21/20 and Grid Parcel, and Nottoway County LRA Parcels 9 and 10.

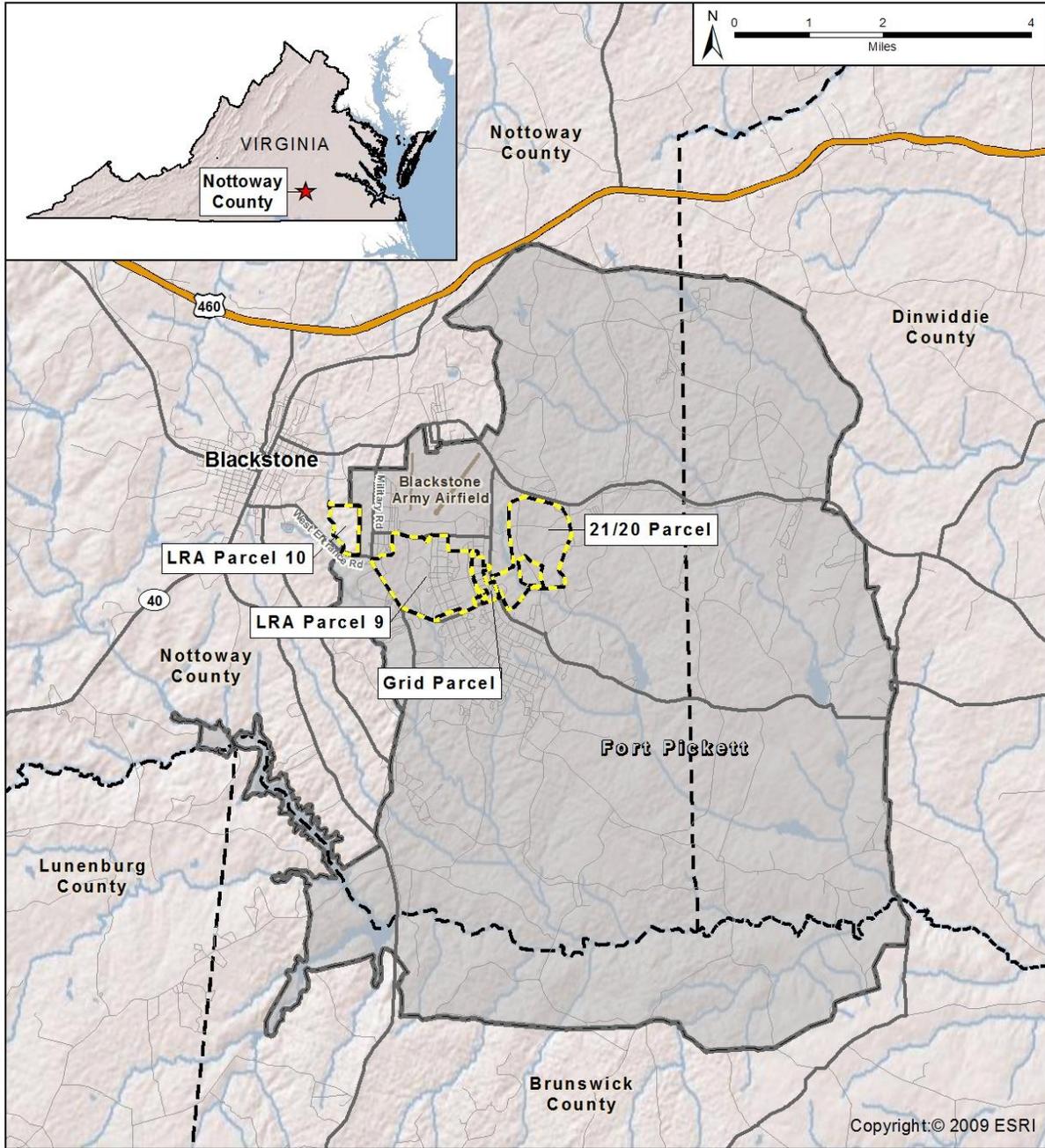
1.2 PROJECT BACKGROUND

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 that meet current facility and efficiency standards. The American Recovery and Reinvestment Act of 2009 included funding to DOS for site acquisition and the phased development of FASTC.

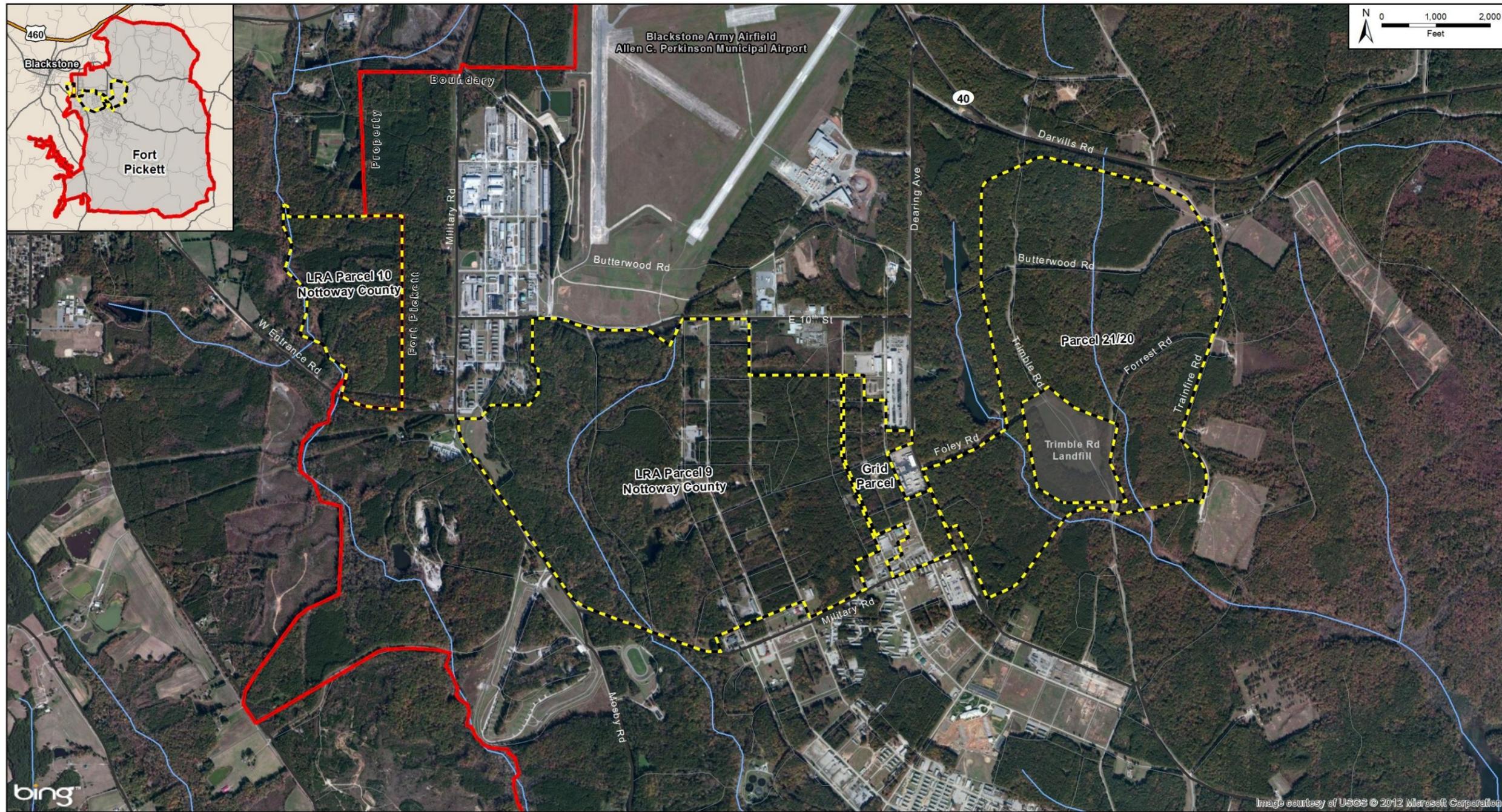
The mission of DS is “[t]o provide a safe and secure environment for the conduct of U.S. foreign policy.” DS is responsible for the protection of people, information, and property at 285 DOS Foreign Missions and 122 domestic locations. DS is prepared to counter threats from terrorism, crime, espionage, visa and passport fraud, technological

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.



Legend		<p>Figure 1.1-1 Project Location</p> <p>U.S. General Services Administration Environmental Impact Statement FASTC Nottoway County, VA</p>
 Fort Pickett	 Primary Highway	
 Parcel Boundary	 Secondary Highway	
 County Boundary	 Local Road	
	 Airfield Surface	



Legend

Fort Pickett	Secondary Highway
Site Boundary	Local Road
Rivers and Streams	

Source: ESRI (2012), KCCT (2012)

Figure 1.1-2
Proposed Project Site

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

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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 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 training functions into a single suitable location to improve training efficiency and enhance training operations.

The proposed FASTC is needed to meet the increased demand for well-trained security personnel. The consolidated center would provide training for a diverse student population including foreign affairs staff, DS special agents, Foreign Service officers, and select foreign law enforcement personnel. The proposed FASTC would provide state-of-the-art training for 8,000–10,000 students per year. FASTC would include facilities for hard skills training, such as driving tracks, firing ranges, mock urban environments, and explosives ranges; soft skills training, such as classrooms, simulation labs, and a fitness center; as well as support facilities including administrative offices, dormitories, a dining hall, and emergency medical response services.

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.

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 meet training standards 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. During urgent times and emergencies, DS has a need for the rapid deployment of certain personnel to locations around the world that is currently made difficult by the positioning of these personnel in multiple and dispersed facilities. 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, such as Iraq, Afghanistan, and Pakistan. Furthermore, DS foresees the number of high threat/critical countries increasing; thus, the need for additional highly-trained personnel in the future is of vital importance for embassy protection.

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 a minimum of 1,500 developable acres would be required to accommodate the programmatic needs while providing appropriate safety buffers and security perimeters surrounding the facility. 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 Process. 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:

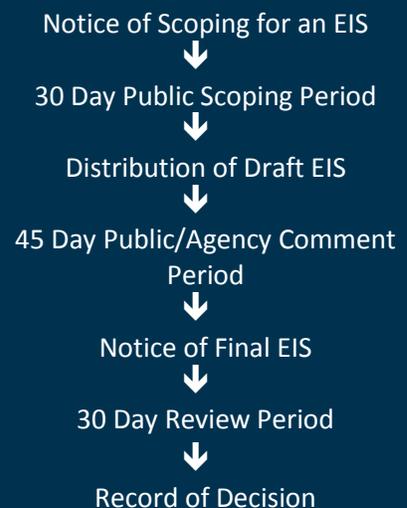
1. Provide best value to our customer agencies and the American taxpayer, develop safe, productive, and attractive work places, and ensure efficient and effective project delivery – on time and on budget.
2. Involve distinguished private-sector professionals as voices in the selection of designers and the critique of projects through concept development.
3. Ensure projects respond positively to national urban and environmental policies.

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 NEPA¹, the National Historic Preservation Act (NHPA) of 1966, as amended, and GSA’s Public Building Service NEPA Desk Guide. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions. The CEQ was established under

¹ 40 Code of Federal Regulations (CFR) 1500-1508 (1986)

What happens during the EIS Process?



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, in cooperation with DOS, USACE, USEPA and NGB, prepared this Draft EIS to assess the impacts that may result from the proposed FASTC being located in Nottoway County, Virginia. This 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 Draft EIS is based on alternative layouts developed to date as part of the FASTC Master Plan. In turn, the environmental review process has informed and improved the Master Plan, and will continue to do so as the Master Plan is refined. The final Master Plan may vary in detail, but the potential environmental impacts of the project are not expected to be significantly different than presented in this Draft EIS. Should substantial changes to the Master Plan occur after completion of the EIS, GSA will conduct additional environmental analysis, in accordance with NEPA regulations, prior to the changes being implemented.

1.4.1 Regulatory Overview

The regulatory mandates and the public and agency guidance related to the proposed FASTC facility are described below. The scope of this Draft EIS was shaped by this guidance.

The Draft EIS for the FASTC facility is a comprehensive planning document, encompassing federal policies and requirements. The following laws, regulations, guidance, and executive orders (EO) are discussed in the 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.)
- American Recovery and Reinvestment Act 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)
- 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:

- VDOT 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 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 held in October 2011. The second opportunity for formal public comment is the public comment period for this Draft EIS. GSA and DOS have also worked closely with the local community and the Commonwealth of Virginia during various outreach meetings held during 2011 and 2012. 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 through the project email: FASTC.info@gsa.gov.

1.5.1 Scoping Process

NEPA regulations require an early and open process for determining the scope of issues that should be addressed prior to implementation of a federally proposed action. GSA initiated the public scoping process for the FASTC project by publishing a Notice of Intent (NOI) to prepare an EIS in the *Federal Register* on October 4, 2011 and by notifying federal, state, and local agencies and other parties known or expected to be concerned about the Proposed Action. A copy of the NOI published in the *Federal Register* is provided in **Appendix A**. Newspaper advertisements announcing the scoping period and public scoping information meeting were published starting October 4, 2011

What is Scoping?

An early and open process for determining, through public comment, the scope of issues that should be addressed prior to implementation of a federally Proposed Action.

in the newspapers listed in **Table 1.5-1**. A 30-day public scoping period occurred from October 4, 2011 to November 3, 2011.

Table 1.5-1. NOI Advertisement Publication

NEWSPAPER	DATES OF PUBLICATION
Richmond Times-Dispatch	October 4, 11, 15, 17, and 18, 2011
Courier Record Blackstone	October 5, 2011 and October 12, 2011
Crewe-Burkeville Journal	October 4, 2011 and October 11, 2011
Dinwiddie Monitor	October 5, 2011 and October 12, 2011
Kenbridge-Victoria Dispatch	October 5, 2011 and October 12, 2011
Brunswick Times - Gazette	October 5, 2011 and October 12, 2011
Richmond Times- Dispatch Online Advertisement	October 11, 2011 through October 18, 2011

The public scoping process provides an opportunity for stakeholders, including government agencies, special interest groups, and private citizens, to become informed about the Proposed Action, to evaluate the scope of the project, and to provide input on areas of study for the EIS. A public scoping meeting was held Tuesday, October 18, 2011, between 6:30 p.m. and 8:30 p.m. at the Blackstone Armory, Blackstone, Virginia. The meeting included informational poster displays and a video presentation about FASTC. GSA and DOS representatives were present to discuss the Proposed Action and answer questions. Informative fact sheet brochures and comment forms were provided to each attendee. The posters and fact sheets explained the three ways to submit comments: 1) provide comments at the public scoping meeting, 2) submit comments via email to FASTC.info@gsa.gov, or 3) provide comments by mail to GSA, Attention Ms. Abigail Low, GSA Project Manager, 20 N. Eighth Street, Philadelphia, PA 19107.

The public scoping meeting was attended by 61 people, including 11 local officials and three people from the local media. Representatives from USACE attended. Elected officials that attended the meeting included a representative for U.S. Congressman J. Randy Forbes, the mayors of Blackstone and Crewe, and council members from Nottoway and Dinwiddie Counties.

GSA also held an agency scoping meeting with Commonwealth of Virginia agencies on October 11, 2011 in Richmond, Virginia. Agencies that attended this meeting included the Office of Attorney General, Department of Environmental Quality, Department of Conservation and Recreation, and the Department of Military Affairs.

All comments received during the public scoping period were considered in the scope of analysis of the Draft EIS and are summarized by topic in **Table 1.5-2**.

Table 1.5-2. Scoping Comments Summary

EIS Topic	General Comment
Proposed Action	Benefit of adjacent airfield to FASTC
	Multiple comments of support
Public Involvement	Request for details about the FASTC Master Plan
Noise	Noise due to day and night activity and comparison with existing Fort Pickett noise
Natural Resources	Suggested mitigation of lost forest area
Land Use	Consider combining proposed Virginia State Police drive course and range with the FASTC project to save money
Socioeconomics	Benefits to economic activity and jobs
	Support for the FASTC project specifically due to job creation
	Impacts to existing dental and medical groups
	Project effects on tax revenues to Nottoway County versus costs of adding services such as police and schools
	Opportunity for economic development in Dinwiddie County
Utilities and Infrastructure	Cooperation with current recycling program
	Broadband availability and sharing of meeting facilities
Hazardous Materials	Previous due diligence study at Fort Pickett

1.5.2 Draft EIS Public Comment Period

The Draft EIS is made available for review by all stakeholders, including federal, state, and local government agencies, special interest groups, and private citizens interested in the Proposed Action. The Draft EIS review period allows the public to consider the analysis provided in the Draft EIS and ask questions or provide comments in writing to GSA. All comments are addressed after the comment period and, if needed, additional analysis is undertaken and revisions are made in the Final EIS. All comments and GSA responses are incorporated into the Final EIS.

What is the Draft EIS Public Comment Period?

A 45-day period that allows the public and regulatory agencies to review the Draft EIS and provide comments to GSA.

1.6 CONTENTS OF THIS DRAFT EIS

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

Chapter 2 Description of Proposed Action and Alternatives:

Describes the Proposed Action and 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 and 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 Draft EIS.

Chapter 8 List of Preparers:

Lists those primarily responsible for preparing the Draft EIS..

Chapter 9 Agencies Contacted and Draft EIS Distribution List:

Contains a list of agencies contacted regarding the Draft EIS and all persons and organizations that received a copy of the 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 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 Agreement with the Department of the Army that would be supplemented with a Memorandum of Agreement with the ARNG. LRA Parcels 9 and 10 would be purchased from Nottoway County.

The Proposed Action would consolidate training functions currently taking place at various leased and contracted facilities at one state-of-the-art 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; United States (U.S.) Training Center in Moyock, North Carolina; and the Department of State (DOS) training offices in Springfield and Dunn Loring, Virginia. These facilities would no longer be leased or contracted by Department of State Diplomatic Security after full implementation of the Proposed Action.

FASTC would train primarily U.S. government employees, most of who work for DOS. These individuals would include professional DS special agents, other DOS personnel, such as security engineers and technicians, 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.

The proposed FASTC would be considered a Level III secured facility with elements of Level IV, as described in *Interagency Security Committee: Facility Security Level Determinations for Federal Facilities* dated April 2010. FASTC 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 training center for a rotating student population of 8,000–10,000 annually. FASTC would offer state-of-the-art instruction in soft and hard skills, as well as administrative and life support functions including a residential campus. Normal operating hours would be 7:30 a.m. to 5:00 p.m.,

What is included in the FASTC Program?

- Designed, built and secured to federal standards
- Certification through LEED Program
- Soft skills training:
 - Classrooms
 - Simulation Labs
 - Administrative Offices
 - Fitness Center
- Hard skills training:
 - Driving Tracks
 - Mock urban environments
 - Indoor/outdoor firing and explosives ranges
 - Weapons/explosives storage
- Life support:
 - Dormitories
 - Dining
 - Fitness Center
 - Emergency Services

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 500-700 students would be on-site on an average training day. Training courses would range from five days to 112 days in length.

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. A small night crew would remain on-site for possible service calls. 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.

While aircraft flights would not be included in training at FASTC, personnel may occasionally be transported by helicopter to/from the Blackstone Army Airfield (refer to Figure 1.1-1).

In December 2010, DOS finalized a Program of Requirements (POR) for the FASTC project. The POR involved the collection of statistical and quantitative data that included current and projected staffing. 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 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. Soft skills training would take place in classrooms and labs while the hard skills training would take place at the ranges, tracks, and simulated urban environments. FASTC would be staffed, managed, and maintained by a total of 850–1,070 employees.

2.1.1 Facility Areas of the Proposed FASTC Program

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

What facilities would be constructed for FASTC?

FASTC Activity Areas

1. Main Campus
2. Mock Urban Tactical Training
3. High Speed Driving Tracks
4. Off Road/Unimproved Driving Tracks
5. Firing Ranges
6. Explosives Ranges

2.1.1.1 Main Campus Area

The Main Campus Area would be where most of the administrative and living spaces would be located and would include the following facilities.

- *A01 Administrative Office and Classroom* – three to five-story, 145,122 square foot (sf) building that would include classroom space for 690 students, offices for the various division staff located at the site, as well as building support and storage space.
- *A02 Technical Security Training Center* – three-story, 141,928 sf building including specialized and high tech classrooms and laboratories.
- *A03 Mock Embassy Facility* – 35,738 sf mock embassy facility constructed within a warehouse-type shell, which would provide “real world” training and instruction in a simulated diplomatic setting.
- *A04 Training Compound Access Control (CAC)* – 2,934 sf facility that simulates a guard booth, visitor screening area and badge station, as well as exterior elements such as a vehicle barrier and pedestrian and vehicle mantraps.
- *A06 Dormitories* – five sets of four to five-story dorms, each 58,626 sf and containing 90 private residential rooms for visiting students for a total of 450 dorm rooms.
- *A07 Dining Facility* – two-story, 38,542 sf building that would serve as a cafeteria for students and staff and would include a full-service kitchen.
- *A08 Fitness Center* – 37,406 sf facility that would include the type of elements found in many large gyms, including a basketball court, running track, climbing wall, aerobic-cardiovascular training center, and other fitness classrooms.
- *I07 Data Center* – 13,824 sf building that would provide broadband network to support data intensive functions. It would also contain a Network Operations Center, computer workshop, and storage area.
- *R06 Simulations Building* – 49,110 sf building that would house several simulation rooms such as driving simulator, 15 non-lethal engagement rooms, two non-lethal weapons simulation rooms, one video-based computerized laser simulation room, five briefing rooms, and two broadcast studios.
- *S01 Main CAC* – 724 sf facility including two guard booths and dog kennels located directly next to the Visitors Center (S04).
- *S02 Supply CAC* – 4,886 sf facility with two incoming lanes, one for passenger vehicles and one for trucks supplying the buildings, and one egress lane.
- *S04 Visitors Center* – 13,898 sf facility that would serve as a place for students and guests to register and obtain badges to enter the Main Campus.

2.1.1.2 Mock Urban Environments Area

The Mock Urban Environments Area would be designed to simulate an urban setting for training and would include the following facilities:

- *D03 Mock Urban Driving Course* – 80-acre facility designed to be a tactical driving course that simulates 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.

- *D03a Classroom Building* – the Mock Urban Driving Course would have a 4,846 sf, 30-seat classroom with break room and staff offices.
- *E04a, b Explosives Simulation Alley* – 60-acre facility, 1.5 miles long, which contains an urban and rural environment. 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 totaling 130,903 sf would be included. In addition to these buildings a 5,218 sf, 30-seat classroom building would be located near the alley.
- *T01 Tactical Training Building* – 42,212 sf building housing office and classroom space for ten 30-seat classrooms and support areas, weapons cleaning room, equipment work area, and laundry room. The building would include space for two emergency medical staff and equipment, and parking for two medical transport vehicles. A 600 sf Training Tactical Operations Center (TTOC) and a 600 sf Range Control facility would be incorporated into the building. T01 would also support Iraq Field Immersion Training (IFIT) and Afghanistan Field Immersion Training (AFIT). IFIT/AFIT training would primarily use T02 Mock Urban Tactical Training and E04b Simulation Alley. Portable venues currently in use at the DS interim training facility would be relocated to FASTC for IFIT/AFIT. Outside of the building there would be a 100-foot by 100-foot (10,000 sf) concrete pad with various training devices. The pad would also accommodate a Mine Resistant Ambush Protected vehicle rollover device.
- *T02 Mock Urban Tactical Training* – a 45-building facility totaling 290,286 sf on 15 acres that would be modeled on the U.S. Army’s Military Operations on Urban Terrain facilities. Buildings would model banks, restaurants, theaters, and residences. There would be a mock U.S. embassy and a rubble building to replicate explosive events. Driver training would include 36 operations per day on mock urban streets.
- *T03 Rappel Tower* – 4,000 sf tower between 60–70 feet high. The tower would contain stairs, balconies, and a climbing wall. The tower would be located in the Mock Urban Environments Area.
- *T04 Tactical Maze* – three-story, 39,763 sf facility housing 60 engagement rooms, narrow and wide hallways with false walls, video and recording stations in each room, and doors for mechanical and shotgun breaching (i.e., the use of a shotgun to force entry).

2.1.1.3 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 mph and would include the following facilities:

- *D01 Driving Training Building* – two-story, 12,828 sf building with office spaces, planning room, a classroom, and showers.
- *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 4,846 sf building housing a 30-seat classroom, break room, and other student support facilities.
- *D06 Vehicle Maintenance* – 18,223 sf facility with 15 computerized bays capable of servicing cars, trucks, and armored vehicles. The facility would also have two washing bays and a drive through car wash, covered parking for 130 vehicles, parking for 100 junk vehicles, and parking for 200 training vehicles. The A10 Motorpool would be collocated with the D06 Vehicle Maintenance Shop and would consist of a 48,738 sf area that would accommodate 100 parking spaces.
- *A09 General Warehouse* – 98,552 sf storage facility with bin and cage storage, loading dock, and receiving area.

2.1.1.4 Off Road/Unimproved Driving Track Area

The off road/unimproved driving tracks would be used for training drivers in off road and unimproved road conditions. Driver training would consist of 24 operations per day plus 8 operations during the nighttime hours. 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 – 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.
- *D04a/D05a Classroom Building* – 4,846 sf building with two 30-seat classrooms for the Unimproved Road Driving Course and Off-Road Driving Course with break room and staff offices.

2.1.1.5 Firing Range Area

The Firing Range Area would train personnel in the use of firearms including, pistols, rifles, machine guns, and shot guns. Total estimated activity for all the firing ranges would be more than 6 million rounds annually during daytime hours. 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 Firing Range Area would include the following facilities:

- *R01 Firearms Training Building* – 16,712 sf facility that would provide support space for the Firearms Training Unit, a 30-seat classroom, and a shop for weapon repair. The building would be equipped with sound absorbing materials on walls and ceilings.
- *R02 50-meter Indoor Firing Range* – 163,880 sf range containing four 50-meter indoor ranges. Each range would have 25 firing points and would be fully baffled. The building would be equipped with sound absorbing materials on walls and ceilings.

- *R03a Live Fire Shoot House (One Story)* – one-story, 13,324 sf building simulating residential and commercial space. 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 household and business furnishings to create a realistic atmosphere.
- *R03b Live Fire Shoot House (Two Story)* – two-story, 13,324 sf 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 Live Fire Shoot House Classroom* – 10,949 sf facility housing a 30-seat classroom, break room, staff work stations, and a weapons cleaning room.
- *R04 150 Meter Indoor-Outdoor Tactical Combat Range* – 371,880 sf facility containing three 150 meter long by 40 meter wide ranges with 30 firing points each. It would be fully baffled to prevent bullets from exiting the range. It would also have classrooms, work stations, and a weapons cleaning room.
- *R05 Classroom on Existing 300 Meter Outdoor Firing Range* – 4,846 sf classroom constructed at an existing 17-acre outdoor firing range currently in use by Virginia Army National Guard (VAARNG) (Fort Pickett Range 8). This facility would also have workstations and a weapons cleaning room.
- *R07 Armory* – 99,100 sf facility for housing and distributing weapons. The building would also have a planning room, weapons cleaning room, 10 team rooms, a 30-seat classroom, secure vehicle storage, and a loading dock.

2.1.1.6 Explosive Range Area

At the explosives ranges, personnel would be exposed to 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 pound) charges annually, 36 annual detonations of 2.23 pound charges, and 6 annual detonations of 3 pound demolition charges.

- *E01 Explosives Training Building* – 7,086 sf facility containing classrooms, offices, and support space for the Explosives Countermeasure Unit.
- *E02 Explosives Demo 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 demolition 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 Classroom Building* – 4,662 sf, 30-seat classroom building with additional support space.
- *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.

- *E03a Classroom Building* – 4,662 sf, 30-seat classroom with additional support space.
- *E05a Explosive Breaching Classroom* – 14,944 sf, 30-seat classroom building with work benches and a six-seat technical workshop with tools such as drill presses and table saws.
- *E05b Breaching House* – two-story, 3,556 sf prefabricated building roughly 40 feet by 40 feet capable of detonations of 0.25 to 0.5 pounds NEW.
- *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 2.63 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 between 0.25 to 0.5 pounds NEW.
- *E05e Breaching Storage* – 2,000 sf building used to house a front-end loader, replacement wall and construction material.

2.1.2 Proposed Timeframe for Development of FASTC

Due to the size of the entire project, FASTC would be constructed in three phases. Phasing schedules continue to evolve and would ultimately depend on timeframes for design and appropriated funding from Congress, but they are estimated in this Draft Environmental Impact Statement (EIS) for purposes of analysis as follows.

2.1.2.1 Proposed FASTC Construction Phasing

- Phase 1 would consist of site clearing and the development of key tactical hard skills venues and a portion of the life support facilities. Phase 1 would consist of approximately one million sf of building space and 1,200 acres of driving tracks and explosives ranges. Project site work to accommodate facilities proposed in all three phases would occur during Phase 1.
- Phase 2 would include the balance of the life support facilities, administration, classrooms, and security. Phase 2 would include the construction of approximately 528,000 sf of dormitory, administration, classroom space, and security facilities.
- Phase 3 would complete the full complement of DS training facilities. Phase 3 would add a total approximately 732,000 sf of building space and 200 acres of explosive ranges.

What is the proposed construction schedule?

- **Phase 1** 2014 – 2017
- **Phase 2** 2016 – 2018
- **Phase 3** 2017 – 2020
- **Full operation** 2020

The proposed schedule for implementing each phase would be construction of Phase 1 from 2014 to completion by 2017, construction of Phase 2 from 2016 to 2018, and construction of Phase 3 from 2018 to 2020. FASTC would be in full operation by 2020. **Table 2.1-1** lists the facilities of the proposed FASTC

program according to the estimated construction phase. The facilities are numbered according to use type. The proposed location of each facility is discussed in **Section 2.2.3**.

2.1.2.2 Proposed FASTC Student and Staff Phasing

The number of students would increase as FASTC becomes fully operational. During Phases 1 and 2, the average attendance at the facility would be approximately 260 students daily, and approximately 7,300 students would be trained annually. During Phases 1 and 2, 3,240 students would stay for five days of training and the remaining 4,000 students would stay for 60 days of training. Sixty percent of the training would occur between May and September.

Table 2.1-1. Estimated FASTC Construction Phasing

FACILITY	NAME	USE	SIZE (sf)
Phase 1			
A01	Admin and Classroom Building (portion of 145,000 sf facility)	Classrooms	5,040
A06a,b	90 person Dormitories (2 of 5) 58,626 sf each	Billet	117,252
A07	Dining Facility	Kitchen, Dining - Library	38,542
A08	Fitness Center	Fitness Training	37,406
A09	Warehouse	Central Storage	98,552
A10a	Garage/Service Area, Collocate in D06	Vehicle Maintenance	Not applicable (N/A)
A11	823 Distributed Parking Spaces	General Parking	7 acres
D01	Driver Training Building	Driving Training	12,828
D02	High-Speed Anti-Terrorism Driving Tracks	Driving Training	550 acres
D02a	Classroom Building (track 1)	Driving Training	4,846
D02b	Classroom Building (track 2)	Driving Training	4,846
D02c	Classroom Building (track 3)	Driving Training	4,846
D03	Mock-Urban Driving Track	Driving Training	80 acres
D04	Unimproved Road Driving Course	Driving Training	100 acres
D05	Off-Road Driving Course	Driving Training	100 acres
D06	Vehicle Maintenance Shop/Motor pool	Vehicle Maintenance	18,223
D06a	Garage - 80 Armored Vehicles	Vehicle Maintenance	31,973
D06b	Covered Parking - 130 Training Vehicles	Vehicle Maintenance	63,360
E01	Explosives Classroom Building	Explosives Training	7,086
E02	Explosives Demonstration Range	Explosives Training	100 acres
E03	Post Blast Training Range	Explosives Training	200 acres
E04	Explosives Simulation Alley for Improvised Explosive Device (IED) recognition	Explosives Training	60 acres
E04a	Explosives Simulation Alley for IED Recognition - Classroom Building	Explosives Training	5,218
E04b	Explosives Simulation Alley for IED Recognition - Structures	Explosives Training	130,903
R01	Firearms Classroom Building	Firearms Training	16,712
R02	50 meter Indoor Firing Ranges (2 of 4)	Firearms Training	81,940
R03b	Live-Fire Shoot Houses-2 Story	Firearms Training	13,564
R03c	Live Fire Shoot House Classroom	Firearms Training	10,949
R04	150 meter Baffled Indoor-Outdoor Tactical Combat Range (2 of 3) 371,880 sf total	Firearms Training	215,000

Table 2.1-1. Estimated FASTC Construction Phasing

FACILITY	NAME	USE	SIZE (sf)
R05	Classroom for existing 300 meter Outdoor Firing Range	Firearms Training	4,846
T01	Tactical Training Building with TTOC, Range Control, AFIT/IFIT Classrooms, medical services and support areas	Tactical Training	42,212
T02	Mock Urban Tactical Training Area and Rappel Tower (20 of 45), 290,286 sf total	Tactical Training	19,256
T03	Rappel Tower in Mock Urban Environments Area	Tactical Training	4,000
T04	Tactical Maze	Tactical Training	39,763
N/A	Quick Range	Tactical Training	3,990
TOTAL PHASE 1			1,042,982 sf 1,197 acres
Phase 2			
A01	Admin and Classroom Building (completion of 145,000 sf facility)	Offices and Classrooms	139,960
A02	Technical Security Training Center	Classrooms and Labs	141,928
A03	Mock Embassy Facility	Mock Embassy	35,738
A04	Training CAC	Security Training	2,934
A06c,d, e, f	90 person Dormitories (remaining 3 of 5) 58,626 sf each	Billet	175,878
I07	Data Center	Information Technology	13,824
S01	Main CAC	Security	724
S02	Supply CAC	Main Campus	4,486
S04	Visitor Control Center	Security	13,898
TOTAL PHASE 2			528,343 sf
Phase 3			
A10 b	Covered Parking - 100 Motor pool	Motor pool Vehicles	48,738
D03a	Mock Urban Driving Classroom	Driving Training	4,846
D04a/D05a	Unimproved and Off-Road Driving Course Classroom	Driving Training	4,846
D06c	Surface Parking - 100 Junk Vehicles	Vehicle Maintenance	38,016
D06d	Surface Parking - 200 Training Vehicles	Vehicle Maintenance	76,032
E02a	Explosives Demo Range Classroom	Explosives Training	4,662
E03a	Post Blast Training Range Classroom	Explosives Training	4,662
E05	Explosive Breaching Range	Explosives Training	200 acres
E05a	Explosive Breaching Range Classrooms	Explosives Training	14,944
E05b	Explosive Breaching House	Explosives Training	3,556
E05c	Explosive Breaching Wall 1	Explosives Training	N/A
E05d	Explosive Breaching Wall 2	Explosives Training	N/A
E05e	Explosive Breaching Range Storage	Storage	2,000
I01	Public Works	Facility Maintenance	3,704
R02	50 meter Indoor Firing Ranges (remaining 2 of 4)	Firearms Training	81,940
R03a	Live-Fire Shoot Houses - 1 Story	Firearms Training	13,324

Table 2.1-1. Estimated FASTC Construction Phasing

FACILITY	NAME	USE	SIZE (sf)
R04	150 meter Baffled Indoor-Outdoor Tactical Combat Range (1 of 3), completion of R04	Firearms Training	156,880
R06	Simulation Building	Simulation Rooms	49,110
R07	Armory	Office, Support, Vault	99,100
T02	Mock Urban Tactical Training Area (25 of 45), completion of 290,286 sf facility	Tactical Training	271,030
TOTAL PHASE 3			731,918 sf 200 acres
Total All Phases			2,303,243 sf 1,397 acres

After the completion of Phase 3, at full operation, average daily attendance would increase by 640 students and approximately 10,000 students would be trained annually. The average training duration for the additional students would be approximately 112 days.

Students would be housed in on-site dormitories and at area hotels during all three phases of construction. Approximately 150 students would be housed on-site and approximately 110 would stay in hotels during Phase 1 per training session. Phase 2 would add three additional dormitories. At full operation, an average of 450 students would be housed on-site daily and approximately 250 would stay in hotels. Students residing in hotels would be transported by approximately 10–12 buses to and from the facility. Buses are anticipated to arrive at FASTC between 7:30 a.m. and 8:00 a.m. and depart at 5:00 p.m., Monday through Friday. Weekend training would require a similar transportation schedule. Limited training at night would require buses to leave FASTC between 7:00 p.m. and midnight.

Concurrent with the increase in the number of students, the number of staff would also be anticipated to increase between construction phases. Phase 1 would see the transfer of the Security and Law Enforcement Training Division with limited administrative support and tactical training support from other facilities. With anticipated movement attrition in present staff levels, plus the need for additional facility support staff, DOS estimates that approximately 248 already filled positions would be relocated. Approximately 285 positions, ranging from professional level (i.e., information technology specialists, contract and finance specialists, budget officers, program officers, etc.) to service positions (i.e., hospitality, food service, security, maintenance, grounds keeping, etc.), would be filled locally. Phase 2 would add an additional 229 employees for a total staff of 762. Some additional employee positions would be filled locally and there would be also be unit transfers from Washington, DC during this phase. Additional local staff would consist of primarily instructors, food service workers, and housekeeping.

Phase 3 would require an additional 308 employees. Some employees would be transferred including administrative and technical support, instructional systems management staff, and security engineering and computer security staff. Other employees, such as physical fitness and information technology staff, would be hired locally. Upon completion of Phase 3, an estimated maximum total of 1,070 employees would be employed at FASTC.

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 (**Figure 1.1-1**). 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.

The U.S. General Services Administration (GSA) is focusing the proposed development of FASTC on four available 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 567 acres and 74 acres, respectively, of Fort Pickett, and LRA Parcels 9 and 10 owned by Nottoway County, which are 726 and 135 acres, respectively. In total the four parcels comprise 1,502 acres. Parcel 21/20 is mostly forested and without development and is located to the southeast of Blackstone Army Airfield and south of VA Route 40. Parcel 21/20 originally included an additional 238 acres located at the southwest portion of the site's boundary and 62 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. LRA Parcel 10 is situated just west of LRA Parcel 9 and west of the West Gate to Fort Pickett off West Entrance Road. LRA Parcel 10 is forested and undeveloped except for several utility crossings.

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 active component units of all services. 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 and it is currently being 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 2010).

2.1.4 Future Related Projects

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

Where would FASTC be located?

Four potential Fort Pickett and Nottoway County parcels:

- Fort Pickett Parcel 21/20
- Fort Pickett Grid Parcel
- LRA Parcel 9
- LRA Parcel 10

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, either as part of this EIS or in a separate NEPA environmental document.

2.2 DEVELOPMENT OF ALTERNATIVES

The Council of Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA)* establish 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”². 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 alternatives carried forward for analysis in this Draft EIS are summarized below and discussed in the following sections.

Site Selection Process Summary

1. Site Alternatives Considered
 - a. 1993 Site Search
 - b. 2009 Site Search
 - c. 2010 Site Search
2. Build Alternatives Considered
 - a. 2011 Range of alternative layouts on the Fort Pickett/Nottoway County site.
 - b. 2012 GSA Design Excellence review
 - c. Build Alternative 1 and Build Alternative 2 evaluated in the Draft EIS

2.2.1 Site Alternatives Considered

2.2.1.1 1993 Site Search

DOS efforts to establish a dedicated security training facility began in 1993, and over a period of years included the evaluation of existing federal sites and private property as a potential location. The initial consideration of potential sites by DOS involved various federal facilities, operational

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

² (40 CFR 1500.2[e])

military bases, and other military facilities scheduled for closure. The search focused on land available for acquisition from federal agencies, the exclusive use of land on federal installations or military bases, as well as the expansion of existing federal facilities that could accommodate their training requirements. The inquiries also considered opportunities for sharing existing training facilities. Among the federal agencies that DOS approached to explore the potential for sharing facilities or collocating were the U.S. Drug Enforcement Administration, the U.S. Customs and Border Protection, the Federal Law Enforcement Training Center, the Federal Bureau of Investigation, and the U.S. Department of Defense. Potential federal, military, or commercial facilities investigated were: Aberdeen Proving Ground, Agricultural Resource Center, Blossom Point U.S. Army Research Center, Federal Law Enforcement Training Center, and Indian Head Naval Surface Weapons Center in Maryland; Camp Dawson and Summit Point Raceway Associates in West Virginia; and Fort AP Hill, Fort Pickett, and U.S. Marine Corps Base Quantico in Virginia. Based on responses to DOS inquiries, none of the federal facilities, operational military bases, and other military facilities were able to accommodate the student populations or the unique curriculum and mission needs of DOS.

2.2.1.2 2009 Site Search

Recognizing the lack of available federal land and the continuing need for consolidation of training activities, DOS requested assistance from GSA in the summer of 2009 to find a site suitable to accommodate FASTC. GSA used available real estate databases and posted an announcement on the Federal Business Opportunities website (www.fbo.gov) on June 29, 2009 to solicit potential sites. Using DOS project requirements, GSA issued an announcement that included the following general site criteria:

- That it be contiguous
- Be within approximately 150 miles of the U.S. Capitol in Washington D.C. to maintain proximity to DOS headquarters
- Provide geometry and topography suitable for development
- Have no landfills or hazardous waste contamination on or near the site that would require substantial clean up
- Have the developable area located outside of the 100-year floodplain
- Have reasonable access to power, water, telephone, cable or satellite, and fiber optics
- Have convenient access to major traffic arteries and amenities

These general site criteria were used to develop a more detailed set of site-selection criteria relating to the purpose and need for the facility that was used for the site selection process conducted by GSA.

As a result of searching the real estate databases and from responses to the announcement, 30 sites were identified by GSA for further exploration. The exploration process occurred from June 2009 through November 2009, which used a tiered evaluation process consisting of the detailed site selection criteria. GSA and DOS developed and applied to each site a wide-ranging set of criteria, including environmental factors, related to the purpose and need for the facility. Sites that best met the criteria at each level were moved forward in the selection process. Sites not meeting the criteria were withdrawn from further consideration. In general, the evaluations of the candidate sites began using a broad set of criteria and became more specific and focused as the candidate field narrowed. Once the evaluation

process had been completed, 27 of the properties were eliminated from consideration as a suitable FASTC site and three remaining sites were placed on a short list and evaluated further.

After detailed information was obtained on each of the three short listed properties, including the results of Phase 1 Environmental Site Assessments (baseline assessment of potential presence of contamination on or in the vicinity of the site), a comparison of the short-listed properties was made for the purposes of choosing one site as the preferred site for acquisition. The short-listed properties were evaluated in detail utilizing over 80 different criteria. In November 2009, it was determined that only the Hunt-Ray/Crismer Farms site in Queen Anne's County, Maryland, met the overall programmatic requirements of the proposed FASTC. As a result, GSA and DOS initiated its NEPA evaluation process including Public Scoping and detailed environmental investigation. In June 2010, after further analysis, DOS and GSA determined that the Hunt Ray/Crismer Farm site would no longer be considered for the DOS FASTC. DOS and GSA were committed to a robust and transparent public engagement process; valuing the input from the citizens of Queen Anne's County and the leadership of both federal and local representatives on behalf of that community.

2.2.1.3 2010 Site Search

In the summer of 2010, GSA and DOS conducted a second round of site searches with a renewed focus 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. Site selection consisted of a four-step process. Step 1 determined if a site was a candidate for the proposed FASTC using a set of mandatory and relative criteria; Step 2 evaluated candidate sites in more detail using criteria in a suitability analysis; Step 3 evaluated suitable sites in a feasibility study; and Step 4 was to perform a NEPA evaluation on the final short list of sites. Following is a description of each step.

Step 1: Criteria to Identify Candidate Sites:

Mandatory criteria

- The property must be federally owned or publically held
- The property must be a minimum of 1,500 acres and support the FASTC program of requirements (configuration and characteristics of the land may require the area to be larger than 1,500 acres, but multiple parcels may be considered)
- The property must be located near compatible land uses that would allow for 24/7 operation of the facility

Relative criteria

- Site located within 4 hours drive time or 220 miles from the DOS/DS Headquarters (1801 N. Lynn Street, Arlington, Virginia).
- Average mean winter temperature 35 degrees Fahrenheit (°F) or higher and average mean summer temperature of 82 °F or lower
- Average total annual snowfall of less than 30 inches
- Average total days of snow less than 20 days (for entire period) to limit disturbance to multi-day blast and post blast analysis training

- Average number of days in which the temperature falls below 32 °F, is less than 110, and rises higher than 90 °F, is less than 65 for entire period

Forty-one candidate sites were identified in Step 1. Of the 41 sites, only two candidate sites were identified that met all the required mandatory criteria: Letterkenny Army Depot/Scotland School in Chambersburg, Pennsylvania and Fort Pickett in Nottoway County, Virginia. These sites were then evaluated in Step 2 by a suitability analysis, site visit, and test fit of the FASTC program using the following Step 2 criteria. Details of Step 1 and Step 2 of the site evaluation process are provided in **Appendix B**.

Step 2: Criteria to Evaluate Candidate Sites:

Mandatory criteria

- Sufficient developable area – property must contain sufficient developable area to support the FASTC mission and program of requirements when considering, at a minimum, parcel configuration and environmental constraints (i.e., topography, floodplains, wetlands, steep slopes, historic and cultural resources, transportation and access, availability of utilities, etc.)
- Compatible surroundings – surrounding areas must be adequately buffered from the FASTC 24/7 impacts, accomplished by setbacks, compatible adjacent use, or noise controls

Relative criteria

- Ease of acquisition – including number of parcels, pre-existing restrictions or controls on the property's use or land costs
- Access to life support – availability of a Level I trauma center
- Community support and development climate – preliminary assessment of local support or opposition to the proposed FASTC

A full analysis of the two candidate sites was conducted, including site visits by environmental, architectural and engineering specialists and the preparation of preliminary layouts (i.e., test fits) of the FASTC program, to determine the suitability of each site. This study determined that the combination of Fort Pickett and Nottoway County parcels was the only suitable location for FASTC.

Letterkenny Army Depot/Scotland School did not meet the Step 2 mandatory criteria for the FASTC program. It was determined that there was not sufficient developable land to house the FASTC program, at the Letterkenny Army Depot/Scotland School site, that operations at this site might conflict with FASTC operations, and that operating restrictions imposed to mitigate community impact would be incompatible with FASTC's training mission. Constraints found at the site included the encroachment of blast arc zones, unsuitably steep topography, available parcel configuration, potential and known environmental constraints, potential and known federal and state threatened and endangered species, and potential and known historic and cultural resources. As a result, this site was eliminated from further consideration.

Step 3: Feasibility Study for Suitable Candidate Sites:

The third step in the site selection process was to conduct a feasibility study for the Fort Pickett/Nottoway County site. The following criteria were considered as part of the feasibility study:

CATEGORY 1 – DOS PROGRAM CONSIDERATIONS

Mandatory criteria

- Development of the site must support the DOS mission.
- Site must accommodate the DOS Program of Requirements. The build alternative must demonstrate an effective layout of the Program of Requirements and comply with federal law, policies, and best practices.

Relative criteria

- Phasing - the ability to phase development of the program and activities.

CATEGORY 2 – PROJECT IMPLEMENTATION

Mandatory criteria

- Avoids significant risks in terms of schedule, cost, and environment.

Relative criteria

- Cost.
- No significant impacts to the site acquisition and procurement process.

CATEGORY 3 – PROJECT IMPLEMENTATION

Mandatory criteria

- None.

Relative criteria

- NEPA and National Historic Preservation Act - impacts to site development and build alternatives from the protection of and/or avoidance of environmental, historical, and archaeological features.
- Sustainable design - site's ability to support sustainable design on a campus and at building level
- Community relations - site can support, mitigate, and enhance community relations.

CATEGORY 4 – FACILITIES AND SITE

Mandatory criteria

- None.

Relative criteria

- Utilities and telecommunications – availability and capacity of current infrastructure.
- Security - site would satisfy the security requirements and operations for FASTC
- Access to life support facilities.

- Transportation access and circulation within the site that supports the FASTC mission and program.

GSA and DOS prepared a feasibility study to further identify potential benefits, constraints, and risks to siting the proposed FASTC on the Fort Pickett/Nottoway County parcels. As part of this study, GSA and DOS initiated exploratory site planning workshops in July and August 2010 to study existing site conditions and facilities, utilities and infrastructure, circulation routes, adjacencies, and regulatory restrictions. Site plan “test fit” alternatives for FASTC developed during the workshops indicated that the proposed site was feasible.

After refining the proposed land configuration through coordination with VAARNG, Nottoway County, and the Commonwealth of Virginia in September 2011, DOS began the preparation of a Master Plan for FASTC at the Fort Pickett/Nottoway County site, and more detailed “build alternatives” were developed to refine the program layout and maximize the avoidance of environmental impacts.

Step 4: Evaluate Short List Sites by Conducting a NEPA Study

- Follow the process prescribed by NEPA to evaluate the short list sites

In October 2011, GSA published the Notice of Intent (NOI) for initiation of the EIS to evaluate the environmental impacts of development of FASTC on the Fort Pickett/Nottoway County site.

2.2.2 Build Alternatives Considered But Eliminated

A range of alternative layouts for development of the proposed FASTC on the Fort Pickett/Nottoway County parcels was considered. GSA and DOS developed approximately 14 different layouts or configurations of the project venues that had potential to be functional according to the needs of the FASTC program. Each layout was considered in the context of potential impacts on natural resources, the built environment, and topography. Changes were made in the layout of the proposed project to avoid impacts. Several examples of alternative layouts considered but eliminated are as follows:

- Alternative layouts were considered for the necessary relocation of an existing VAARNG tank trail, Butterwood Road, on Parcel 21/20. From an operational prospective, the optimal site for the relocated tank trail was north of the 21/20 boundary. However, the layout was revised to place the tank trail inside the 21/20 boundary and was realigned to avoid wetlands and cultural resources.
- Alternative configurations were explored for the Main Campus layout that would result in differing amounts of impacts to wetlands, but these were eliminated in favor of alternatives that would avoid or minimize impacts.

Which alternatives are evaluated further in this Draft EIS?

- **No Action:** Federal government decides not to develop any site to accommodate the FASTC program. The existing FASTC training program would continue at existing dispersed locations
- **Alternative 1:** Main Campus, Firing Ranges and Explosives Ranges on Parcel 21/20; Drive Tracks and Mock Urban Area on LRA Parcel 9
- **Alternative 2:** Main Campus on LRA Parcel 10; Firing Ranges and Explosives Ranges on Parcel 21/20; Drive Tracks and Mock Urban Area on LRA Parcel 9 and Grid Parcel

- Alternative layouts were considered for the High Speed and Off Road Drive Track areas that were refined to avoid wetlands and cultural resources and to minimize wetland crossings.

Build Alternative 1 and Build Alternative 2 were presented to the public during the scoping period in October 2011. Since the time, the alternatives have been refined to minimize environmental impact and as a result of the GSA Design Excellence process. The original alternatives were modified as follows:

- Build Alternative 1 originally presented during the scoping period included varied layouts of the drive track and firing range areas. These layouts were further developed during the EIS analysis to avoid wetlands after wetland delineations were completed.
- Build Alternative 2 originally presented during the scoping period included the Main Campus and Firing Range Areas on the southern portion of Parcel 21/20 that later was determined to not be available for the project. This and the requirements of the design excellence review process necessitated the addition of the Grid Parcel and LRA Parcel 10, and Build Alternative 2 was further developed to include on all four parcels. The drive tracks and firing range facilities were also reconfigured to avoid delineated wetlands, and the firing range buildings were relocated to avoid the buffer area for a bald eagle nest discovered in 2012 during field investigations.

Therefore, the resulting build alternatives to be evaluated further in this Draft EIS are those that both meet the needs of the FASTC program and avoid to the extent possible impacts on the natural and human environment.

2.2.3 Alternatives Considered for Further Analysis

The alternatives fully evaluated in this EIS include no action as well as two build alternatives. The two build alternatives consist of varied layouts according to the programmatic requirements of the proposed FASTC facility with site designs that have potential to have the least environmental impact.

2.2.3.1 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 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.

2.2.3.2 Build Alternative 1

Under Build Alternative 1 (**Figure 2.2-1**), training would occur at the site in hard skills and soft skills facilities located on Parcel 21/20 and LRA Parcel 9.

Main Campus Area – Classrooms, administration buildings, and dormitories (A01, A02, A03, A04, A06, A07, A08, I-07, R06, and S01, S05, and S04) would form a “Main Campus” that would be centrally located on a plateau along the western boundary of Parcel 21/20. Security standards for sensitive program elements in the Main Campus require the area to be secured by fencing to meet Interagency Security Committee design criteria. Access to the Main Campus would be through the Main CAC from Dearing Avenue, an existing north-south circulation road at Fort Pickett. Locating the Main Campus on a plateau of Parcel 21/20 utilizes a relatively flat area with gradually-sloping topography that would minimize re-grading. A dense development footprint would minimize encroachment on existing wetland buffers.

Mock Urban Environments Area – the Mock Urban Environments Area (D03, E04, T01, T02, T03, and T04) would be situated on the eastern portion of LRA Parcel 9 and would be positioned to utilize the existing street grid. This location also takes advantage of existing utilities located along the street grid and the flat natural terrain of the area.

High Speed Driving Track Area – the High Speed Driving Track Area (D01, D02, D06, and A09) would be located in the central portion of LRA Parcel 9. High speed driving facilities consist of three asphalt-paved high speed anti-terrorism driving courses (high speed tracks), each with an associated cone course, skid pad, and classroom building. Each high speed track facilitates a variety of training scenarios by also including a city street grid, one straight away per track that allows speeds of at least 90 miles per hour, elevation changes to provide uphill and downhill turns, constant-radius turns, flat turns, off and on camber turns, S-turns, and adequate safety run-off zones. The central portion of LRA Parcel 9 is an area of sloping topography that accommodates the elevation changes needed for the various turns. The integration of the tracks with existing site conditions in this location would help to minimize site work and environmental impact. The easternmost high speed track would be in proximity to the Mock Urban Environments Area and can be connected with acceleration and deceleration lanes that enable the areas to be used together in driver training scenarios.

Emergency Services – Emergency medical services, including two staff, emergency transport vehicles, and equipment would be located in the T01 training building in the southeast portion of LRA Parcel 9, off Military Road.

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Figure 2.2-1
Build Alternative 1



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FOREIGN AFFAIRS SECURITY TRAINING CENTER
MASTER PLAN
FORT PICKETT, BLACKSTONE, VA

BUILD ALTERNATIVE I

August 8, 2012



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Off-Road Driving Course and Unimproved Road Driving Course Area – the Off-Road Driving Course and Unimproved Road Driving Course (D04 and D05) and associated classroom buildings would be located on the northern portion of LRA Parcel 9. Driver classroom buildings are strategically placed to avoid runway clear zones and accident potential zones imposed by the Blackstone Army Airfield located to the north of LRA Parcel 9. Track requirements are well aligned with existing topography and the tracks are pervious, which minimizes site work and environmental impact.

Firearms Training Area – firing range buildings (R01, R02, R03a-c, R04, R05, R07, and R08) would be located in the east-central portion of the Parcel 21/20, northeast of the campus area. 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. Wetlands border the southern and western limits of the firing range area. Range 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. This location for the range buildings corresponds with existing site plateaus and avoids steep topography, wetlands, and other areas requiring substantial site work for building pad placement.

Explosives Range Area – explosives ranges (E01, E02, E03, and E05a-e) would be located in the northern portion of the Parcel 21/20. Access to the Explosives Range Area from the Firing Range Area and Main Campus would be achieved with a combination of new roads and existing tank trails. Individual explosive pads would be positioned to keep all blast fragment clearances entirely within the Parcel 21/20 boundaries.

The location of the explosive ranges proposed in Build Alternative 1 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 need to be relocated around the proposed explosive ranges because they would traverse the safety zones. The rerouted tank trails would maintain the connection between Dearing Avenue and Trainfire Road and would thus preserve the existing Fort Pickett circulation.

The following applies in general to all Build Alternative 1 sites:

Revegetation – Build Alternative 1 would require the clearing of approximately 500 acres. 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 revegetate 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.

Utilities – infrastructure improvements would be required for Build Alternative 1. Currently, water and sewer service for the area is provided by the town of Blackstone, Virginia. Both the water treatment plant and the wastewater treatment plant are located within Fort Pickett. The FASTC facilities would tie

into these existing facilities; however, additional lines would be required for Parcel 21/20. Improvements would also be required in the electrical system owned and operated by Southside Electric Cooperative. In addition to some new transmission lines, both overhead and buried, a new separate primary power delivery system would be developed. Existing telecommunications infrastructure on LRA Parcel 9, including fiber optic lines and a fiber optic node, would be relocated.

Access and Circulation – access to the Main Campus of the proposed FASTC under Build Alternative 1 would mainly be by personally operated vehicle or shuttle bus from U.S. 460 to Military Road, through the Fort Pickett Main Gate to the FASTC Main Campus CAC off Dearing Avenue. Secondary access to the Main CAC would be from U.S. 460 to U.S. 460 Business (North Main Street) to downtown Blackstone to VA Route 40 and Military Road through the Fort Pickett Main Gate to the Main CAC. Alternatively, North Main Street could be followed 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 Military Road to Dearing Avenue to Parcel 21/20 and the Main CAC, or the Main CAC to Dearing Avenue to Military Road access points on LRA Parcel 9 at Garnett Avenue and West Parade Avenue.

2.2.3.3 Build Alternative 2

Under Build Alternative 2 (**Figure 2.2-2**), the training would occur 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 includes two additional parcels as compared to Build Alternative 1, the Grid Parcel and LRA Parcel 10.

Build Alternative 2 includes all the FASTC program elements that are 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 would generally all be located on the same sites as Build Alternative 1. The major differences between Build Alternative 1 and Build Alternative 2 are the locations of the Main Campus, Mock Urban Environments Area, and two buildings of the High Speed Driving Track Area.

Main Campus Area – the Main Campus (A01, A02, A03, A04, A06, A07, A08, I-07, R06, and S01, S05, and S04) would be located on LRA Parcel 10, west of LRA Parcel 9 on West Entrance Road (**Figure 2.2-2**). The Main Campus buildings would be secured by fencing, as described under Build Alternative 1.

Mock Urban Environments Area – the Mock Urban Environments Area (D03, E04, T01, T02, T03, and T04) would be located on LRA Parcel 9 and the Grid Parcel.

High Speed Driving Track Area – the driver training building (D01) and vehicle maintenance buildings (D06), including a parking garage and associated surface parking, would be located on the Grid Parcel under Build Alternative 2. The warehouse building (A09) would also be located on the Grid Parcel under Build Alternative 2.



Figure 2.2-2
Build Alternative 2



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FOREIGN AFFAIRS SECURITY TRAINING CENTER
MASTER PLAN
FORT PICKETT, BLACKSTONE, VA

BUILD ALTERNATIVE 2

August 8, 2012

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The following applies in general to all Build Alternative 2 sites:

Revegetation – Build Alternative 2 would require a similar amount of clearing, approximately 525 acres, as Build Alternative 1. Build Alternative 2 would incorporate the same minimization of clearing of vegetation and revegetation of disturbed sites as described under Build Alternative 1.

Utilities – infrastructure improvements would also be required for Build Alternative 2. Build Alternative 2 water and wastewater requirements would also tie into the town of Blackstone’s existing facilities, and additional lines would be required for Parcel 21/20 and LRA Parcel 10. Improvements would also be required in the electrical system owned and operated by Southside Electric Cooperative. New transmission lines would be required on Parcel 21/20 and LRA Parcel 10 and a new separate primary power delivery system would be developed. Existing telecommunications infrastructure on LRA Parcel 9, including fiber optic lines and a fiber optic node, would be relocated.

Access and Circulation – The majority of daily trainee and employee vehicle trips to/from the Main Campus would be through a gate-controlled access point located on the east side of LRA Parcel 10 off Military Road, across from West 10th Street. Travel would be by personally operated vehicle or shuttle bus from U.S. 460 to Military Road, through the Fort Pickett Main Gate. Visitors, new students, and new staff would access the FASTC Main Campus through the entrance on West Entrance Road, west of the Fort Pickett West Gate. The addition of the gate on Military Road reduces trips through downtown Blackstone, West Entrance Road, and at the Fort Pickett West Gate. Travel would be from U.S. 460 to U.S. 460 Business (North Main Street) to downtown Blackstone to South Main Street and east on West Entrance Road to the FASTC CAC.

Internal circulation would be from the Main Campus to West 10th Street to Dearing Avenue to Parcel 21/20 or Grid Parcel access points. Access to the Drive Tracks and Mock Urban Environments Areas on LRA Parcel 9 and the Grid Parcel would be via West 10th Street to Dearing Avenue to two access points off Dearing Avenue. Students would access the Driver Training building from a new driveway approximately 500 feet north of Military Road. Staff reporting to the warehouse and tactical training buildings would enter and exit via existing E. 15th Street to Kemper Avenue. Access to the Firing Ranges and Explosive Ranges on Parcel 21/20 would be off Dearing Avenue via existing Foley Road and Trimble Road.

The main characteristics of Build Alternatives 1 and 2 are summarized in **Table 2.2-1**.

Table 2.2-1. Summary of Build Alternatives

Activity Area	Description	Location in Build Alternative 1	Location in Build Alternative 2
Main Campus Area	Classrooms, administration buildings, and dormitories in secure, fenced campus with CAC	Southwest portion of Parcel 21/20	LRA Parcel 10; secondary CAC (S05) located on access from Military Road
Mock Urban Environments Area	Mock urban driving course and buildings, explosives simulation, rappel tower, classrooms	Eastern portion of LRA Parcel 9	Eastern boundary of LRA Parcel 9 and Grid Parcel
High Speed Driving Track Area	Three asphalt tracks, skid pad, and classroom	Central portion of LRA Parcel 9	Same as Alternative 1
Emergency Medical Services	Located in Tactical Training Building (T01)	southeastern portion of LRA Parcel 9 on Military Road	Grid Parcel
Off-Road Driving Course and Unimproved Road Driving Course Area	Several drive tracks of differing surfaces aligned with existing topography for varied conditions	Northern portion of LRA Parcel 9	Same as Alternative 1
Firing Range Area	Firing range and classroom buildings	Southeast portion of Parcel 21/20, adjacent to existing VAARNG outdoor Range 8; access from Forrest Road and Trainfire Road	Same as Alternative 1
Explosives Range Area	Explosives pads with blast fragment clearances, breaching walls, classrooms and observation areas; VAARNG tank trail, Butterwood Road, would be relocated	Northern portion of Parcel 21/20; access from new roads and existing tank trails	Same as Alternative 1
<u>General:</u> Revegetation Plan	Minimize clearing of existing vegetation and replanting of native plant communities where possible	Parcel 21/20 (northern, southwestern, and southeastern portions) and LRA Parcel 9	Parcel 21/20 (northern and southeastern portions), Grid Parcel, LRA Parcel 9, and LRA Parcel 10
Utilities	Town of Blackstone water and sewer, use of existing lines and construction of new lines; Southside Electric Cooperative electric service with existing and new transmission lines; existing and new fiber optic lines	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 21/20 (northern and southeastern portions), LRA 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

Table 2.2-1. Summary of Build Alternatives

Activity Area	Description	Alternative 1	Alternative 2
Access and Circulation	Federal and state highways by personally operated vehicle or shuttle bus; internal circulation primarily by shuttle bus	<p>Primary roadway access to the Main Campus from U.S. 460, Military Road, Fort Pickett Main Gate, to Main Campus CAC off Dearing Avenue</p> <p>Secondary access from U.S. 460, U.S. 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</p> <p>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</p>	<p>Two roadway access points to the FASTC Main Campus. Access by the majority of students and employees from U.S. 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. 460, U.S. 460 Business, South Main Street, east on West Entrance Road to FASTC CAC off West Entrance Road</p> <p>Circulation via Military Road or Main Campus to West 10th Street to Dearing Avenue to Parcel 21/20 or Grid Parcel access points</p>

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 alternatives were vetted through GSA’s Design Excellence process to ensure that the project would be consistent with the guiding principles for the development of federal facilities.

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 Draft EIS to provide a baseline for analysis of the build alternatives.

Both Build Alternative 1 and Build Alternative 2 incorporate full development of the proposed FASTC program at Fort Pickett in Nottoway County. Both alternatives would meet the purpose of the Proposed Action by consolidating existing dispersed training functions into a single suitable location. Both build alternatives satisfy the need to meet the increased demand for well-trained security personnel.

Build Alternative 1 on two site parcels (Parcel 21/20 and LRA Parcel 9) and Build Alternative 2 on four site parcels (Parcel 21/20, Grid Parcel, LRA Parcel 9 and LRA Parcel 10) both meet the need for a large site with sufficient developable land to construct all the FASTC program facilities with adequate safety and security buffers. However, Build Alternative 2 would provide a larger area of developable land and create a site plan that achieves significantly improved function and performance. The Build Alternative 2 site plan would provide a greater opportunity to avoid wetlands, maximize the use of site topography and enable reuse of the existing street grid and stream crossings on the Grid Parcel.

Although not planned at this time, Build Alternative 2 would also provide adequate room for future growth should expansion ever be needed, in accordance with the principles of GSA Design Excellence. Build Alternative 1 would require a compressed development of program requirements, which would significantly constrain site planning for functionality, performance, flexibility and growth.

Also consistent with the principles of Design Excellence, Build Alternative 2 would establish an independent and distinctive identity for FASTC by providing a separate entrance to the Main Campus and a separate controlled access point outside of Fort Pickett. This independent location would also provide 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. An independent identity would be difficult to achieve with Build Alternative 1 because the Main Campus would be situated among Fort Pickett buildings, FASTC hard skills training areas and Fort Pickett ranges rather than in a recognizably independent location at or near the main access points to Fort Pickett. Under Build Alternative 1, the Main Campus would also be directly south of a closed landfill undergoing environmental monitoring and directly north of a second closed landfill. Also contributing to quality of

Is there a Preferred Alternative?

- Build Alternative 2 best meets purpose and need and is the Preferred Alternative.

life goals, the location of the Main Campus with Build Alternative 2 would facilitate access to Blackstone businesses and services, whereas access would be more inhibited under Build Alternative 1.

Unlike Build Alternative 1, Build Alternative 2 would provide better connection and adjacency between LRA Parcel 9 and Parcel 21/20 through the Grid Parcel; this would increase functional efficiency and ensure compatibility of adjacent land uses.

Based on the ability of Build Alternative 2 to best meet the purpose and need of the Proposed Action while avoiding environmental impacts to the maximum extent feasible, Build Alternative 2 is the Preferred Alternative.

2.4 COMPARISON OF ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

Table 2.4-1 provides a comparison of the environmental impacts of each alternative. Both Build Alternative 1 and Build Alternative 2 (Preferred Alternative) meet the evaluation criteria for minimizing environmental impacts. Because the proposed facilities and training programs and the proposed construction phasing would be the same for both alternatives, the impacts would also be similar. With impact minimization and mitigation measures, neither alternative would have significant adverse impacts to the natural or built environments, with the exception of traffic. Both alternatives would have beneficial socioeconomic impacts. The No Action Alternative would not result in environmental impacts, but would not meet the purpose and need for the Proposed Action and is not feasible.

2.4.1 Natural Environment

Build Alternative 1 would have slightly more direct wetland fill and streams impacts than Build Alternative 2, and would have more total wetland impact. Build Alternative 2 would have slightly greater amounts of forest clearing. Neither Build Alternative 1 nor 2 would adversely affect state or federal threatened or endangered species. Build Alternative 1 would include development within a 660 foot buffer zone for a bald eagle nest while Build Alternative 2 would avoid the buffer zone, but neither alternative would result in takes, as defined under the Bald and Golden Eagle Protection Act.

2.4.2 Built Environment

Neither alternative would have adverse effects on historic properties protected under the National Historic Preservation Act (NHPA). Both Build Alternative 1 and 2 would have minor noise impacts with noise increasing in the northwest portion of Fort Pickett and infrequent peak noise events increasing most noticeably in the area northwest of the Fort Pickett boundary.

Both Build Alternative 1 and 2 would have beneficial socioeconomic impacts. Build Alternative 1 and 2 would have significant adverse traffic impacts at three roadway intersections. Intersection improvements have been evaluated that would mitigate most of these impacts. Both alternatives would impact capacity at the Fort Pickett Main Gate during the a.m. peak period. Alternative 1 would also result in a significant increase in traffic volume on Military Road at West Entrance Road within Fort Pickett, which would impede left turns in the a.m. and p.m. peak hours. Both alternatives would result in recreational impacts because access to Fort Pickett hunting areas would be reduced.

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

Resource	No Action Alternative	Build Alternative 1	Build Alternative 2 (Preferred Alternative)
Climate	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No impact
Topography	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Minor localized changes 	<ul style="list-style-type: none"> No significant impact Minor localized changes
Geology and Soils	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Soil disturbance 501 acres 	<ul style="list-style-type: none"> No significant impact Soil disturbance 535 acres
Water Resources	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Wetland impacts 7.01 acres (5.20 direct fill filling/1.81 indirect clearing) Stream impact 1,205 linear feet Permitting and mitigation reduce impacts Net increase in impervious surface 214 acres Compliance with policies and regulations minimize impacts Net increases in stormwater runoff offset by mitigation; site hydrology would remain identical to predevelopment No impacts to groundwater 	<ul style="list-style-type: none"> No significant impact Wetland impacts 6.5 acres (4.20 direct fill/2.30 indirect clearing) Stream impact 1,127 linear feet Permitting and mitigation reduce impacts Net increase in impervious surface 225 acres Compliance with policies and regulations minimize impacts Net increases in stormwater runoff offset by mitigation; site hydrology would remain identical to predevelopment No impacts to groundwater
Biological Resources	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Vegetation clearing:500 acres (460 forest; 40 shrub/grass) Temporary and minor permanent wildlife habitat impacts No adverse effect on threatened or endangered species No “takes” of bald or golden eagles USFWS concurrence received 	<ul style="list-style-type: none"> No significant impact Vegetation clearing: 525 acres (480 forest; 45 shrub/grass) Temporary and minor permanent wildlife habitat impacts No adverse effect on threatened or endangered species No “takes” of bald or golden eagles USFWS concurrence received
Cultural Resources/NHPA	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No effect on historic properties <i>Consultation with VDHR ongoing</i> 	<ul style="list-style-type: none"> No effect on historic properties <i>Consultation with VDHR ongoing</i>
Air Quality	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Temporary and long-term increases in emissions 	<ul style="list-style-type: none"> No significant impact Temporary and long-term increases in emissions
Noise	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Minor changes in land use Consistent with Nottoway County Comprehensive Plan 	<ul style="list-style-type: none"> No significant impact Minor changes in land use Consistent with Nottoway County Comprehensive Plan
Socioeconomics	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant adverse impact Beneficial socioeconomic impacts 	<ul style="list-style-type: none"> No significant adverse impact Beneficial socioeconomic impacts

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

Resource	No Action Alternative	Build Alternative 1	Build Alternative 2 (Preferred Alternative)
		<ul style="list-style-type: none"> Mitigated displacement impacts No environmental justice impacts No disproportionate impacts to children 	<ul style="list-style-type: none"> Mitigated displacement impacts No environmental justice impacts No disproportionate impacts to children
Traffic and Transportation	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> Significant impacts to 3 intersections Volume increase on Military Road at West Entrance Road would impede left turns during peak hours 	<ul style="list-style-type: none"> Significant impacts to 3 intersections Avoids impacts to Military Road/West Entrance Road intersection Volume increase on Military Road at West 10th Street and FASTC campus access.
Recreation	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Adverse impact to recreational hunting access during training schedule Minor impacts to other recreational resources 	<ul style="list-style-type: none"> No significant impact Adverse impact to recreational hunting access during training schedule Minor impacts to other recreational resources
Utilities and Infrastructure	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Increased demand for water, sewer, telecommunication and electricity. Increased demands would not exceed existing capacities 	<ul style="list-style-type: none"> No significant impact Increased demand for water, sewer, telecommunication and electricity. Increased demands would not exceed existing capacities
Public Health and Safety	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact No significant impacts to most emergency services or the public Moderate impacts to fire emergency response times 	<ul style="list-style-type: none"> No significant impact No significant impacts to emergency services or the public Moderate impacts to fire emergency response times
Aesthetic and Visual Resources	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact Minor changes to aesthetics and visual resources. Impacts would be minimized with forest buffers 	<ul style="list-style-type: none"> No significant impact Minor changes to aesthetics and visual resources. Impacts would be minimized with forest buffers
Hazardous Substances	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No significant impact No cumulative impacts to climate, cultural resources or public health and safety Moderate cumulative impacts to topography, geology and soils, biological resources, air quality, noise, land use and zoning, recreation, utilities and infrastructure, visual resources, hazardous substances Cumulative short-term construction traffic impacts Moderate cumulative water resources impacts Beneficial cumulative economic impacts 	<ul style="list-style-type: none"> No significant impact No cumulative impacts to climate, cultural resources or public health and safety Moderate cumulative impacts to topography, geology and soils, biological resources, air quality, noise, land use and zoning, traffic, recreation, utilities and infrastructure, visual resources, hazardous substances Cumulative short-term construction traffic impacts Moderate cumulative impacts to water resources Beneficial cumulative economic impacts

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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 1,502 acres. The site includes four adjacent parcels: Parcel 21/20 (567 acres), Grid Parcel (74 acres), LRA Parcel 9 (726 acres) and LRA Parcel 10 (135 acres). 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 National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations, the scope of analysis in this 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. Comments received during public scoping were considered while developing the list of resources to be considered in this 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, as recorded between 1966 and 1986 (The Tornado Project 2010).

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 property 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 290-400 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

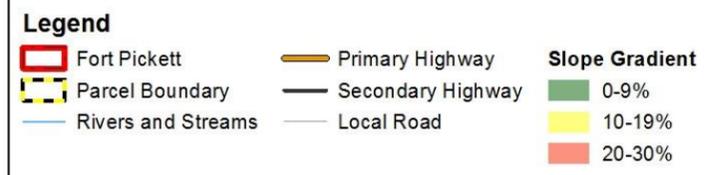
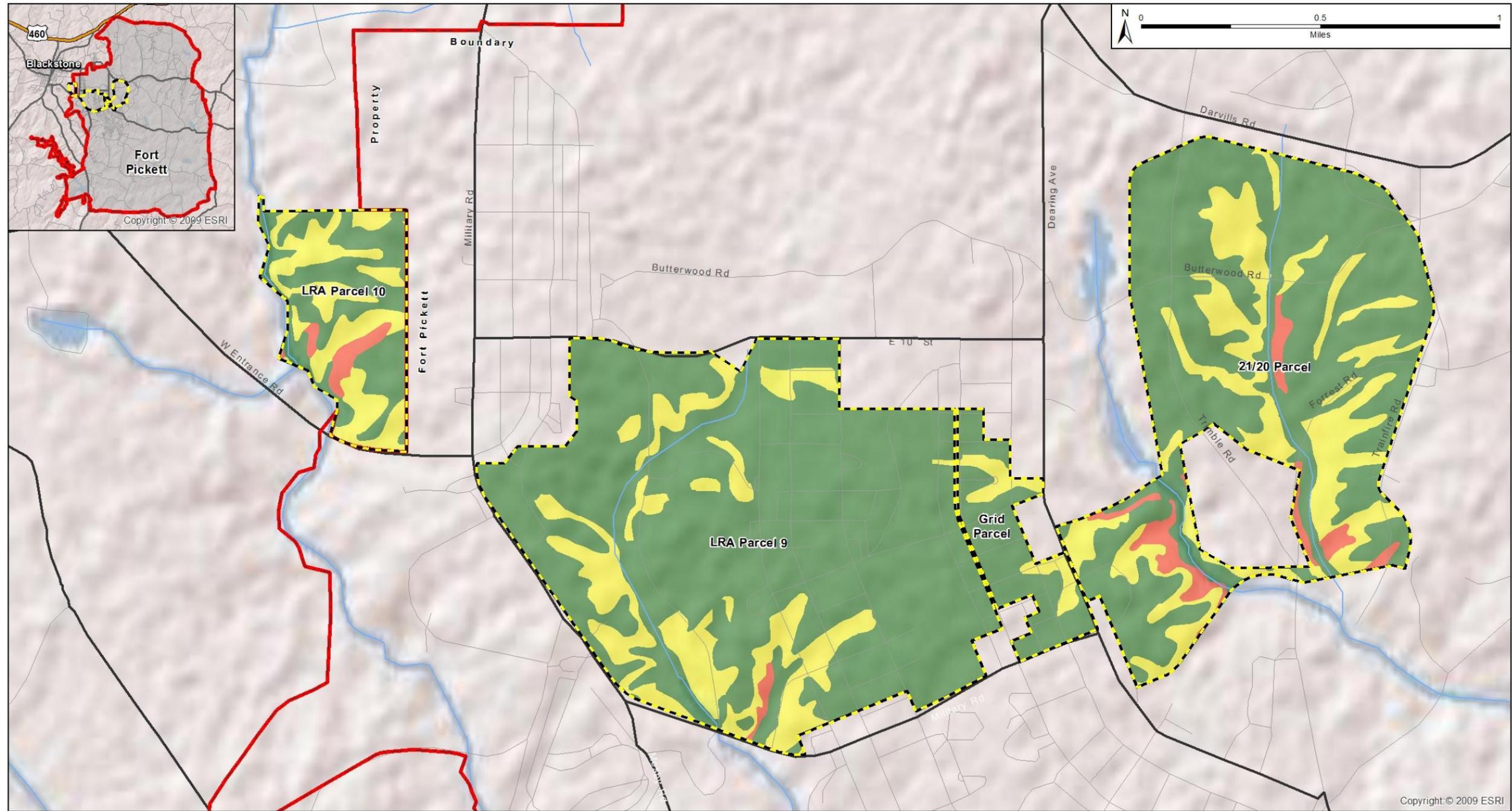
The Grid Parcel is located between 350 and 400 feet above mean sea level. The northern portion of the parcel is relatively flat with gradual slopes towards the east. Topography along the southern portion of the parcel is also relatively flat with gradual slopes northeast towards Birchin Creek.

Local Redevelopment Authority (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.

LRA Parcel 10

LRA Parcel 10 is located between 300-400 feet above mean sea level. The lowest elevations are observed along Hurricane Branch, which forms the parcel's western boundary. From Hurricane Branch, the land slopes upwards towards the east and northeast until it reaches its apex at 406 feet above mean sea level. From the apex, site topography slopes downward towards an unnamed tributary of Hurricane Branch located near the northern parcel boundary.



Source: ESRI, USDA Soil Data Mart

Figure 3.1-1
Topography and Steep Slopes

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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.

3.1.3.1 Geology

The study area parcels are 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 2012a). Several dikes and sills of intrusive igneous rocks also occur throughout the area. According to a geotechnical study completed in 2012, diabase dikes trending north-northwest (**Figure 3.1-2**) were reported and bisect Parcel 21/20 (Schnabel 2012a). Diabase is volcanic bedrock that is difficult to excavate. A diabase dike also bisects the Grid Parcel. Geotechnical borings indicated that bedrock occurs at less than 10 feet below the surface in some areas (Schnabel 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 area. The U.S. Geological Survey has designated Army National Guard Maneuver Training Center Fort Pickett (Fort Pickett) as an area of low seismic hazard (Virginia Department of Military Affairs [VDMA] 2011). The Federal Emergency Management Administration (FEMA) has developed Earthquake Hazard Maps that show Fort Pickett in a seismic design category B. According to FEMA, seismic design category B areas experience moderate shaking, with heavy furniture being moved and slight damage (FEMA 2012).

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

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, LRA Parcel 9 and LRA Parcel 10 (**Figure 3.1-2**). The dominant soils types on the map are sandy loams with varying degrees of topography and are considered well drained. Soils types of the study parcels 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 2012a). There are existing soils found on the site parcels that are not suitable for support of structures that would need to be excavated to expose the more suitable soils below.

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Table 3.1-1. Soils

Map Unit Symbol	Map Unit Name	Hydric	Farmland	K Factor ¹	Parcel 21/20	Grid Parcel	LRA Parcel 9	LRA Parcel 10
Ac	Appling course sandy loam, undulating phase		X	0.24	X	X	X	X
Ad	Appling course sandy loam, eroded undulating phase		X	0.24	X		X	X
Ae	Appling course sandy loam, rolling phase		X	0.24	X	X	X	X
Af	Appling course sandy loam, eroded rolling phase		X	0.24	X		X	X
Ca	Cecil clay loam, eroded undulating phase			0.28				X
Ce	Cecil course sandy loam, undulating phase		X	0.15	X	X	X	X
Cg	Cecil course sandy loam, hilly phase			0.28	X			
Cp	Colfax sandy loam, undulating phase			0.17	X		X	X
Da	Durham course sandy loam, undulating phase		X	0.17	X		X	X
Db	Durham course sandy loam, rolling phase		X	0.17			X	
Lg	Louisburg sandy loam, undulating phase			0.24			X	X
Lh	Louisburg sandy loam, rolling phase			0.24	X		X	X
Lk	Louisburg sandy loam, eroded rolling phase			0.24	X			
Lm	Louisburg sandy loam, hilly phase			0.24	X			X
Ln	Louisburg sandy loam, eroded hilly phase			0.24	X			
MDL	Made Land			-			X	X
Mn	Mixed alluvial land	X		0.28	X		X	X
Sa	Seneca sandy loam		X	0.28	X		X	X
Sc	Stoney land			-			X	X
W	Water			-	X		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	X

Source: USDA 2010

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)

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 3.1.3.1**. Geotechnical field work on Parcel 21/20 indicated that forest litter, root matter, and topsoil were present from about 1 to 12 inches.

The dominant soils 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 soils 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 soils 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 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 are present on the parcel: Worsham sandy loam and mixed alluvial land 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.

LRA Parcel 10

Approximately 16 soils types are present on LRA Parcel 10. Of these, two are considered hydric and seven are considered to be Prime Farmland Soils or Farmland Soils of Statewide Importance. Appling course sandy loam, undulating phase is the dominant soil type on LRA Parcel 10 and comprises approximately 43% of the parcel. This soil type is found throughout the parcel.

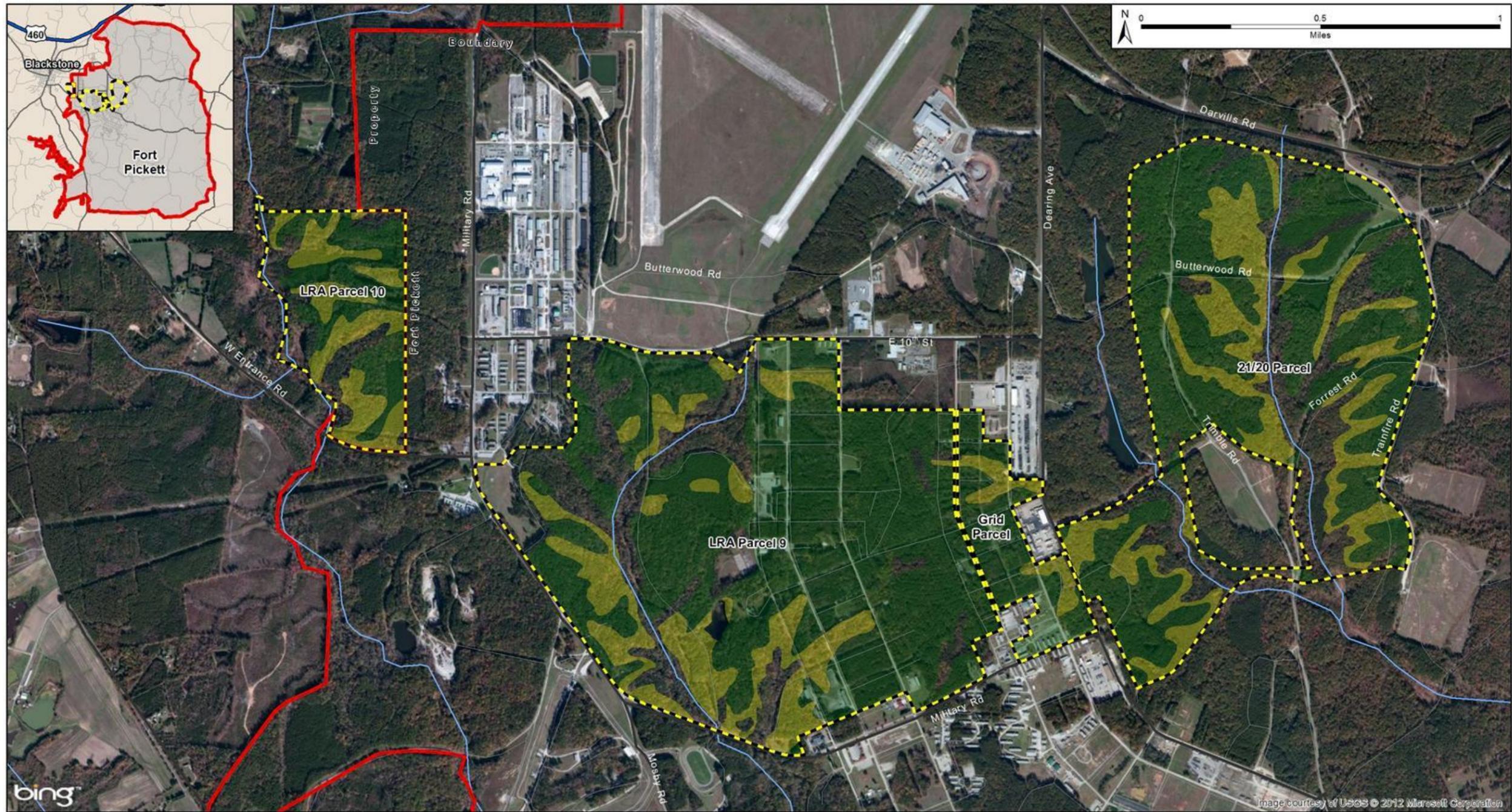
The two hydric (moist) soils present on the parcel: Worsham sandy loam and mixed alluvial land are the same as those described under Parcel 21/20. Other small inclusions of hydric soils (partially hydric) are likely present along the smaller streams and wetlands, but these areas are too small to be included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

Soils on LRA Parcel 10 have low to moderate potential for erosion as summarized in **Table 3.1-1** (USDA 2010).

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 has 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**.

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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 use³. 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 development⁴.

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 dropped to 71,442 acres (Nottoway County 2006).

Parcel 21/20

Ten soil types on 21/20 Parcel 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 (NRCS 2012). There are 438 acres of farmland soils on Parcel 21/20.

Grid Parcel

Three soils types on the Grid Parcel are classified as prime farmland soils on the Grid Parcel, 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 existing on LRA Parcel 9 classified prime farmland include; Appling coarse sandy loam, undulating phase, and eroded rolling phase, Durham coarse sandy loam undulating phase, and Seneca sandy loam. Soils existing on LRA Parcel 9 classified 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.

LRA Parcel 10

Seven soil types on LRA Parcel 10 are designated by USDA NRCS as prime farmland or as farmland of statewide importance. Three soils existing on LRA Parcel 10 classified prime farmland include; Appling coarse sandy loam, undulating phase, Durham coarse sandy loam, and Seneca sandy loam. Soils existing on LRA Parcel 10 classified farmland of statewide importance include, Appling coarse sandy loam, rolling phase and eroded rolling phase. There is a total of 102 acres of farmland soils on LRA Parcel 10.

³ 7 USC 4201

⁴ 7 USC 4201-4209 and 7 USC 658

3.1.4 Water Resources

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

The study area for water resources includes Parcel 21/20, the Grid Parcel, LRA Parcel 9, LRA Parcel 10 and the immediate downstream areas of Birch Creek and Hurricane Branch. Water resources are described individually for each parcel. Because the underlying geology of the area is consistent across the study area, groundwater resources are described jointly for the four parcels.

3.1.4.1 Surface Water

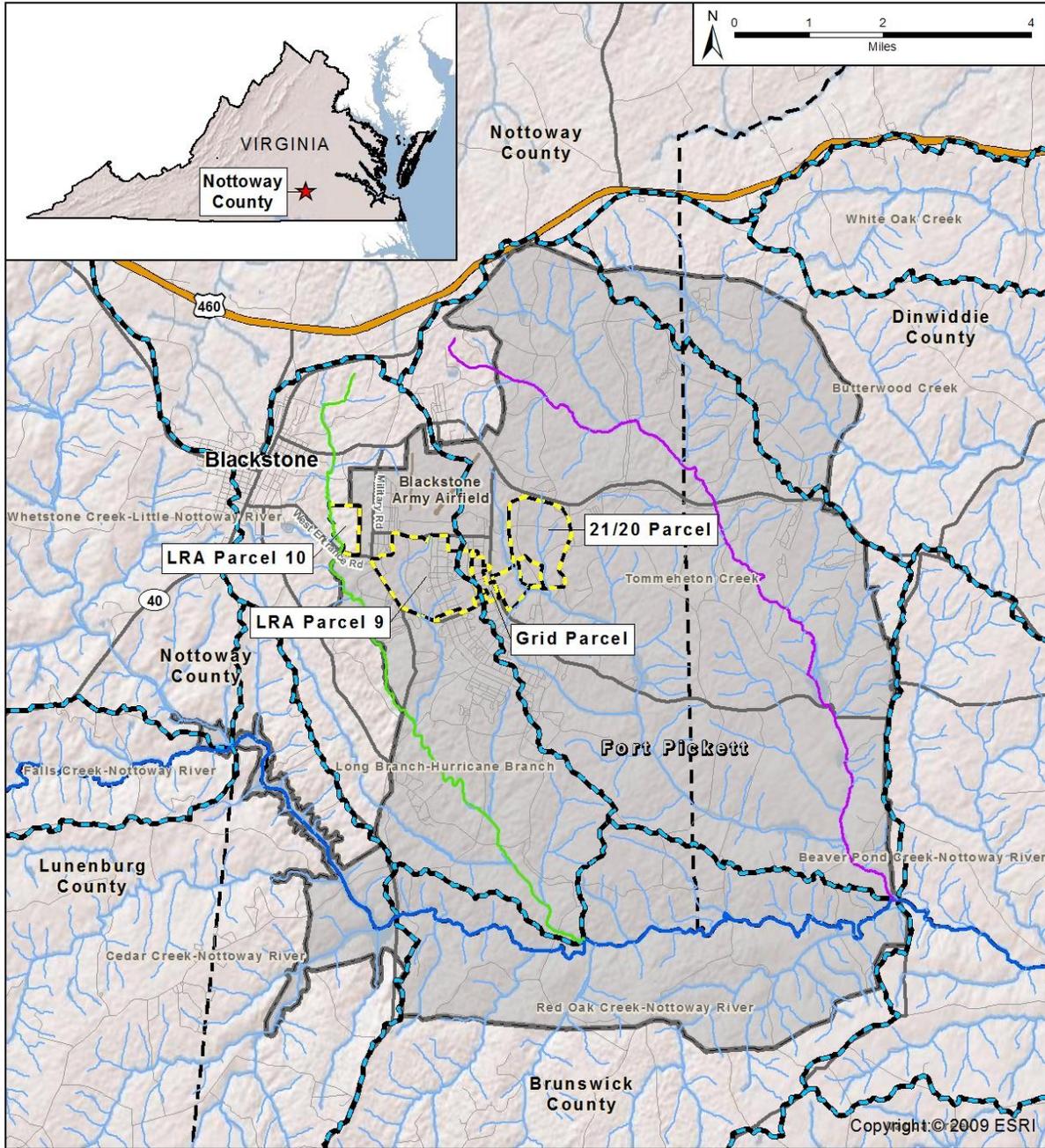
Lakes, ponds, impoundments, rivers, and streams comprise surface water resources that are important for economic, ecological, recreational, and human health reasons.

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 (U.S. Army Environmental Laboratory 1987).

The U.S. is divided and sub-divided 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) (U.S. Geological Service [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

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



Legend			
	Fort Pickett		Nottoway River Watersheds
	Parcel Boundary		Nottoway River
	County Boundary		Hurricane Branch
	Primary Highway		Tommehton Creek
	Secondary Highway		Other Creeks
	Local Road		
	Airfield Surface		

Source: ESRI, USDA-NRCS (2012)

**Figure 3.1-4
Watersheds**

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Parcel 21/20

Parcel 21/20 lies within in 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 32,935 linear feet of stream on Parcel 21/20. Birch Creek flows from north to south with several unnamed tributaries entering as it moves downstream. Birch 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 Birch Creek is comprised predominantly of unconsolidated sand and silt with occasional runs of exposed bedrock.

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 Birch Creek. There are a total of 3,884 linear feet 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 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. 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 linear feet of streams on the LRA Parcel 9.

LRA Parcel 10

LRA Parcel 10 is located to the north and west of LRA Parcel 9 and is also located within the Long Branch-Hurricane Branch sub-watershed (HUC 030102010202). Hurricane Branch runs along the western boundary of the parcel. There are three small unnamed tributaries flowing east to west across the LRA Parcel 10 and draining into Hurricane Branch. There are a total of 13,399 linear feet of streams on the LRA Parcel 10.

An unnamed tributary enters Hurricane Branch just north of where Hurricane Branch crosses under West Entrance Road. Hurricane Branch flows north-south gaining four unnamed tributaries after it leaves LRA Parcel 10 and eventually drains into the Nottoway River.

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 soils 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 (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).

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 (TetraTech 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 report (**Section 3.15**), EBS-13 (within the LRA Parcel 9) has an ongoing remedial action and monitoring program 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. In addition, a groundwater monitoring program is ongoing for the Trimble Road Landfill (adjacent to Parcel 21/20). Additional information on EBS-13 and the landfill is provided in **Section 3.15**.

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 Draft EIS, water quality is considered with the statutory requirements regarding water quality conditions. The Federal Water Pollution Control Act (FWPCA), as amended by the Clean Water Act (CWA), is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters. 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. The Act, as

amended in 1987, 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. Direct discharges of effluents are regulated under numerical limitations contained in the National Pollution Discharge Elimination System (NPDES) permits issued by the U.S. Environmental Protection Agency (USEPA) or under state NPDES programs approved by the USEPA.

Parcel 21/20

No surface waters on Parcel 21/20 are listed on the Virginia Department of Environmental Quality (DEQ) 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.

Grid Parcel

None of the surface waters present on the Grid Parcel are classified as impaired by DEQ. These waters are either unimpaired or have not been assessed.

LRA Parcel 9

An unnamed tributary to Hurricane Branch is located on the western portion of LRA Parcel 9 and is classified as impaired from its headwaters to its confluence with Hurricane branch by DEQ. 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. DEQ has not yet developed a TMDL implementation plan for Dissolved Oxygen for this stream (DEQ 2010).

LRA Parcel 10

None of the surface waters present on the LRA Parcel 10 are classified as impaired by DEQ. These waters are either unimpaired or have not been assessed.

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. It 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.

Wetland delineation was completed on Parcel 21/20, the Grid Parcel, LRA Parcel 9, and LRA Parcel 10 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 106 acres of wetlands in the study area. The USACE and DEQ reviewed the delineation in the field and have issued a preliminary jurisdictional determination; completed jurisdictional determination forms are included in **Appendix C**.

A Virginia Army National Guard (VAARNG) management goal documented 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 identified in the study area – palustrine emergent wetland (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO). Palustrine wetland habitats are non-tidal and dominated by trees, shrubs, or emergent vegetation (Cowardin 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 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 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 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 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.

Wetlands of the Study Area

- Total 106 acres in four-parcel study area
- Parcel 21/20: 41 acres
- Grid Parcel: 1.5 acres
- LRA Parcel 9: 49 acres
- LRA Parcel 10: 15 acres
- Majority of wetlands are forested

The investigation resulted in the delineation of 41 acres of wetland on Parcel 21/20 and the area between 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. These PSS wetlands could represent successional stage wetlands in transition from emergent to forested wetlands or might be stable PSS systems. Wetland buffer area on this parcel was measured to be approximately 176 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 wetland 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 was measured to be approximately 19 acres.

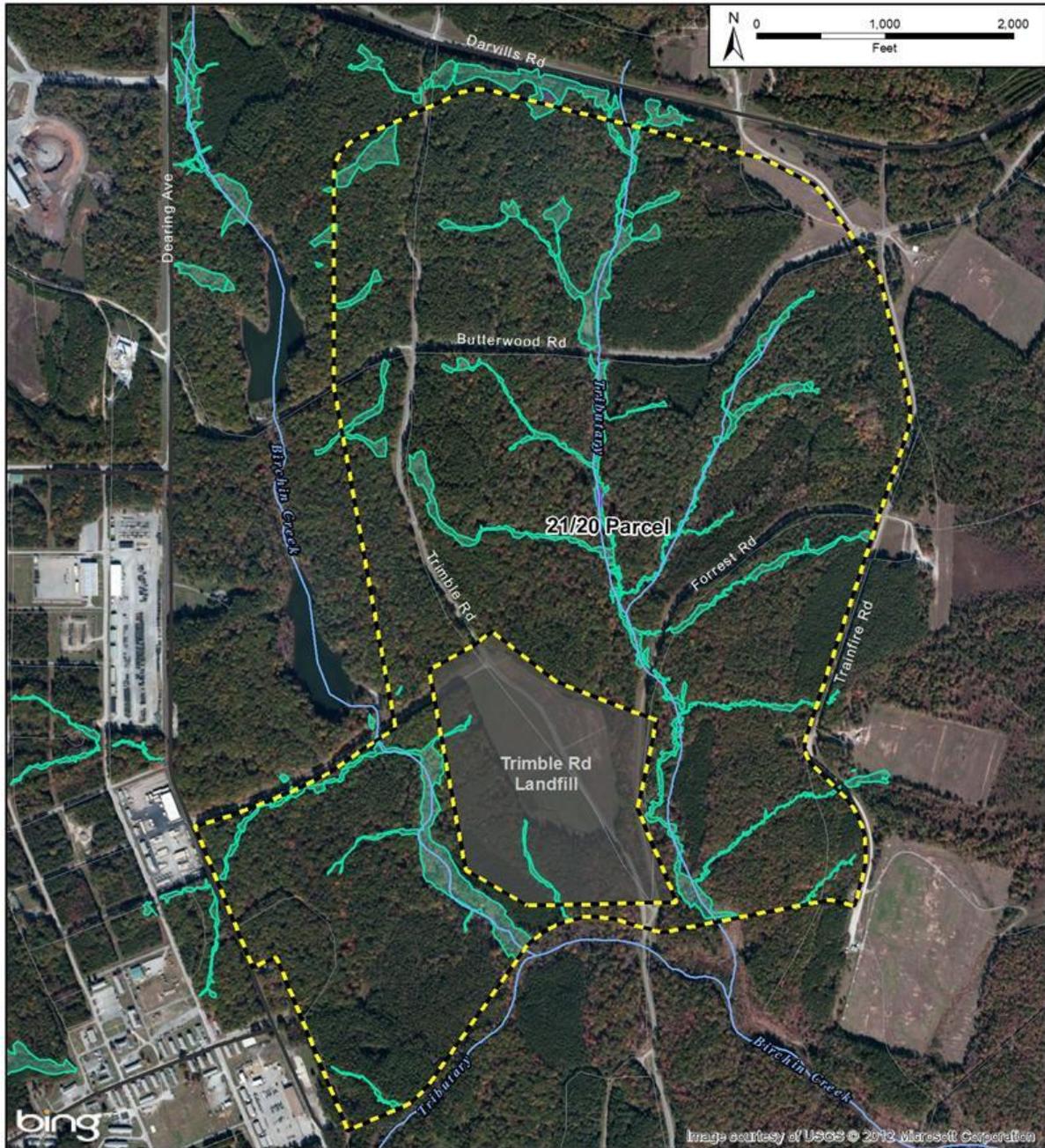
LRA Parcel 9

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 wetland 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.

LRA Parcel 10

Parcel 10 has wetlands primarily along the western boundary where Hurricane Branch flows north-south along the parcel. 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.



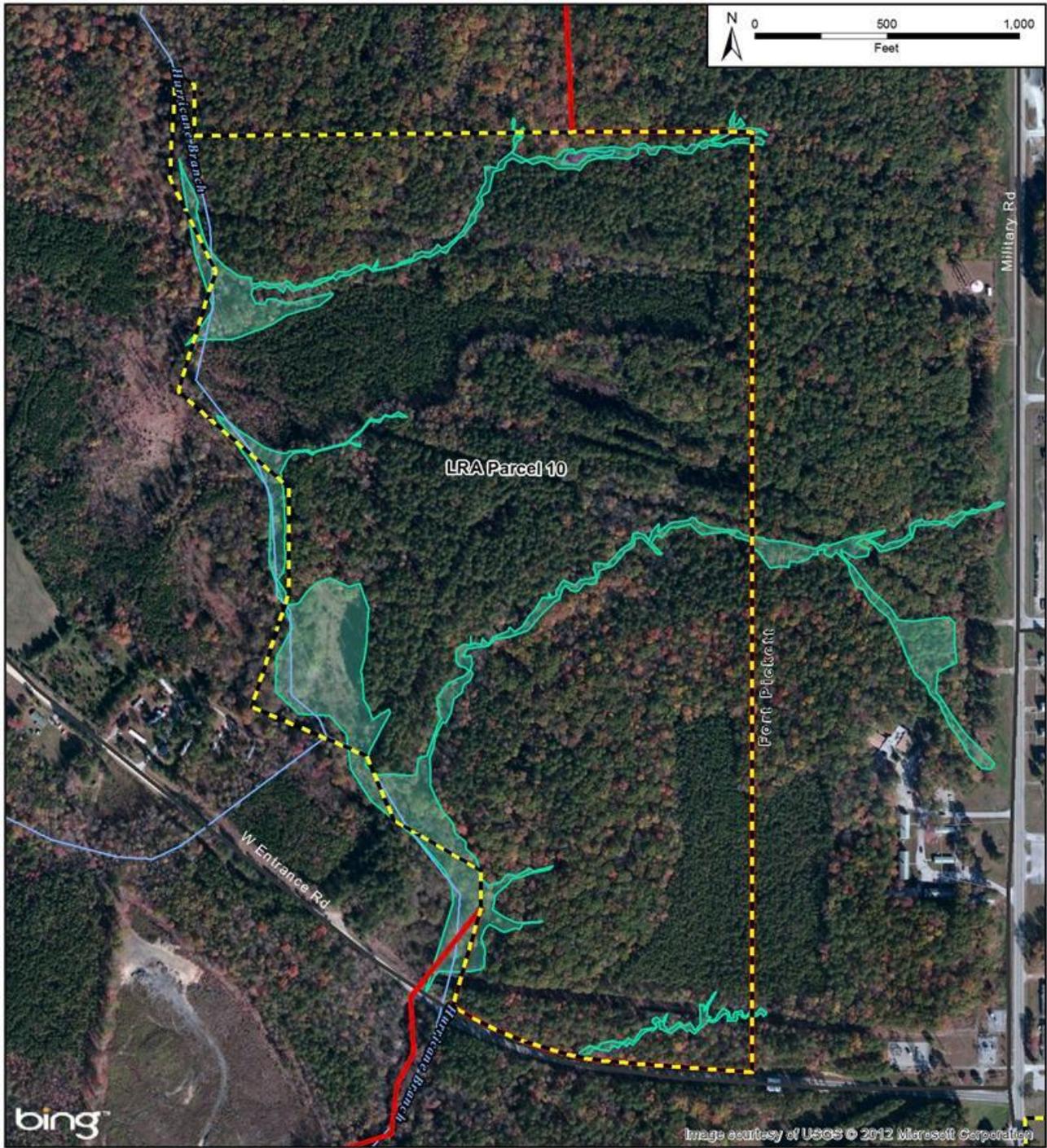
The investigation resulted in the delineation of 15 acres of wetland on LRA Parcel 10 and the area proposed for an access road between the parcel boundary and Military Road, as depicted in **Figure 3.1-5c**. Results from wetland delineation determined that LRA Parcel 10 contains the most PFO wetlands, with numerous interspersed smaller PEM wetlands. Along Hurricane Branch, on the western parcel boundary, there are two large PFO wetlands. Within the larger, most downstream PFO wetland are two PEM wetlands and also one PSS wetland. There are smaller tributaries draining east-west into Hurricane Branch and on the eastern end of an unnamed tributary mid-parcel, just west of Military Road, is a large PFO wetland with two adjacent PEM wetlands and a PSS wetland. Wetland buffer area on this parcel was measured to be approximately 58 acres.



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

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Legend

- | | | |
|--------------------|------------|------------------------------------|
| Fort Pickett | Major Road | Jurisdictional Wetland Type |
| Site Boundary | Local Road | Wetland |
| Rivers and Streams | | Isolated DEQ Wetland |
| | | Upland Island |

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

**Figure 3.1-5c
Wetlands on LRA Parcel 10**

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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, Grid Parcel, LRA Parcel 9, LRA Parcel 10 or the 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 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.

Biological Resources of the Study Area

- No Federal or State Protected Species are in the Study Area
- A bald eagle nest is present just outside the Parcel 21/20 Boundary

The study area for biological resources is the land within the proposed boundary of each parcel. The area surrounding the study parcels 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 on the study parcels, 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 parcels. 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/savannah (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 their identification 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 2,600 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, LRA Parcel 9 and LRA Parcel 10, are depicted in **Figure 3.1-6**. Approximate 1,335 acres of forestland and 105 acres of grassland/shrubland are present on the parcels. 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 on any of the study area parcels.

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

Vegetation of the Study Area

- No rare or unique vegetation communities
- Approximately 1,335 acres of forestland and 105 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.

block was considered to be fragmented if it was separated by a break in tree canopy of 30 feet or more wide (Green Valley Institute 2012). 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.

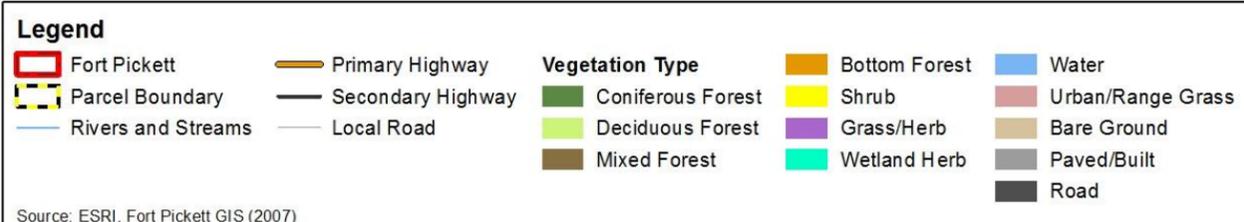
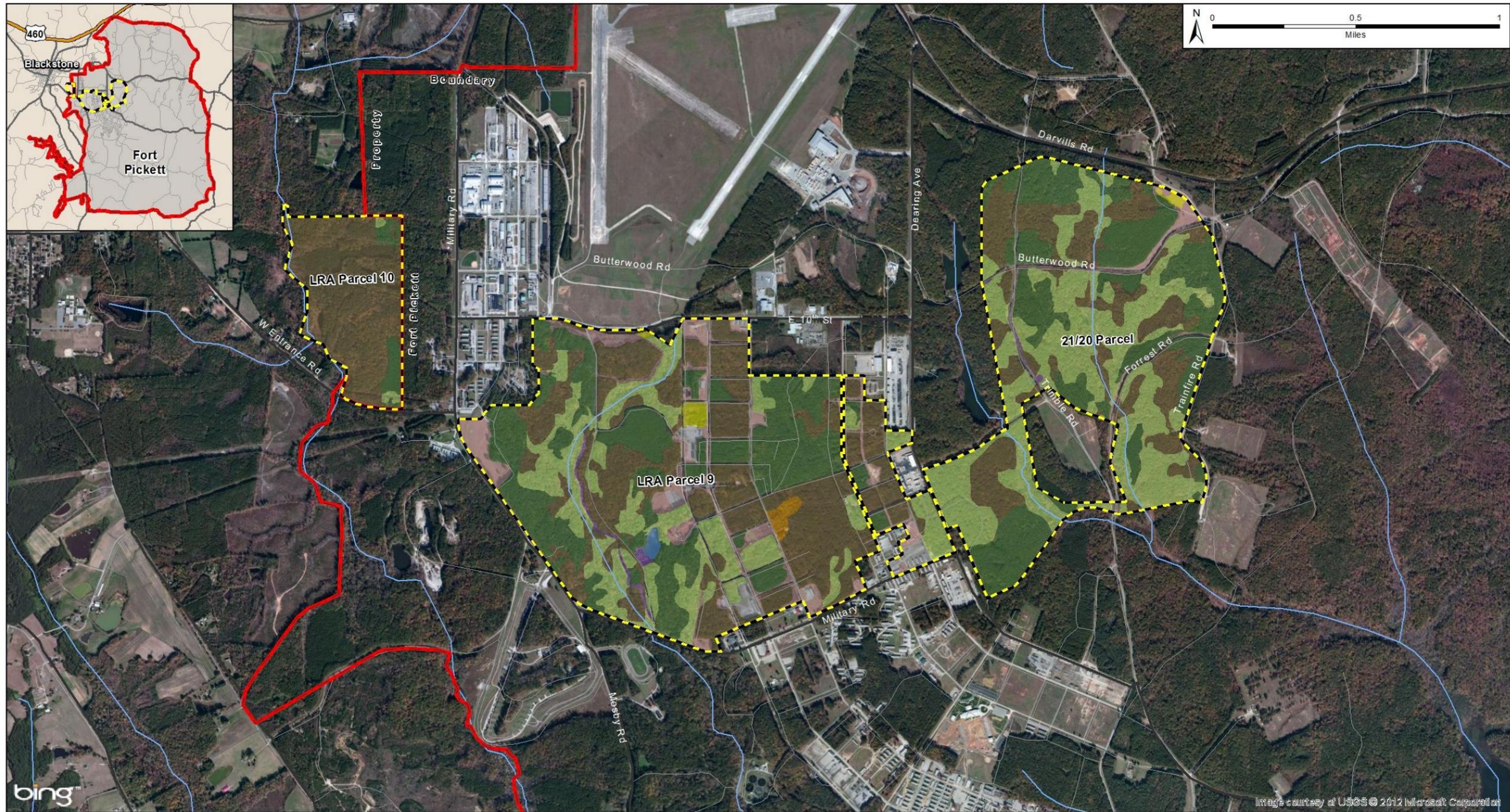
Parcel 21/20

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 effusus*), 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.



Source: ESRI, Fort Pickett GIS (2007)

Figure 3.1-6
Vegetation Communities

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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 and east of Trimble Roads. The second largest is located between the Trimble Road landfill and Dearing Avenue is approximately 165 acres. The remaining forest blocks are all under 150 acres in size.

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 that 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 in size.

LRA Parcel 10

LRA Parcel 10 is dominated by mixed forest but also contains small areas of both coniferous and deciduous forest. The forest habitat is similar to that described for Parcel 21/20 and has no known history of development. Wetland vegetation is present along its western boundary in association with Hurricane Branch.

The dominant vegetation within the palustrine wetlands includes loblolly pine, red maple, sweet gum, sycamore, black gum, green ash, highbush blueberry, iron wood, spice bush, river birch, soft rush, and netted chain fern.

The uplands are dominated by tulip poplar, loblolly pine, red oak, white oak, flowering dogwood, American holly, partridge berry, strawberry bush and Christmas fern.

LRA Parcel 10 contains utility easements, the majority of which are not wide enough to fragment the forested area. As such, this parcel is considered largely unfragmented and of moderate value to forest interior species when contiguous forest areas outside of the study area boundaries are considered. The forest block that encompasses this parcel is approximately 415 acres, of which Parcel 10 comprises 135 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 (*Sciurus carolinensis*), 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 several species of bats. Black bear (*Ursus americana*) have been documented on Fort Pickett only as occasional transients. There have been no documented sightings of rare or endangered mammal species on Fort Pickett (VAARNG 2007). 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.

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. A one-year bird atlas project conducted by the Conservation Management Institute at Virginia Tech University documented avian abundance seasonally in the study area and identified 124 species (CMI 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 on the site parcels as no extensive areas of grassland habitat are present. Grassland areas on the study area parcels 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**.

Although no longer a listed species under the Endangered Species Act, bald eagles (*Haliaeetus leucocephalus*) are known to occur at Fort Pickett and are protected under the Bald and Golden Eagle Protection Act. There are two known active bald eagle nests on Fort Pickett; however, no eagle concentration areas are present. One active nest (Nest Code: NY0801) is located on Hurricane Branch approximately 2.5 miles south of LRA Parcel 9. This nesting site is located outside the study area. A second active bald eagle nest was discovered near Parcel 21/20 during a 2012 field survey conducted for the Draft EIS and Commonwealth of Virginia Department of Game and Inland Fisheries (VDGIF) has not yet assigned it a nest code. It is unknown at this time if this is a recurrent nest, if this nest has ever successfully fledged young or whether the nest will be used again in the future. VAARNG has advised that they intend to perform studies of the nest. The nest is located approximately 440 feet east and 225 feet south of the southeast 21/20 parcel boundary, near existing VAARNG outdoor firing ranges.

Reptiles and Amphibians

Reptilian fauna in the study area include the black rat snake (*Elaphe obsoleta*), eastern garter snake (*Thamnophis sirtalis*), broadhead skink (*Eumeces laticeps*), and eastern box turtle (*Terrapene carolina*). Other reptiles typical to the area include the common snapping turtle (*Chelydra serpentina*), northern black racer (*Coluber constrictor*), and northern water snake (*Nerodia sipedon*) (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 of 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 Birch 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

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 through correspondence describing GSA's assessment of project effects on federal endangered or threatened species. VDGIF and the DCR, Division of Natural Heritage were provided GSA's assessment of state threatened and endangered species.

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 Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act.

Table 3.1-2. Federal Protected Species Potentially Occurring in Study Area ¹

Common Name	Scientific Name	Status (federal or state) ²
Michaux's sumac	<i>Rhus michauxii</i>	E/-
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E / E
Roanoke logperch	<i>Percina rex</i>	E/-
Bald eagle	<i>Haliaeetus leucocephalus</i>	³ /T

Notes: ¹ Listed by USFWS

² E-endangered, T- threatened

³ Bald Eagle is federally delisted from Endangered Species Act but is still awarded some protection under the MTBA and Bald and Golden Eagle Protection Act.

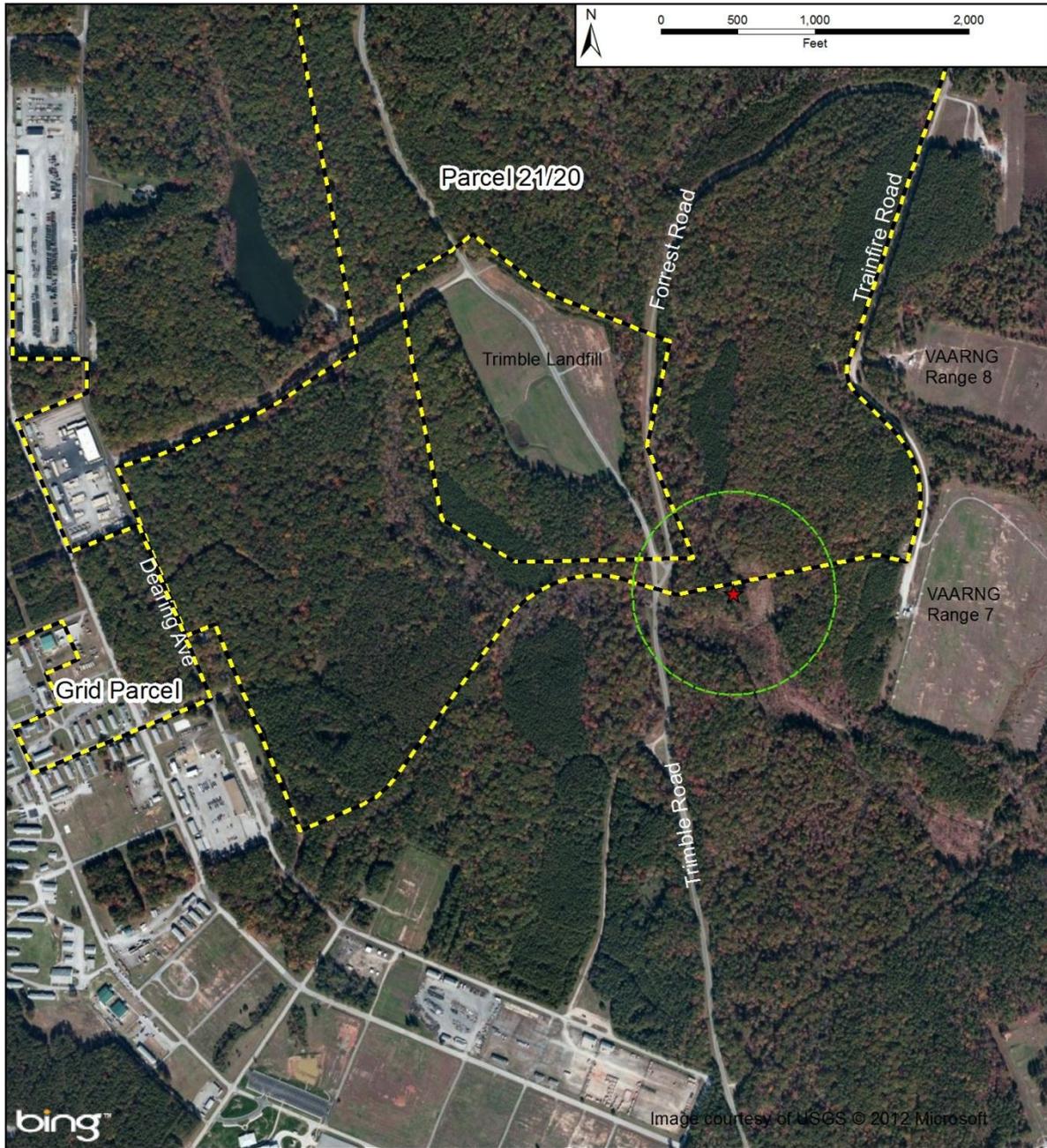
Michaux's sumac (*Rhus michauxii*) is a federally listed endangered plant that prefers openings, thin woods, and is dependent on some form of disturbance (USFWS 1993). Due to the habitat conditions on Parcel 21/20 and LRA Parcel 9, it is unlikely that Michaux's sumac would occur in these areas. Fringe 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. LRA Parcel 10, however, is forested with coniferous and deciduous trees with no history of development. The power line easement in the southern portion of LRA Parcel 10 contains 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 on the parcel. Based on habitat conditions throughout the rest of LRA Parcel 10, there is no other potential habitat present.

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. 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 lives in muddy sand, sand, and gravel bottoms in creeks and rivers (USFWS 1993). 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. Hurricane Branch along the western boundary of LRA Parcel 10 is primarily composed of sand and finer sediment has visible perennial

flow and an average depth of 6 inches at its southern extent. Therefore, it could potentially support dwarf wedge mussel, however, this species has not been documented outside of the Nottoway River. Also, downstream of LRA Parcel 10 there is a spillway on Hurricane Branch, which would impede movement of dwarf wedge mussel larvae upstream from the Nottoway River, where they are known to occur. It is possible that dwarf wedge mussels were located upstream of the spillway prior to its construction and the population has been isolated from the downstream population; however, due to the lack of suitable habitat, it is unlikely that an existing population could have a viable breeding population.

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). They are considered a visual predator and any reductions in visibility due to sedimentation interfere with their success (VAANG 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. According to the Virginia Fish and Wildlife Information Service there is predicted habitat present for Roanoke logperch in the southern 300 feet of Hurricane Branch where it forms the southwest boundary of LRA Parcel 10. The potential for habitat to be present on LRA Parcel 10 was confirmed through a field survey of the reach as the stream substrate was observed to be composed of sand and finer sediment, with visible flow and an average depth of six inches. However, this reach has been subject to disturbance from road crossings and utility crossings along its tributaries. Also, downstream of LRA Parcel 10 there is a spillway on Hurricane Branch, which would impede movement of Roanoke logperch upstream from the Nottoway River, where they are known to occur. Therefore, this species is not likely to occur within the study area. It is possible that Roanoke logperch were located upstream of the spillway prior to its construction and the population has been isolated from the downstream population; however, due to the lack of suitable habitat, it is unlikely that an existing population could have a viable breeding population.

Although no longer a listed species under the Endangered Species Act, bald eagles (*Haliaeetus leucocephalus*) are known to occur at Fort Pickett and are protected under the Bald and Golden Eagle Protection Act (Federal Regulations 2012). One active bald eagle nest is located on Hurricane Branch approximately 2.5 miles south of LRA Parcel 9; however, it is not within the study area. In addition, an active bald eagle nest was discovered near Parcel 21/20 during a 2012 field survey and has not yet been assigned a nest code. The nest is located approximately 440 feet east and 225 feet south of the southeast 21/20 parcel boundary near existing VAARNG outdoor firing ranges (**Figure 3.1-7**).



Legend

- ★ Bald Eagle Nest
- 660 Foot Nest Buffer
- Parcel Boudaries

Figure 3.1-7
Bald Eagle Nest Location

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

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 or activity on LRA Parcel 10 or Grid Parcel. The early successional nature of the forests and dense understory on Grid Parcel render these areas 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 Area¹

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

¹Listed by Virginia Fish and Wildlife Information Service

²SE-listed endangered, ST- threatened

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

Red-cockaded woodpecker (*Piocooides 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 on the study area parcels 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 on any of the study area parcels.

Upland sandpiper (*Bartramia longicauda*) 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 any of the study area parcels.

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 and habitat with thorny species (e.g. hawthorn and locust), because they do not have powerful talons loggerhead shrikes often impale their prey on the thorns in order to provide hold it in place while they tear it apart with their beak (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 (VAANG 2007). The habitat present in the study areas 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 areas does not meet the requirements for migrant loggerhead shrike and 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 right-of-ways 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 the CAA. The frequent fires caused 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 on the study area parcels and because of the lack of burn maintenance, the study area parcels do 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 were no presence of them during a 2006 survey (VAANG 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. According to the Virginia Fish and Wildlife Information Service there is predicted habitat present for Atlantic pigtoe in the southern 300 feet of Hurricane Branch where it forms the southwest boundary of LRA Parcel 10. The potential for habitat to be present on LRA Parcel 10 was confirmed through a field survey of the reach as the stream substrate was observed to be composed of sand and finer sediment, with visible flow and an average depth of six inches. However, this reach has been subject to disturbance from road crossings and utility crossings along its tributaries. Furthermore, extensive surveys for this species have been conducted at Fort Pickett and all known populations are located in the Nottoway River mainstem to the south of the study area (Wolf 2010). Also, downstream of LRA Parcel 10 there is a spillway on Hurricane Branch, which would impede movement of Atlantic pigtoe larvae upstream from the Nottoway River, where they are known to occur. It is possible that Atlantic pigtoe were located upstream of the spillway prior to its construction and the population has been isolated from the downstream population; however, due to the lack of suitable habitat, it is unlikely that an existing population could have a viable breeding population. Streams on the Grid Parcel are seasonally intermittent and lacking swift flowing water, and would not offer suitable habitat for Atlantic pigtoe. Therefore, this species is not likely to occur within the study area.

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 Birch Creek and several unnamed tributaries. Birch 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 Birch Lake to the south of the 21/20 parcel. The low stream flows and marsh habitats associated with Birch 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 all 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. Hurricane Branch is located along the western boundary of LRA Parcel 10. This stream is primarily composed of sand and finer sediment, has visible perennial flow and an average depth of 6 inches at its southern extent. Therefore, it would provide suitable habitat for whitemouth shiner. A spillway is present on Hurricane Branch to the south of Parcel 10 that would impede upstream movement of fish and therefore this species is not likely to occur in the Parcel 10 study area. It is possible that whitemouth shiner was located upstream of the spillway prior to its construction and the population has been isolated from the downstream population; however, due to the lack of suitable habitat, it is unlikely that an existing population could have a viable breeding population.

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).

The governor of each state or territory appoints a State Historic Preservation Office (SHPO) who is responsible for administering cultural resources programs within a given jurisdiction. The Virginia Department of Historic Resources (VDHR) is the designated SHPO for Virginia. 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 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.

Are there historic resources in the area potentially affected?

- No NRHP-eligible historic district is present at Fort Pickett
- Three buildings are in indirect effects APE and are eligible for listing on the NRHP
- Five archaeological sites in the APE are potentially eligible for the NRHP

Once cultural resources have been identified, they are evaluated for their eligibility for inclusion in the NRHP according to NRHP eligibility criteria⁵. 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 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 an 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 exist⁶.

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 Parcels 9 and 10 (**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 four 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 two access roads. The access roads are West Entrance Road and Military Road, extending from VA Route 40 into Fort Pickett and 100-feet on both sides of each road. The extent of the indirect effects APE is largely in consideration of potential noise effects from the proposed undertaking. Noise modeling was conducted to determine the location and magnitude of noise, in comparison to existing conditions, that would be generated by the training operations at the proposed FASTC. The noise modeling revealed that compared to existing conditions, additional noise would be generated; however, almost none of the additional noise would extend beyond the boundaries of Fort Pickett. The APE for indirect effects also takes into account the potential visual effects of new facilities for the proposed FASTC to NRHP-listed or -eligible properties that may be adjacent to the four parcels. The indirect effects APE includes both West Entrance Road and Military Road from VA Route 40 in consideration of potential indirect effects caused by a projected increase in traffic along these corridors.

Parcel 21/20

There are no previously inventoried architectural resources in Parcel 21/20. Adjacent to Parcel 21/20 is a parcel for the proposed construction of Classroom R05 at existing Range 8. This parcel was surveyed for the Proposed Action, and two architectural resources were identified. They include Building R0060 (067-0110-0421), a 1962 range target house, and Facility CTR08 (067-0110-0422), a 1977 control tower. Both

⁵ 36 Code of Federal Regulations (CFR) 60.4

⁶ 36 CFR 800.16[d].

resources were recommended as not eligible for inclusion on the NRHP. GSA has initiated consultation with VDHR on this eligibility determination and the results will be included in the Final EIS.

The indirect effects APE includes the Wells House/Commander's Residence (Building 2538), which is approximately 0.6 of a mile south of the south corner of Parcel 21/20. The VAARNG considers the Wells House to be NRHP-eligible until an intensive-level documentation and evaluation of the property can be completed (Smead 2012). The Wells House is located on Lake Road, approximately 1,000 feet west of the intersection of Lake and Trimble Roads.

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 is there 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). No NRHP-eligible historic district is present at Fort Pickett and none of the previously surveyed resources in LRA Parcel 9 are individually eligible for inclusion in the NRHP.

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. VDHR concurred that the four resources are not individually eligible for the NRHP (**Appendix E**).

The APE for indirect effects includes only two buildings—the Officer's Open Dining Facility and a hangar—which have been determined to be eligible for listing on the NRHP. The Officer's Open Dining Facility (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 dining facility 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 airfield as one whole property, with the hangar as the primary resource and the airfield as a contributing secondary resource (Smead 2012).

LRA Parcel 10

The architectural survey undertaken for the Proposed Action identified one architectural resource, a culvert (067-5034), in LRA Parcel 10. Located at the southwest corner of LRA Parcel 10, the culvert carries West Entrance Road over Hurricane Branch. It is a reinforced concrete double box culvert constructed sometime between 1940 and 1974 using a standardized design for box culverts. The structure was recommended not eligible for listing on the NRHP; VDHR concurred (**Appendix E**).

The APE of indirect effects includes West Entrance Road, which borders LRA Parcel 10. The majority of architectural resources on West Entrance Road consist of mid- and late-twentieth century residences. There is also a cemetery and one previously inventoried property, Farley's (067-0183), a circa 1850 I-house with four outbuildings. The Blackstone Historic District (142-0007) is adjacent to the intersection of West Entrance Road and VA Route 40. The district was listed on the Virginia Landmarks Register in February 1990 and on the NRHP in January 1991 for its historical significance as an important regional transportation and commercial center and its architectural significance.

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 regulations⁷, 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 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 was completed by Cardno TEC from October 2011 through March 2012 in the APE, which consists of approximately 1,052 acres located within Parcel 21/20, LRA Parcel 9, and LRA Parcel 10. 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), the Officer's Club Parking Lot (adjacent to LRA Parcel 9), and the Parcel 10 Access Road (adjacent to LRA Parcel 10). Phase I investigations focused on identifying the presence or absence of archaeological sites within the APE. The project 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.

⁷ 36 CFR 800: Protection of Historic Properties

Phase II Evaluations were conducted on five previously identified sites within the project APE: Sites 44NT045, 44NT056, 44NT0207, 44NT0218 and 44NT072. Phase II Evaluations 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 Road and west of Trainfire Road, and is comprised of approximately 567 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**. GSA has initiated consultation with VDHR on this eligibility determination and the results will be included in the Final EIS.

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 at this site indicated the site is disturbed and it was recommended as not eligible for the NRHP. GSA has initiated consultation with VDHR on this eligibility determination and the results will be included in the Final EIS. Sites 44NT0219, 44NT0220, 44NT0221, and 44NT0222 would be avoided by Build Alternatives 1 and 2; 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.

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.

LRA Parcel 9

The LRA Parcel 9 is comprised of approximately 726 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. 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. These sites included: Site 44NT0045, a WWII-era tent camp; Site 44NT0056, an 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.

Phase II investigations were conducted at Site 44NT0045 to determine the eligibility of the site. 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. GSA has initiated consultation with VDHR on this eligibility determination and the results will be included in the Final EIS.

Investigations were completed at Site 44NT0056 to evaluate this site for the NRHP. Test units (TUs) were placed 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 VDHR concurred on this recommendation.

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 VDHR concurred on this recommendation.

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 was 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. GSA has initiated consultation with VDHR on this eligibility determination and the results will be included in the Final EIS. 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 was 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	N/A	Not eligible	No additional work
44NT0072	N/A	Not eligible	No additional work
44NT0207	Golder Site	Not eligible	No additional work

LRA Parcel 10

LRA Parcel 10 is comprised of approximately 135 acres of land. The majority of LRA Parcel 10 is heavily forested and generally slopes down to Hurricane Branch on the west end. Several tributaries of Hurricane Branch flow from east to west through this area. Areas in the northeast and east sides of LRA Parcel 10 have a higher elevation, which slope down to the stream. Several areas of recently planted pine trees appear to have been previously disturbed by logging activities on LRA Parcel 10. Portions of LRA Parcel 10 are also disturbed by the construction of a sewer pipeline and the remains of a wastewater treatment facility.

An access road connecting the Parcel 10 to Military Road was surveyed during the Phase I investigations. Survey of the Parcel 10 Access Road recovered only one artifact, a small stoneware sherd (e.g. historic fragment of pottery); no archaeological sites were discovered as part of the survey.

No previously unknown archaeological sites were discovered in LRA Parcel 10 and no further work was recommended.

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. VDHR has concurred with this determination of potential eligibility in correspondence provide 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 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 (SO₂), nitrogen dioxide (NO₂), ozone (O₃), suspended particulate matter less than or equal to 10 microns in diameter (PM₁₀), 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)⁸ 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. DEQ has adopted the NAAQS, which are presented in **Table 3.2-5**.

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

⁸ 40 CFR Part 50

Table 3.2-5. National Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standards	Secondary Standards
CO	8-hr	9 ppm (10 mg/m ³)	None
	1-hr	35 ppm (40 mg/m ³)	
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/m³ – milligrams per cubic meter; µg/m³ – micrograms per cubic meter

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 sources⁹. 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.

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.

⁹ 40 CFR Part 61 and 63

3.2.2.1 Green House 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 (CO₂), 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 CO₂, 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 CO₂ on an equal-mass basis. The equivalent CO₂ 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 CO₂ equivalent (CO₂e) 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 reporting¹⁰.

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, SO₂, lead, and some particulates, are emitted directly into the atmosphere from emission sources. Secondary pollutants, such as O₃, NO₂, 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 Code of Federal Regulation (CFR) Part 81.143, and comprises several counties, including Brunswick, Lunenburg and Nottoway counties along with associated towns and

¹⁰EO 13423 *Strengthening Federal Environmental, Energy, and Transportation Management*, and EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*

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 pollutants¹¹. Because the study area is in attainment for all criteria pollutants, the CAA General Conformity Rule¹² 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 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 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.

¹¹ 40 CFR 81.347

¹² 40 CFR Parts 51 and 93

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
Jackhammer (50 feet)	130	
Pile Driver (50 feet)	120	Maximum Vocal Effort
Ambulance Siren (100 feet)	110	
Motorcycle (25 feet)	100	Extreme Annoyance/ Discomfort
Power Lawnmower	90	
Farm Tractor (25 feet) ¹	85	Intrusive
Garbage Disposal (3 feet)	80	
Alarm Clock	70	
Vacuum Cleaner (3 feet)	60	Normal Speech
Normal Conversation (5 feet)	50	
Dishwasher	40	Quiet
Light Traffic (100 feet)	30	
Bird Calls (Distant)	20	Just Audible
Soft Whisper (5 feet)	10	
Human Breathing	0	

Source: USACHPPM 2006

Notes: ¹VA 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.

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.

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

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 the 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,

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

transportation, and agriculture is recommended.

- **Zone III:** Noise-sensitive land uses are not recommended in Zone III.

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

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 Disturbance	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

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 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, 28 November 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 parcels 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.

LRA Parcel 10

LRA Parcel 10 is entirely within the LUPZ.

Baseline Complaint Risk Areas

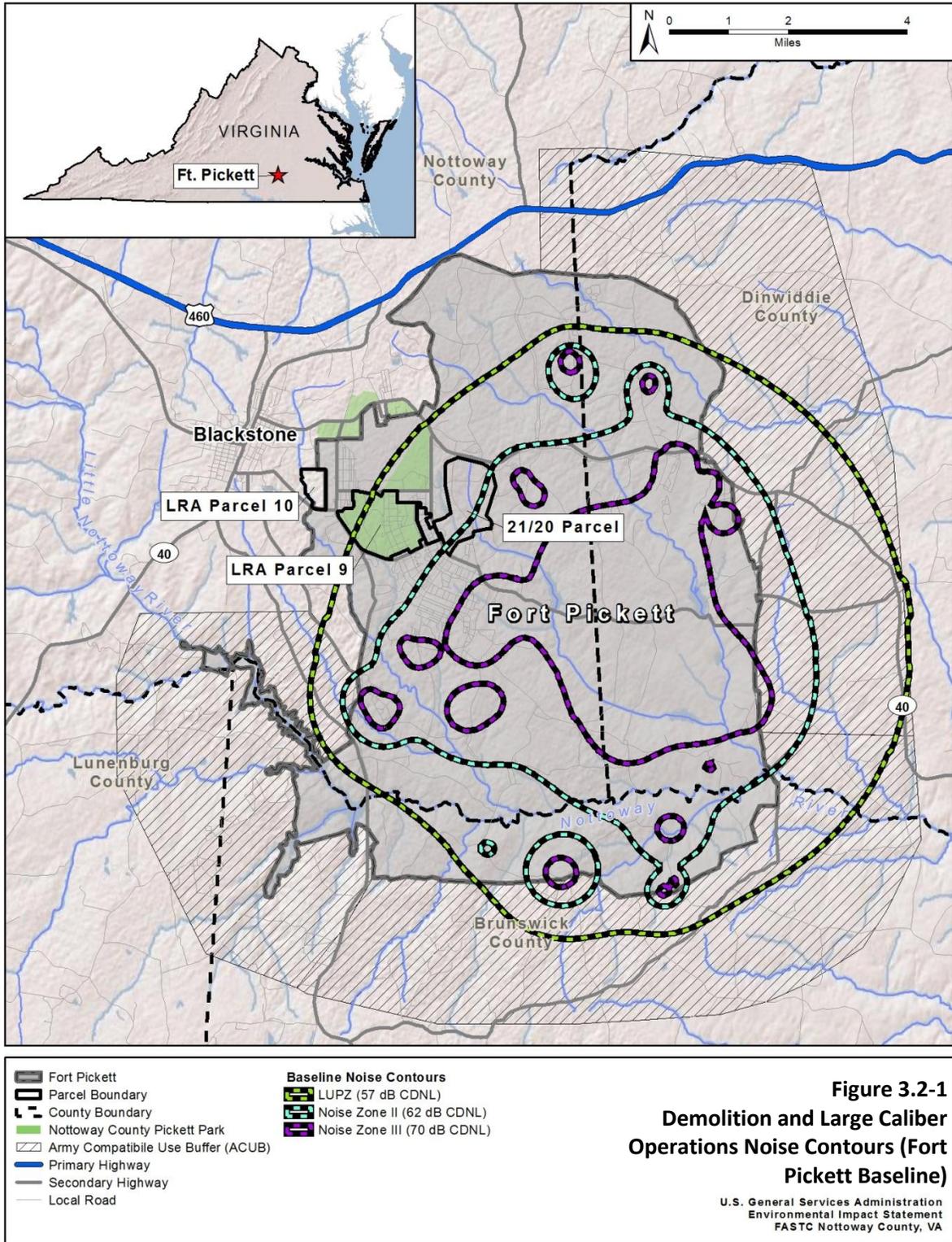
The baseline complaint risk areas for peak noise from demolition and large caliber weapons operations are shown using PK15 (met) contours in **Figure 3.2-2**. **Figure 3.2-3** shows the results for the PK50(met) contours. The following results from USAPHC 2011 were determined for demolition and large 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) at Ranges 15 and 16 and from the artillery firing points near the boundary. The Moderate Complaint Risk area (115 to 130 dB PK15 [met]) extends beyond the 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 Ranges 15 and 16 and from the artillery firing points near the boundary. The Moderate Complaint Risk area (115 to 130 dB PK50 [met]) extends beyond the boundary less than 4,250 feet (0.8 miles).

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.



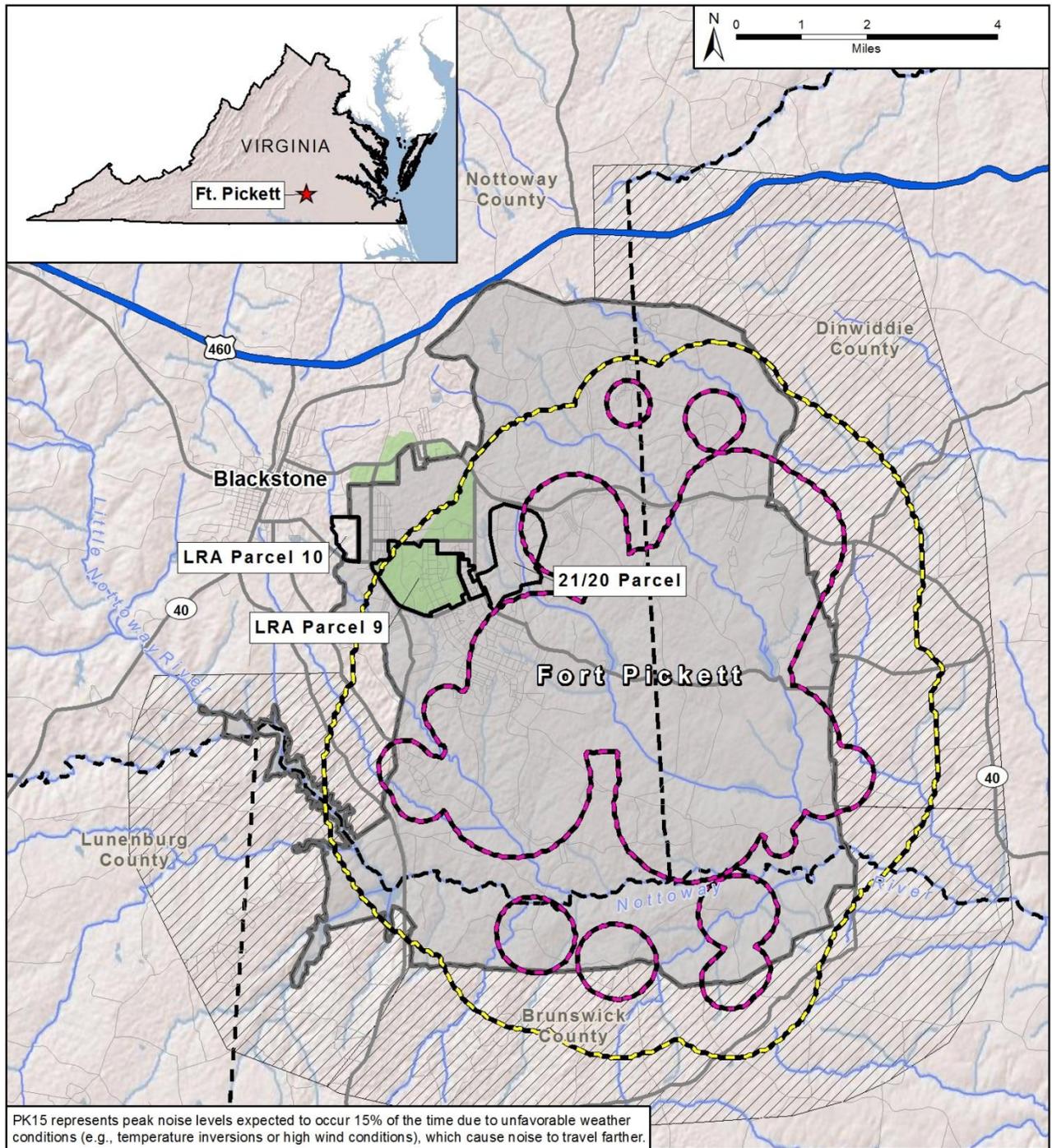
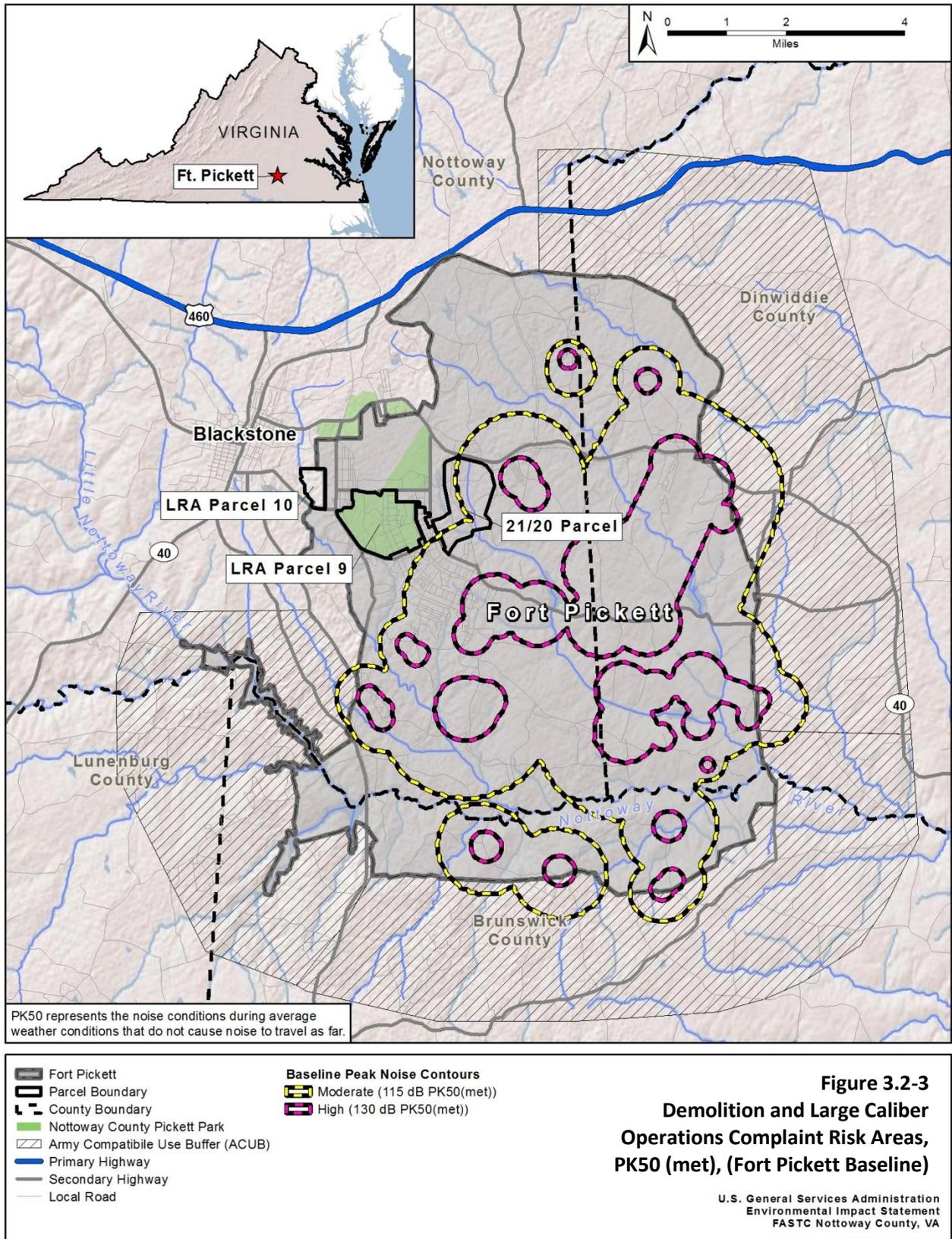


Figure 3.2-2
Demolition and Large Caliber
Operations Complaint Risk Areas,
PK15 (met), (Fort Pickett Baseline)

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



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

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

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 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]).

LRA Parcel 10

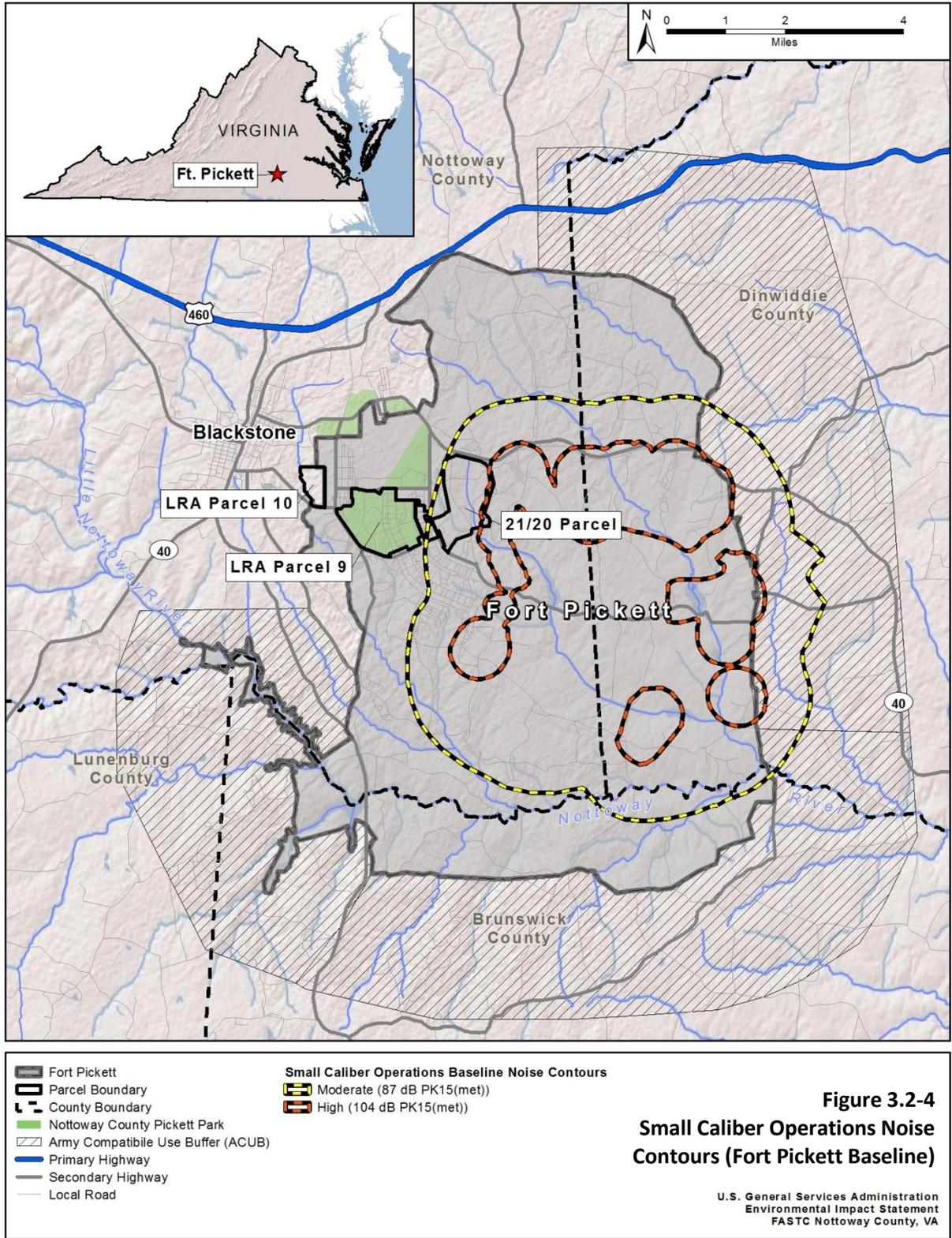
LRA Parcel 10 is outside of the peak noise areas for all baseline Fort Pickett operations.

3.2.3.5 Firing Ranges (Small Caliber Weapons)

Baseline Noise Zones

All existing firing ranges at Fort Picket are outdoor ranges. Per AR 200-1 (U.S. Army 2007), small arms operations for the baseline were 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 Picket, 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.



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 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, 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 (ft)	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 DOL 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 5dB 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.

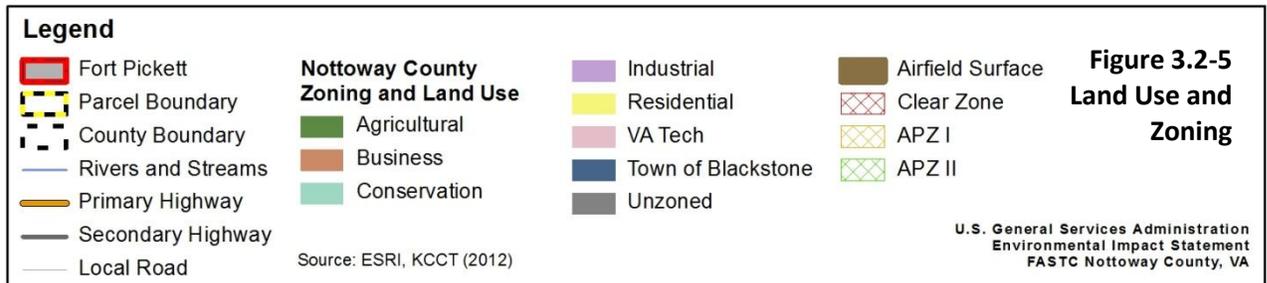
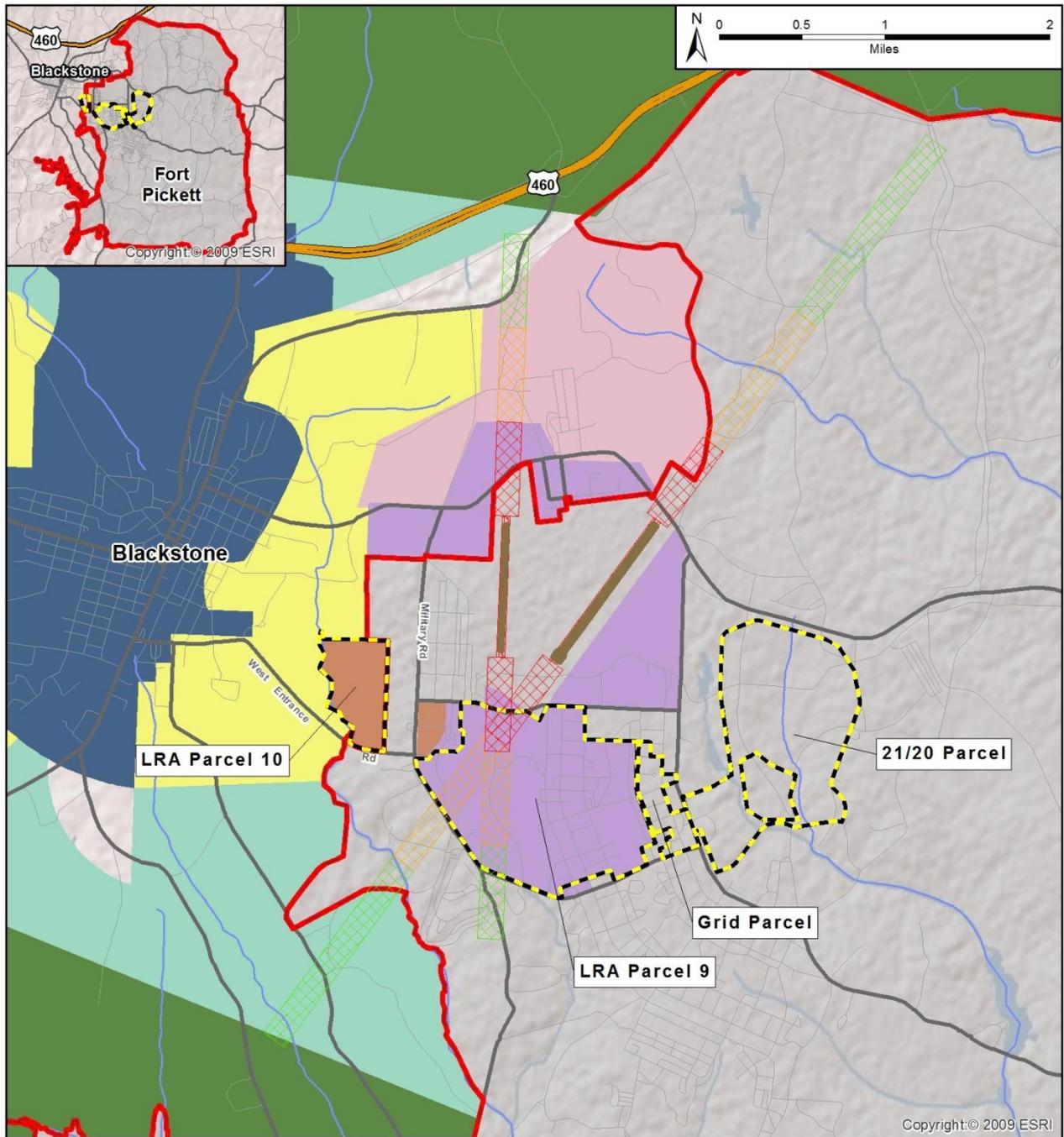
3.2.4 Land Use and Zoning

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. The study area for land use is area surrounding the study parcels within Fort Pickett and adjacent areas of Nottoway County and Parcel 21/20, the Grid Parcel, LRA Parcel 9 and LRA Parcel 10. The land uses for each area are 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 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 more than 4,000 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 use.

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



grains, as well as grazing lands and cattle production (VAANG 2001). The Extension Center's main activity is to grow crops. However, they have plans to add livestock and possibly a Super Dual Auroral Radar Network, or SuperDarn, as part of an international network (Virginia Polytechnic Institute, personal communication August 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. 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 Parcels 9 and 10. 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 the 21/20 parcel 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 in the center 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 DEQ. The landfill area is enclosed by fencing and is not suitable for development. Refer to **Section 3.2.12** 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 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 the 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 7 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 extend over LRA Parcel 9 as shown in **Figure 3.2-5**. Military runway clear zones (CZ) and accident potential zones (APZ) are defined in the DoD Unified Facilities Criteria 3-260-01 (UFC 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.

3.2.4.5 LRA Parcel 10

LRA Parcel 10 is located north of West Entrance Road and west of Military Road and is bounded to the west by Hurricane Branch. The parcel is predominantly forested with mixed patches of deciduous and coniferous trees and is zoned General Business (**Appendix C**, Nottoway County Correspondence 2012). To the north and west of LRA Parcel 10 is zoned residential (R-1) (Nottoway County 2006). Land to the south and directly east of LRA Parcel 10 is part of Fort Pickett and is not zoned.

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

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

density (large land area with a relatively small population).

During the 20th 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-1990's. 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%

Source: Census 1990, Census 2000, 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%
Blackstone¹	3,621	NA	NA	NA	NA	NA
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%

Source: 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: 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	Household s Below Poverty Level	% Households 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: 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

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

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

		Labor Force	Employed	Unemployed	Unemployment Rate ¹
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
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: Bureau of Labor Statistics (BLS) 2011a

Notes: ¹ Changes in the unemployment rate, from 2001 to 2010, are expressed in terms of percentage points.

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 3.2-15 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, 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 admin.	7%	11%	8%	10%	12%	8%	12%	8%	9%

Source: 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	Virginia Department of Military Affairs
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 Pay¹, 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: ¹ 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: 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 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 3.2-22** 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: 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

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: Census 2010b

Notes: ¹ Median monthly owner costs for housing units that have a mortgage.

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.

Housing and Businesses of the Study 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. One of the buildings, Madeline's House, provides services to individuals and families experiencing domestic and sexual abuse and is operated by the Southside Center for Violence Prevention, a non-profit organization. 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 Coop	507 Garnett Avenue	2,500 sf	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
Southside Center for Violence Prevention (Madeline's House)	PO Box 487	8,757 sf	Non-profit Organization

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 12th grade. Blackstone Primary and Kenston Forest School are located approximately one mile from LRA Parcel 10, 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 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 fiscal year 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, FY2008 (\$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
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: Virginia Department of Housing and Community Development (VDHCD) 2009a

Table 3.2-23 shows operating expenditures for counties in the study area during fiscal year 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 fiscal year 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 (\$1,000's)

	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
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 fiscal year 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 thousand).

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

	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 proposed site 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 meaningfully higher percentage of the population consisting of racial minorities – defined as black or African American, Hispanic or Latino, Asian, American Indian, Native Alaskan, or Native Hawaiian or Other Pacific Islander – 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.

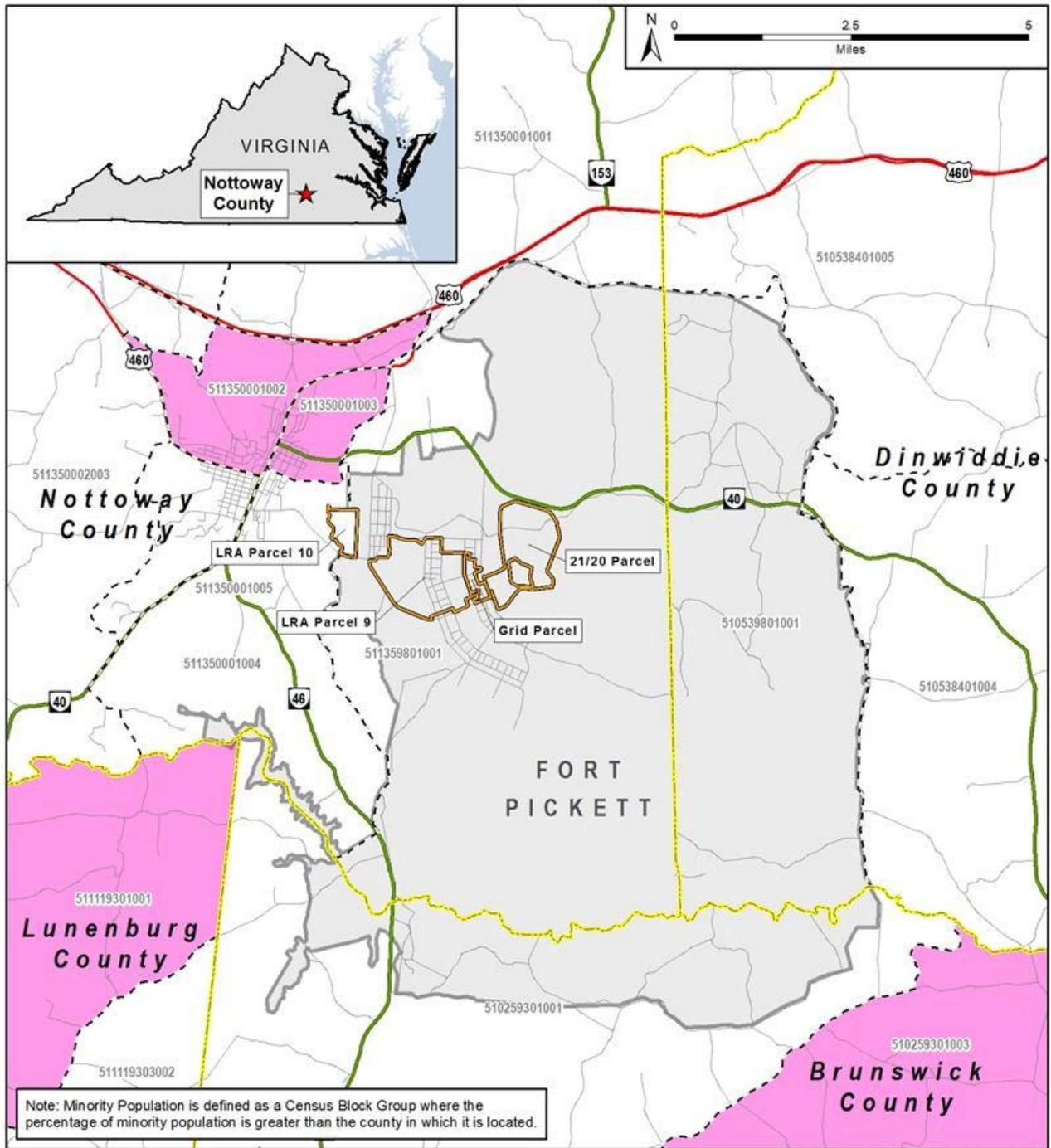
Table 3.2-25. Minority Population Status for Census Block Groups in the Environmental Justice Study

Block Group Number	Block Group Name	Minority % of Population
<u>Brunswick County</u>		
510259301001	Block Group 1, Census Tract 9301	44.5%
510259301003	Block Group 3, Census Tract 9301	65.9%
	County Average	59.8%
<u>Dinwiddie County</u>		
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%
<u>Lunenburg County</u>		
51119301001	Block Group 1, Census Tract 9301	46.7%
51119303002	Block Group 2, Census Tract 9303	36.6%
	County Average	39.3%
<u>Nottoway County</u>		
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: 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 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 0.36 miles from LRA Parcel 10, 1 mile from LRA Parcel 9, and 2.3 miles from Parcel 21/20. A second minority population is Census Block Group 51119301001 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), KCCT (2012)

**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
<u>Brunswick County</u>		
510259301001	Block Group 1, Census Tract 9301	30.0%
510259301003	Block Group 3, Census Tract 9301	15.0%
	County Average	21.0%
<u>Dinwiddie County</u>		
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%
<u>Lunenburg County</u>		
511119301001	Block Group 1, Census Tract 9301	11.6%
511119303002	Block Group 2, Census Tract 9303	18.0%
	County Average	16.3%
<u>Nottoway County</u>		
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: Census 2010b

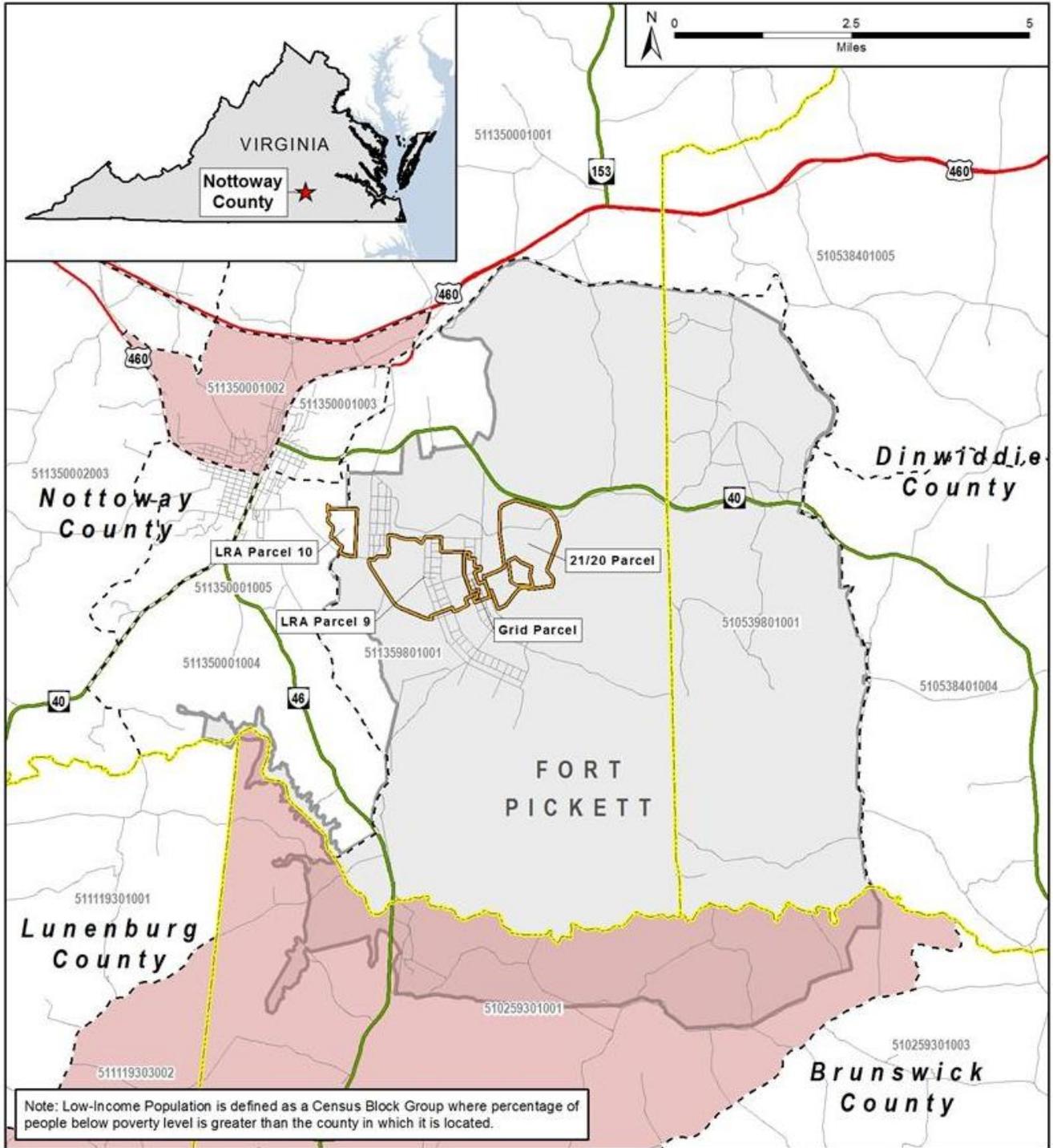
Note: **Bold text** indicates environmental justice low income population

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 1 mile from LRA Parcel 10 and 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 one mile from the LRA Parcel 10, two miles from LRA Parcel 9, and three miles from 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-K 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.



Note: Low-Income Population is defined as a Census Block Group where percentage of people below poverty level is greater than the county in which it is located.

Legend

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

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

Figure 3.2-7 Environmental Justice Low Income Areas

U.S. General Services Administration
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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 that surround and provide access to the proposed site parcels.

3.2.6.1 Traffic

The study environment for traffic includes roadways that would be used to access the proposed FASTC facility in Nottoway County, the town of Blackstone and Fort Pickett. This section addresses local traffic circulation and traffic conditions. A Traffic Impact Analysis was prepared for this Draft EIS and is provided in **Appendix H**.

Local and Regional Traffic Circulation

Major roadways servicing Fort Pickett and the Town of Blackstone include Virginia Primary Route 40 (VA Route 40), US Route 460, US Route 460 Business, Virginia Secondary Route 643 643, 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.
- US Route 460 is a four-lane divided highway classified as a rural principal arterial.
- US Route 460 Business is a two lane, undivided roadway classified as a rural minor arterial.
- SR 643 is a two-lane undivided road within the study area and is classified as a rural major collector
- SR 750 is a two-lane undivided road within the study area and has no functional classification.

Local roads include:

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

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Directional Turning Movement Count Locations:

1. East Colonial Trail Highway (US Route 460) at Cox Road (US Route 460 Business)/Yellowbird Road (SR 609)
2. Cox Road (US Route 460 Business) at Military Road (SR 750)
3. Military Road (SR 750) at Darvills Road (VA Route 40)
4. Military Road at West 10th Street
5. Military Road at West Entrance Road (SR 643)
6. Military Road at Garnett Avenue (SR 756)
7. Military Road at Dearing Avenue
8. West 10th Street (SR 753) at Warehouse Street
9. West Entrance Road (SR 643)/8th Street at South Main Street (VA Route 40/US Route 460 Business)
10. Church Street (US Route 460 Business) at South Main Street (VA Route 40/US Route 460 Business)
11. Dinwiddie Avenue (VA Route 40) at Main Street (VA Route 40/US Route 460 Business)

NORTH

-  Proposed FASTC Facilities (LRA Parcel 10 and Grid Parcel apply only to Build Alternative 2)
-  Existing Security Gate (Fort Pickett Access)
-  Traffic Study Intersection
-  Directional Turning Movement Count Location
-  48-Hour Tube Count Location

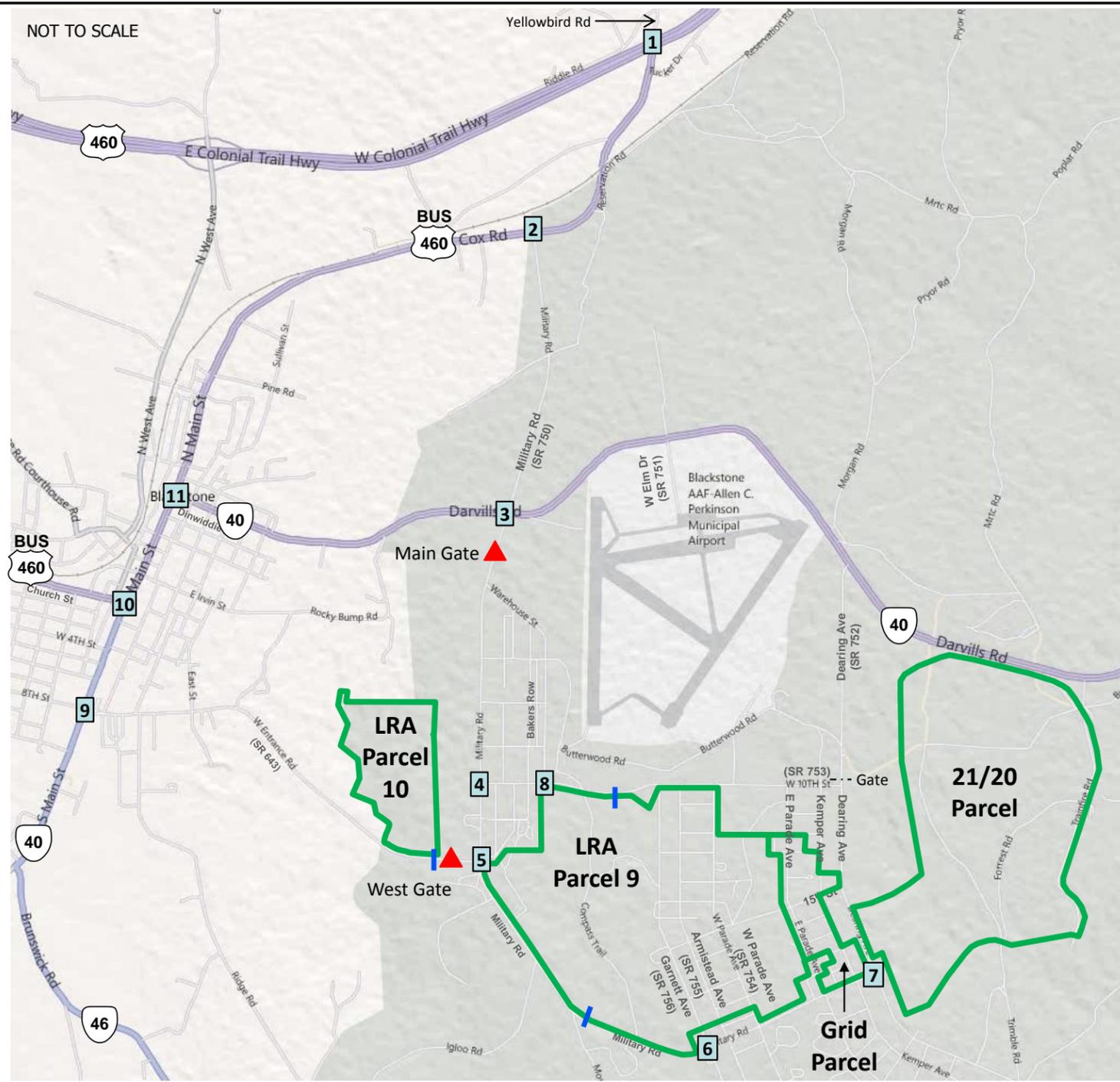


Figure 3.2-8
Roadways and Study Intersections

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



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The roadways within the study area are maintained by three different agencies; 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, as well as future LOS which are discussed in further detail 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 TRB’s “Highway Capacity Manual 2000”

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 area includes the following intersections:

- East Colonial Trail (US Route 460)/Cox Road (US Route 460 Business) and Yellowbird Road (US Route 609)
- Cox Road (US Route 460 Business)/Military Road (SR 750)
- Military Road (SR 750)/Darvills Road (VA Route 40)
- Military Road /West 10th Street
- Military Road/West Entrance Road

- Military Road/Garnett Avenue (SR 756)
- Military Road/Dearing Avenue
- West 10th Street (SR 753)/Warehouse Street
- West Entrance Road (SR 643)/8th Street at South Main Street (VA Route 40/US Route 460 Business)
- Church Street (US Route 460 Business)/South Main Street (VA Route 40/US Route 460)
- Dinwiddie Avenue (VA Route 40)/Main Street (VA Route 40/US Route 460 Business)

Figure 3.2-8 depicts the locations of each intersection studied in the traffic impact analysis. Turning movement counts were conducted at these intersections on Tuesday, April 24, and Wednesday, April 25, 2012 during peak traffic hours of 6:00 a.m. – 9:00 a.m. and 3:00 p.m. – 6:00 p.m. The results of the analysis of existing 2012 traffic show the following:

- The three signalized intersections within the town of Blackstone operate at an overall LOS C or better during the a.m. and p.m. peak hours.
- At the signalized intersection of West Entrance Road (SR 643) and 8th Street at South Main Street (VA Route 40/US Route 460 Business), the westbound left turn-through movement is operating at LOS D in the a.m. and the eastbound left, through and right turn movements are operating at LOS D in the p.m.
- All of the unsignalized movements operate at LOS B or better during the a.m. and p.m. peak hours.

All intersections are considered to be operating at acceptable levels of service in 2012.

Planned Improvements

Within the study area there is one Virginia Department of Transportation (VDOT) planned improvement, to replace the existing bridge on Cox Road over the Norfolk-Southern railroad tracks. This replacement is anticipated to occur in 2014. 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

Currently, the Main Gate and the West Gate each have two lanes and vehicles per hour per lane are <375 during both a.m. and p.m. peak hours. As a result there is currently 1 guard assigned to each lane.

Future Projected Traffic Conditions Without the Proposed Action

Traffic conditions for 2012 were projected for 2017 and 2020 factoring is normal annual traffic growth that would occur without the proposed FASTC project, referred to as the “Future No Build” condition. This allows a comparison with traffic conditions with the Proposed Action to determine the effects of the project in the future.

The results for projected traffic for the 2017 and 2020 No Build are as follows:

- The three signalized intersections within the town of Blackstone would continue to operate at an overall LOS C or better during the a.m. and p.m. peak hours.
- At the signalized intersection of West Entrance Road (SR 643) and 8th Street at South Main Street (VA Route 40/US Route 460 Business), the westbound left turn-through movement would continue to operate at LOS D in the a.m. and the eastbound left, through and right turn movements would continue to operate at LOS D in the p.m.

All of the unsignalized movements would operate at LOS B or better during the a.m. and p.m. peak hours.

- Darvills Road (VA Route 40) at Military Road (SR 750) will require an extended minimum 200-foot right turn lane with minimum 200-foot taper to accommodate eastbound right turns in 2017 and 2020, in accordance with the VDOT Road Design Manual.

Without the Proposed Action, in 2017 and 2020 the study intersections would operate the same acceptable levels they operate at in 2012, but Darvills Road will require an extended turn 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 11 stops around the town of Blackstone these include Downtown, Patterson and Harris, Carver and Tucker, Cralle and Northwest, Pinewood Apartments, Hardy and Falls, Methodist Center, Food Lion, Walmart and Lester and West entrance. 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 the Town of 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, north of LRA Parcel 9 and east of LRA Parcel 10.

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 of the individual parcels, such as forests, lakes and streams. 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.

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, Grid Parcel, LRA Parcel 9 and LRA Parcel 10. Recreational resources within the study areas are described individually.

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.

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
- LRA Parcel 9 contains tennis courts and a ball field

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.

Approximately 35,000 acres are currently open to recreational hunting and fishing on Fort Pickett, including LRA Parcel 9.

Parcel 21/20

Fort Pickett allows recreational hunting to occur on Parcel 21/20 year round during state specified open seasons. All 567 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 W. 15 ½ Street.

A public RV campground is present just outside the northwest border of the LRA parcel. The campground is equipped with electrical and water/sewer hookups for 25 campsites.

LRA Parcel 10

LRA parcel 10 is primarily forested and does not support any organized recreational uses. The parcel is not fenced and is easily accessible; however, Nottoway County has not designated the parcel for hunting or other recreational activities.

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 Draft EIS include water supply, wastewater, electrical supply, telecommunications, and solid waste management.

The study area for utilities includes the four 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 municipal/county perspective and then the available utilities are described individually for each parcel. Solid waste is managed in a similar fashion for the four study area parcels 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 DEQ 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 plant can be enlarged but there are no plans to do so until demand requires it (Nottoway County 2010).

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.

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 514 mgd (Blackstone 2012). In 2009, the maximum single day withdrawal was 1.920 mgd (Nottoway County 2010). According

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 waste water 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

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).

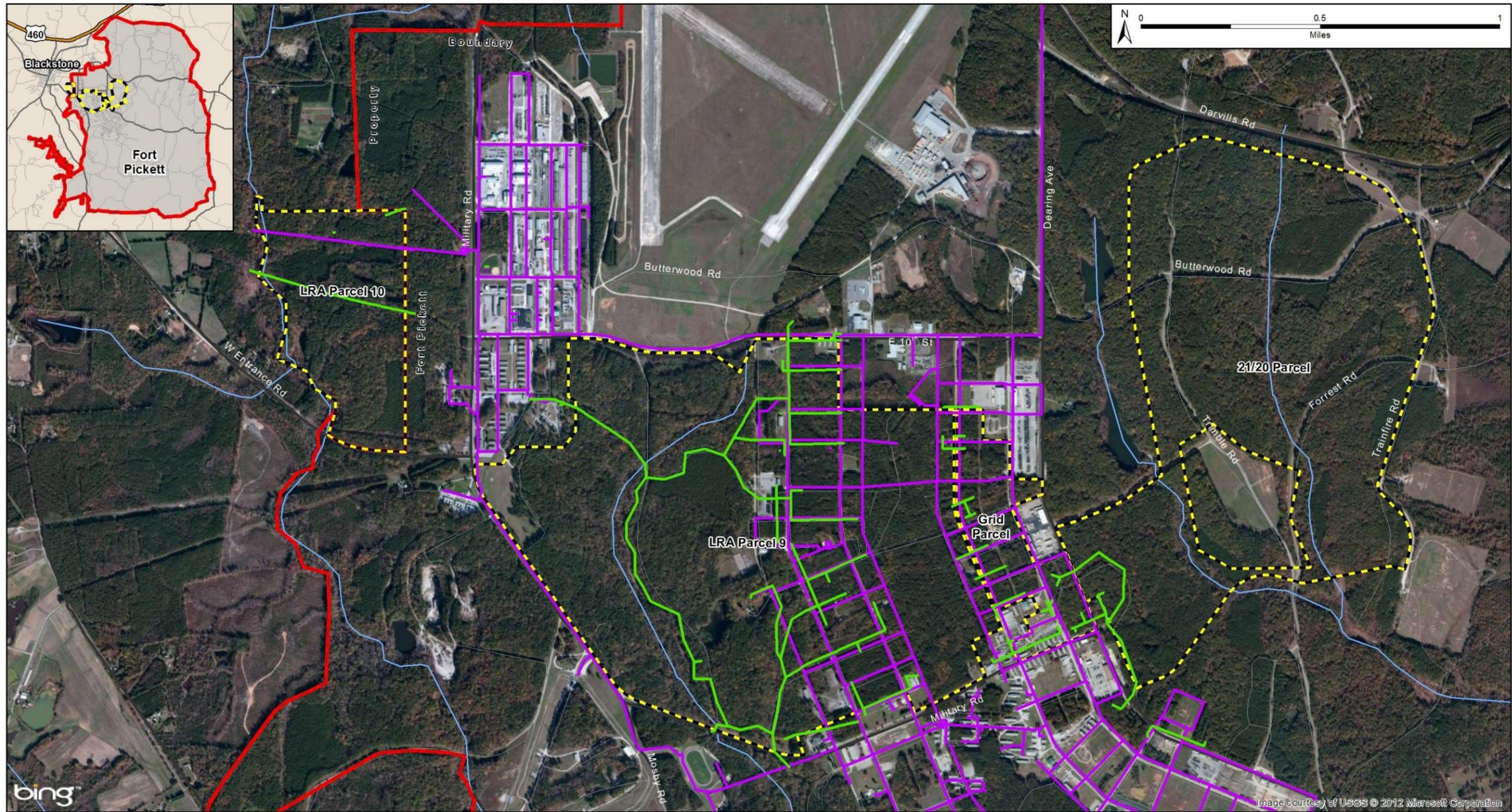
Parcel 21/20

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 Avenue. Lines also run east/west along Military, 18 ½th, 18th, 17th, 16th, 15th, and 14th Streets.

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- Legend**
- | | | |
|--------------------|-------------------|------------------|
| Fort Pickett | Primary Highway | Utilities |
| Site Boundary | Secondary Highway | Sewer Lines |
| Rivers and Streams | Local Road | Water Lines |

Source: ESRI, KCCT (2012), Transystems (2012)

Figure 3.2-9
Potable Water and Sewer

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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 Road and West 15 ½ Street (**Figure 3.2-9**).

LRA Parcel 10

Potable water distribution lines occur along the roadways bounding LRA Parcel 10 to the east. LRA Parcel 10 has a potable water easement that runs across its northern end. Distribution piping ranges in size from six to 16 inches in diameter (**Figure 3.2-9**).

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 VPDES 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 with a high discharge of 1.822 mgd in March of 2012 (Blackstone 2012). 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 relined. The town of Blackstone is required to perform upgrades to the system under a consent order with DEQ 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 Ave 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 north/south along Kemper and between Kemper and Dearing Ave. 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**).

LRA Parcel 10

The wastewater collection system on LRA Parcel 10 generally follows the existing streets to the east (Military Road) and south (West Entrance Road). The collection system extends into the parcel at West 10th Street (**Figure 3.2-9**). The wastewater line and its easement run west through the middle of the parcel.

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 the LRA parcel at the intersection of West Entrance and Military Roads. This substation services the installation through above ground radial lines (VDMA 2011). Southside Electric Cooperative does not provide power distribution to the 21/20 Parcel. Power at this location is distributed by Fort Pickett Department of Public Works. 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 (Southside Electrical Coop 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 Road (**Figure 3.2-10**). These mains are owned by Southside Electric Cooperative, and the distribution system on the parcel itself is currently owned by VAARNG and maintained by Fort Pickett Department of Public Works.

Grid Parcel

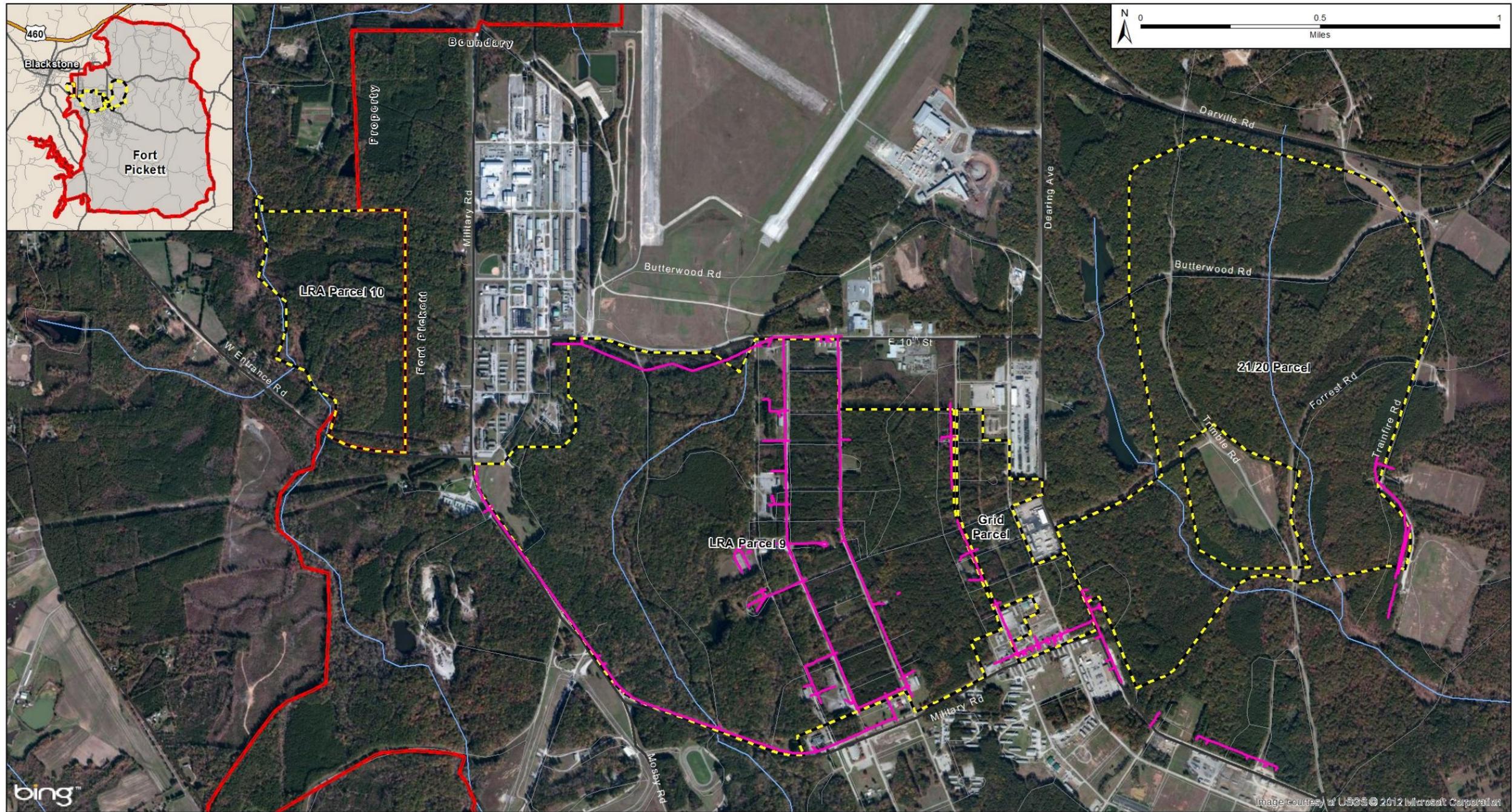
There are several electrical lines on the Grid Parcel. They are evenly spread on the parcel running along most of the roads.

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, W. Parade and E. 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 general follows the street grid in a north-south direction (**Figure 3.2-10**).

LRA Parcel 10

The electrical distribution system on LRA Parcel 10 generally follows the existing streets to the east (Military Road) and south (W. Entrance Road) (**Figure 3.2-10**). Because the parcel is undeveloped, the system does not extend into the parcel; however, there is a power line easement that runs along the southern portion of the easement.



Legend		
 Fort Pickett	 Primary Highway	Utilities
 Site Boundary	 Secondary Highway	 Electrical Lines
 Rivers and Streams	 Local Road	

Source: ESRI, KCCT (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 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 E. Parade Avenue and E. 13th Street.

Parcel 21/20

Due to the remote nature of Parcel 21/20, telecommunication service does not extend onto the parcel. Limited service is available along Dearing Road outside of the parcel boundary.

Grid Parcel

Telecommunication service on the Grid Parcel generally follows Kemper. There are several lines that run from Kemper to the west along 18th, 16th and between 13th and 12th.

LRA Parcel 9

Telecommunication service on LRA Parcel 9 is concentrated on the eastern half of the parcel and is primarily located along Garnett, Armistead and W. 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.

LRA Parcel 10

Telecommunication service on LRA Parcel 10 generally follows the existing streets to the east (Military Road) and south (West Entrance Road). Because the parcel is undeveloped, the system does not extend into the parcel.

3.2.8.5 Solid Waste

EO 12873 requires all federal facilities to recycle. The Fort Pickett recycling facility is located at Bldg 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. 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 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.

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. The study area for public health and safety includes the study area parcels, town of Blackstone, and Nottoway County, in which the parcels are located.

Public Health and Safety

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

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 Fire and emergency medical services (EMS), and Brunswick Rescue, and provides emergency assistance when requested.

Fort Pickett provides fire, 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 (personal communication, 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 (one of these is scheduled to be replaced in July 2013), 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 thru 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 effects 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 24 hours a day seven days a week law enforcement, patrols, serves papers, and conducts criminal investigations among many of its other services (County of Nottoway Sheriff's Office, 2010). 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 funded. In addition to the officers, the town of Blackstone police department employs an animal control officer, 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 2012).

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 Commonwealth of Virginia 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 Operation 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.

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 (UXO)

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 Base Realignment and Closure action and subsequent sale of Fort Pickett property to LRA (Woodard-Clyde 1997). According to the report, no areas within the Grid Parcel, LRA Parcel 9 or LRA Parcel 10 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

Currently, various activities occur in the study area that results in the creation of noise. These activities include (depending on the location) aviation operations, range operations, traffic, construction, and general industrial activities and are described in detail in **Section 3.2.3**. These activities are generally 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 U.S. 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 aboveground storage tanks (USTs and ASTs), which have the potential to leak hazardous materials, have been identified on LRA Parcel 9 and the Grid Parcel. These ASTs/USTs area described in detail in **Section 3.2.12**.

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 (Pub. L. 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 DEQ 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 accustomed to seeing as a general part of the landscape.

Aesthetic and Visual Resources

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

3.2.10.1 General Settings

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

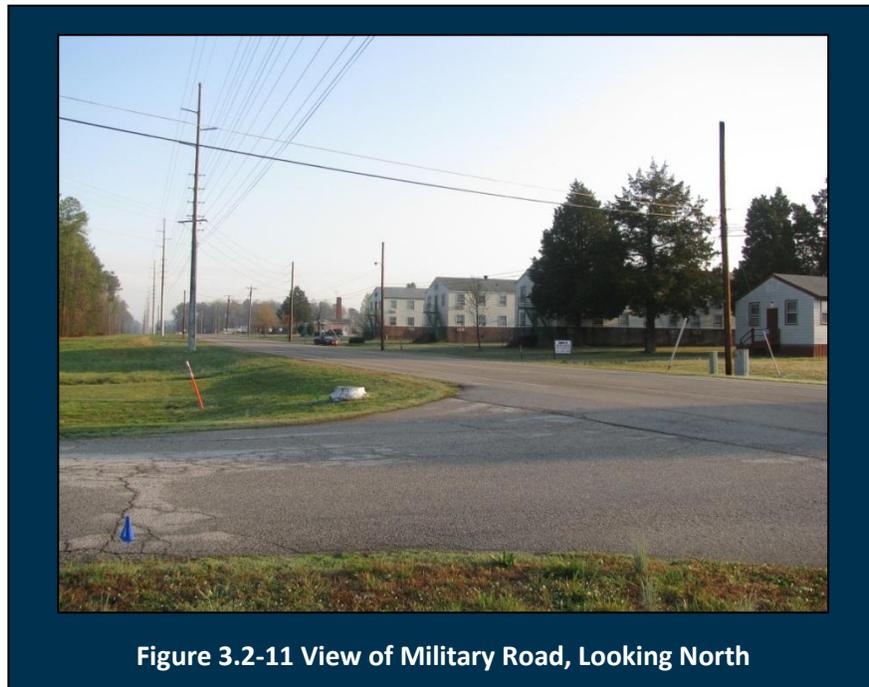
contains most of the existing buildings and landscaped areas. Many of the buildings at Fort Pickett have been in existence since the mid-1940's and are in varying condition.

3.2.10.2 Access Road

There are two main access corridors to the proposed project site: Military Road and West Entrance Road.

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 Road within the boundaries of Fort Pickett. The road forms the west and southern boundary of LRA Parcel 9 and the eastern boundary of LRA Parcel 10. 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**).



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 is the south boundary of LRA Parcel 10, located just west of 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 ft 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 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

Parcel 21/20

Parcel 21/20 is located in the northwest quarter of Fort Pickett, east of LRA Parcel 9. It encompasses approximately 567 acres of undeveloped land. The topography of Parcel 21/20 is similar to that of Parcel 10, with slight hills rising from creek beds (**Figure 3.2-13**). Gravel and dirt roads provide access to the range areas located within the parcel. A few 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.

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 1940's, are located from Military Road northward to East 18th Street.



Figure 3.2-13 View of Stream and Slope in Parcel 21/20, Looking East

LRA Parcel 9

LRA Parcel 9 is located in the northwest quarter of the Fort Pickett Boundary and encompasses 726 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 3.2-14**). 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 1940's 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 (**Figure 3.2-14**). 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 3.2-14 View of West Parade Avenue, Looking South

LRA Parcel 10

LRA Parcel 10 abuts a portion of the west boundary of Fort Pickett. It encompasses approximately 135 acres of land. The parcel is bounded on the west by a creek, Hurricane Branch, on the east by Military Road and on the south by West Entrance Road. It is undeveloped land covered in second-growth forest (**Figure 3.2-15**). Topographically, the parcel is more varied than LRA Parcel 9. It has slight hills, rising from the creek and road bed. A concrete culvert spans Hurricane Branch about one quarter of a mile west of the West Gate of Fort Pickett.



**Figure 3.2-15 View of LRA Parcel 10,
Looking Southwest**

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 have been defined as any substance that, because of its quantity, concentration, 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 1976¹³ and the Hazardous and Solid Waste Amendments of 1984¹⁴ define hazardous waste as a solid waste, or combination of wastes that, due to

¹³ 40 CFR §§240-280

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 waste¹⁵.

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 establish a series of programs for the cleanup of hazardous waste disposal and spill sites nationwide. CERCLA and SARA also establish cleanup programs for inactive and abandoned hazardous waste sites and are administered by the USEPA.

Installation Restoration Program

The IRP is a comprehensive program to identify, investigate and clean up hazardous substances, pollutants, contaminants, and petroleum, oil, 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 where UXO, DMM, or MC are known or suspected 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 (USAEC 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 2012b). 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 a hazardous air pollutant by the USEPA, in accordance with Section 112 of

¹⁴ 40 CFR §260

¹⁵ 40 CFR §261.4[b]

the CAA (40 CFR 61). Base Realignment and Closure Act policy defines an ACM to be a hazard when it is friable and 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 lead-based paint. 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 ($\mu\text{g}/\text{ft}^2$)
- Lead in interior window sill dust wipe samples equals or exceeds 250 $\mu\text{g}/\text{ft}^2$
- Lead in window trough samples equals or exceeds 400 $\mu\text{g}/\text{ft}^2$
- 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 the 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 were performed in accordance with ASTM standard E-1527-05 on all of the FASTC parcels to determine whether recognized environmental conditions exist that indicate the presence or likely presence of hazardous substances or petroleum products or whether existing conditions indicate an existing release, a past release, or a material threat of a release of hazardous substances or petroleum products into structures on the properties or into the ground, ground water, or surface water of the properties. Where recognized environmental conditions were found, subsequent Phase II environmental site

assessments were performed to determine whether contamination was present and whether contaminant levels required remedial action.

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.

Underground Pipeline: The Phase I Environmental Site Assessment (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 1940's 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. Three of these locations appeared to be on the Parcel 21/20 western boundary. Available records do not indicate that follow-up actions have been taken at these locations 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 2010).

Soils and groundwater investigation of the pipeline on Parcel 21/20 was not permitted by VAARNG. Therefore, it is possible that residual gasoline contamination is present at some locations along the pipeline on Parcel 21/20. The Phase II ESA recommends further investigation, and GSA would conduct such investigation to determine if contamination is present (Schnabel 2012b).

Trimble Road Landfill: A closed landfill located on Trimble Road in the central area of Parcel 20/21, adjacent to the study area, is currently in a monitoring program. The landfill is permitted through DEQ as Solid Waste Permit SWP-333; however, DEQ 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 DEQ, additional monitoring wells have recently been installed in a clustered arrangement to monitor the expansion of the plume. To date, DEQ 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 (PCE), vinyl chloride, and trichloroethylene (TCE). 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 ft outside the boundary have exceeded the Groundwater Protection Standards (Schnabel 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 2012b).

Dearing Road Landfill: This landfill is an older, closed landfill located just outside of the southern boundary of Parcel 21/20. 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 DEQ. 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 the 21/20 parcel that it would not be pose a health risk to FASTC operations.

Potential Open Burn/Open Disposal Area: The Phase I ESA identified a small “potential ordnance/explosives burn/disposal” area located at the northernmost portion of Parcel 21/20. 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.

To date, soils and groundwater investigations of this site have not been permitted by VAARNG. If the area was used to burn ordnance/ explosives, then some hazardous constituents could remain in the soil or groundwater. Such constituents could be a concern if soil excavation or groundwater withdrawal in the area were to occur. 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 2012b).

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 is 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-1970's and in 2012.

Hazardous Materials and Wastes

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 the Grid Parcel nor are there any RCRA non-generators or hazardous waste treatment, storage and disposal facilities.

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 a letter dated February 1, 2000, the USEPA recommended that the pipeline be further investigated to delineate all areas of contamination. GSA would conduct investigations of the pipeline to identify any potential areas of contamination prior to the start of construction activities. Any areas thought to be contaminated would be tested and remediated, if necessary, in accordance with applicable regulations.

USTs/ASTs: All of the approximately 134 buildings sited on the Grid Parcel were equipped with USTs used for the storage of heating oil. In the 1970s, buildings on the Grid Parcel were demolished except for several buildings along the southern boundary. 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 2012c).

Information obtained as part of the Phase I indicated that petroleum releases had occurred at the USTs formerly located at Buildings 1306, 1319 and 1351 (on the Grid Parcel) and at Buildings 574, 761, 1307 and 1311 (adjacent to the Grid Parcel). As a result, these areas were identified as being potentially contaminated with petroleum. Additionally, the lack of closure documentation for many of the former USTs on the site presents a substantial data gap (Schnabel 2012c). GSA would conduct investigations to characterize the known areas of UST releases to determine whether contamination is present within the proposed FASTSC construction area prior to the start of construction activities.

The Grid Parcel currently has no ASTs, after demolition of the existing buildings was completed in 2012, and the number of former onsite ASTs is unknown. Many of the adjacent properties are currently improved with heating oil ASTs. AST closure reports were available for three on-site ASTs and three adjacent ASTs. Based on the available AST closure reports, petroleum contamination ranging from 14.2 to 2,940 mg/kg was detected in the on-site surficial soil at Building 1319. Based on these findings, the former on-site AST located at Building 1319 was identified as a contamination concern in the 2012 Phase I ESA. Low-level residual petroleum from a former AST was also identified at Building 1351 and considered a data gap (Schnabel 2012c). GSA intends to fully characterize the known areas of AST releases in order to determine whether contamination is present within the proposed FASTSC construction area prior to the start of construction activities. Any soil suspected to be contaminated would be tested and remediated, if necessary, in accordance with applicable regulations. Additional exploratory samples would also be collected based on a review of historical photos and assessment of site conditions to identify other potentially contaminated soils associated with undocumented ASTs within the proposed FASTSC construction area.

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). 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 is considered a recognized environmental condition as defined in ASTM 1527-05.

IRP and MMRP Sites: No active IRP or MMRP 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 Base Realignment and Closure (BRAC) and that all restoration remedies were in place at Fort Picket.

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/ACM and no documentation of their removal or disposal was available for review, site soils may contain these substances and present a Business Environmental Risk.

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 of the building at 326 Armistead Avenue (Schnabel 2010).

Underground Storage Tanks (USTs)/Above Ground Storage Tanks (ASTs): Two 10,000-gallon USTs and several ASTs are documented as being present on LRA Parcel 9 (**Table 3.2-29**) (Schnabel 2010). DEQ does not have any files associated with these two addresses and the USTs appear to precede the date of property transfer to Nottoway County.

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	Unknown	Unknown
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)	UST	Home Heating Oil (1,000 gal)
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		
1006	Vacant		

Source: Schnable 2010.

Notes: ¹Home heating oil AST has underground piping

The two existing USTs at 553 Garnett Avenue and 697 Garnett 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 U.S. EPA. 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 EPA approved laboratory for analysis and the test results for all soil and groundwater samples were “non-detect” for all analytes (Schnabel 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 2012b). GSA intends to conduct further investigation to determine if there are potentially contaminated soils associated with undocumented USTs within the proposed FASTC construction area prior to the start of construction activities.

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 Ave and were believed to contain soils associated with the environmental investigation conducted at site EBS-115. It is unknown if the contents of the drums would be classified as hazardous waste.

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. 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 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 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 US EPA Regional Screening Levels, except for arsenic; however the arsenic levels of 07 to 3.6 mg/kg 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 Regional Screening Levels (Schnabel 2012a).

Although not detected in this Phase II investigation, it is possible that residual gasoline contamination is present at some locations along the pipeline on LRA Parcel 9 (Schnabel 2012a). GSA intends to fully characterize the pipeline in order to identify any potential areas of contamination prior to the start of construction activities. Any areas thought to be contaminated would be tested and remediated, if necessary, in accordance with applicable regulations.

Environmental Baseline Survey Site 13 (EBS 13): Based on a July 2010 document, Final Five Year Review for EBS 13 (Tetrattech 2010), remediation at a former Salvage Yard in the northern border of LRA Parcel 9 has been successful in removing contaminants from the soil and groundwater. EBS 13 was used as a recycling facility from the late 1940’s through the 1960’s. The facility stored used automobiles, metal

containers, crates, and debris. During the late 1960's and early 1970's 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 (LUCs) were implemented to address the remaining contaminants that were not treated by remediation. The LUCs prohibit the disturbance of soils in a 4 acre portion of the site thereby blocking human exposure to contaminated groundwater. The LUCs also prevent exposure to materials potentially presenting an explosive hazard (MPPEH), which are also suspected to be in the area. Plans for development would need to be made consistent with these limitations.

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. 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, methyl tertiary butyl ether (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 LUCs in place for BCT22. According to deeds for this parcel, the U.S. Army has retained responsibility for environmental contamination of the property (Schnabel 2010).

Ground water 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. The results of the chemical analyses of these samples were compared with the most recent sampling performed by Weston (Weston Solutions 2009 in Schnabel 2012a). The primary chemicals of concern from the 2009 sampling were benzene, ethylbenzene, and naphthalene, which were above the USEPA Regional Screening Levels a number of the wells in 2009. MTBE was also detected at a level above the USEPA screening levels (Schnabel 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 µg/L. Carbon tetrachloride increased from non-detect to 2.2 µg/L. Benzene, ethylbenzene, naphthalene, and MTBE remained non-detect.
- In MW-14, located just inside the LRA Parcel 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 this 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 the LRA Parcel at MW-14. However, the MTBE concentration in MW-14 showed a slight increase from 2009 to 2012.

The continued presence of MTBE in MW-14 confirms that the BCT-22 plume has entered LRA Parcel 9. Without current downgradient sampling data, the extent of the plume is not known. However, since no groundwater wells or buildings are proposed in the areas downgradient of the plume, associated health

risks are considered to be low. GSA intends to further investigate the extent of the plume via groundwater sampling.

Existing Gasoline Station: A gas station is located on the southern boundary of LRA Parcel 9 approximately 400 ft east of the East Parade Avenue and Military Road intersection. The gas station is reportedly not operational; however, USTs may still be present on the site. DEQ was contacted on December 10, 2010 for information regarding the gasoline station USTs and no files were found. (Schnabel 2010). Since it is unknown whether the gasoline station has had any impact on site conditions on LRA Parcel 9, GSA intends to further investigate the potential for soil and groundwater contamination associated with this site in order to determine whether off-site releases have affected site conditions on LRA Parcel 9.

IRP and MMRP Sites: No active IRP or MMRP 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 that the Army would continue to operate and maintain monitoring systems at EBS 13 (Former Salvage Yard).

Toxic Substances

Lead Based Paint: 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 (Buildings NW100, SW101, 310, 480, 580, 1284, 2538 and 4072) were constructed in 1942 and 1943. Eight of the nine buildings surveyed had LBP sample test results that exceeded 0.5% lead by weight. 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 Ave) 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. 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. Due to the history of LBP removal using sandblasting with no collection measures, LBP may be present in the soil under the tanks (Woodward-Clyde 1997).

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. Buildings identified as containing asbestos and documented on the LRA parcel as part of the Phase I ESA include Buildings 1284 (838 Garnett Ave), 671 (120 Armistead Ave), 868 (326 Armistead Ave), 1413 (1125 W. Parade Ave), 912 (730 E, parade Ave), and 915 (786 E. parade Ave) (Woodward-Clyde 1997). 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. Asbestos is also known to be present on water main piping throughout the parcel (GSA 2010).

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 Ave) (Woodward-Clyde 1997).

LRA Parcel 10

LRA Parcel 10 is currently undeveloped and has no history of development other than the installation of overhead electrical transmission lines and the installation of an underground natural gas pipeline and underground water and sewer lines. Neither utility would constitute a contamination hazard to the subject property. A Phase I ESA was conducted on the site in 2012 and no business environmental risks were identified for the parcel.

Because Nottoway County is classified by the USEPA as having a predicted average indoor radon screening level greater than 4 pCi/L, there is also potential for radon levels on Parcel 10 above the USEPA Action Level.

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CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter presents an analysis of the potential impacts of the proposed action upon various components of the environment described in Chapter 3. Cumulative impacts are also analyzed for each environmental component within this chapter. The cumulative impacts analysis assesses the environmental impacts of other past, present and reasonably foreseeable future projects in conjunction with those of the proposed action. Past, present and reasonably foreseeable projects associated with FASTC are described in Section 5.3. The impact analysis presented below is also summarized in Table 2.4.1 in Chapter 2.

4.1 NATURAL ENVIRONMENT

4.1.1 Climate

An impact to climate would be considered significant if the proposed action results in air temperature increases; sea level rise; changes in the timing, location, and quantity of precipitation; and increased frequency of extreme weather events such as heat waves, droughts, and floods.

4.1.1.1 Build Alternative 1

The construction and operation of the Foreign Affairs Security Training Center (FASTC) facility would result in direct temporary and long-term emissions in Greenhouse Gases (GHG) that contribute to climate change. GHGs are measured as carbon dioxide equivalent (CO₂e) emissions. The year with the greatest GHG emissions, when construction and operational activities are estimated to be combined, is the year 2017. The yearly estimates for operational CO₂e are 8,131 tonnes. In comparison to the 2010 United States (U.S.) total CO₂e emissions (6,821.8 X10⁶ tonnes [USEPA 2012a]), this is less than two hundred thousandths of a percent. Additionally, activities that would be taking place at the new FASTC facility are currently occurring in other locations; therefore, the small net increase of GHG emissions due to the construction of Build Alternative 1 would be negligible. Emissions of GHGs from the Build Alternative 1 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 Build Alternative 2 (Preferred Alternative)

Building design and campus activities would be the same for Build Alternative 2 as they are for Build Alternative 1.

4.1.1.3 No Action Alternative

Under the No Action Alternative the FASTC facilities would not be constructed and there would be no impacts to climate.

4.1.1.4 Mitigation

Minor impacts on climate would be minimized through the LEED Silver project design standards for the FASTC facility, which would improve building energy efficiency and reduce GHG emissions associated with energy use.

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 1

Minor direct topographical changes are anticipated on Parcel 21/20 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 1 would have no significant impacts on topography.

4.1.2.2 Build Alternative 2 (Preferred Alternative)

Minor topographical changes are anticipated to occur on Parcel 21/20, the Grid Parcel, LRA Parcel 9 and LRA Parcel 10 to accommodate the proposed development of the FASTC facility. Direct impacts to topography on Parcel 21/20 and LRA Parcel 9 would be similar to those described for Build Alternative 1 and would not be significant. Additional, topographic impacts would occur on the Grid Parcel and LRA Parcel 10. Grading and filling would occur during site preparation for the various FASTC training facilities. Grading and filling activities would not require blasting nor would it result in changes in area drainage patterns. The importation or off-site disposal of soil would not be required. No indirect impacts to topography are anticipated. Therefore, Build Alternative 2 would have no significant impacts on topography.

4.1.2.3 No Action Alternative

Under the No Action alternative, the FASTC facility would not be constructed and no development would occur on the site parcels. Therefore, there would be no impact on topography.

4.1.2.4 Mitigation

Grading and filling impacts would be minimized during the design process to the extent feasible. No other mitigation measures were identified for the alternatives.

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 surrounding landscape and affect important 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 farmland subject to the Farmland Protection Policy Act (FPPA)

Cuts and fills of up to 10 feet are estimated at the site for construction of the various FASTC facilities.

4.1.3.1 Build Alternative 1

Geology

Substantial amounts of grading, excavating and leveling are anticipated during the construction of the FASTC facility. No blasting or excavation of bedrock is anticipated that would alter the geology of the study area. No multistoried or otherwise heavy load bearing structures are proposed to be constructed over the diabase dike that intersects Parcel 21/20. The Post Blast Training range may intersect this geologic formation. The blast pad itself would be 200'x200' and have a sifted sand base. The post blast recovery pad would be 100' in diameter and be constructed of 6" thick asphalt and be located behind the square demonstration pad. These structures are not anticipated to require excavation in excess of 10 feet or blasting¹⁶ to install. 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 1 would not be significant.

Soils

Construction of the FASTC elements would have a direct impact on project area soils (Parcel 21/20 and LRA Parcel 9) via temporary disturbance from construction activities and off road drive track operation. Existing structures, relict foundations, utilities and drainage structures within the building area would be removed and replaced with compacted structural fill, as required, prior to construction activities. 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/green areas. In total, approximately 1,160,000 cubic yards of soil would be either excavated or used as fill, backfill, or landscape material for the construction of the FASTC facility.

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 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

¹⁶ 4 VAC 50-30-40

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 1 would directly impact 20 acres of prime farmland soils on LRA Parcel 21/20 and 322 acres on LRA Parcel 9. To determine if Build Alternative 1 would impact prime farmland protected under the Farmland Protection Policy Act (FPPA), a Farmland Conversion Impact Rating Form (AD1006) was completed, resulting in a score of 36 out of 160 for the Site Assessment Criteria. The form was submitted to NRCS for evaluation. NRCS responded with a completed form, which is included in **Appendix C**. NRCS scored Parcel 21/20 at 71.9 out of 100 for the relative value of the farmland soils to be converted. LRA Parcel 9 was given a rating of 70.8. Thus Parcel 21/20 had a combined score of 107.9 and LRA Parcel 9 had a combined score of 106.8. Scores below 160 do not require further review under the FPPA. As a result, Build Alternative 1 would not have significant impacts on prime farmland.

4.1.3.2 Build Alternative 2 (Preferred Alternative)

Geology

Under Build Alternative 2, direct and indirect impacts to geology on Parcel 21/20 and LRA Parcel 9 would be similar to those described for Build Alternative 1. Similar direct and indirect geologic impacts would also occur on the Grid Parcel and LRA Parcel 10. A diabase dike bisects 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, direct and indirect impacts to geology under Build Alternative 2 would not be significant.

Soils

Direct and indirect impacts to soils under Build Alternative 2 would be similar to those described under Build Alternative 1 for Parcel 21/20 and LRA Parcel 9. Similar impacts would also occur on the Grid Parcel and LRA Parcel 10. The impacts to soils would not result in substantial changes in soil quality beyond the surfaces layers and would not be significant.

Prime Farmland

Build Alternative 2 would directly impact 20 acres of prime farmland soils on Parcel 21/20, 322 acres on LRA Parcel 9, and 14 acres on LRA Parcel 10. To determine if Build Alternative 2 would impact prime farmland protected under the FPPA, a Farmland Conversion Impact Rating Form (AD1006) was completed, resulting in a score of 36 out of 160 for the Site Assessment Criteria. The form was submitted to NRCS for evaluation. NRCS responded with a completed form, which is included in **Appendix C**. NRCS scored Parcel 21/20 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, and LRA Parcel 10 was given a score of 67.4. Thus Parcel 21/20 had a combined score of 107.9, LRA 9 had a combined score of 106.8 and LRA 10 had a combined score of

103.4. Similar to Build Alternative 1, Build Alternative 2 would not require further review under the FPPA. Build Alternative 2 would not have significant impacts on prime farmland.

4.1.3.3 No Action Alternative

Under the No Action alternative the FASTC facility would not be constructed and no development would occur on the site parcels. Therefore, there would be no impact on geology, soils, or prime farmland.

4.1.3.4 Mitigation

Proposed impact minimization measures would include BMPs for erosion and dust control, such as, application of water or gravel during facility construction and operation and during off road/unimproved road driving exercises.

Direct and indirect impacts to soils would be minimized through 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.

4.1.4 Water Resources

Impacts to water resources are evaluated for both temporary construction and long-term operational phases of the Proposed Action. 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 include stormwater discharges that may increase erosion rates, the volume of sediment loading to the surface water, or an increase in 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 would 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 VADEQ¹⁷, and require a 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 garage under both build alternatives would not require an industrial stormwater permit from VADEQ unless specifically requested.

An impact to water resources is considered to be significant if it:

- Reduces availability or accessibility of water resources

¹⁷ 9 VAC 25-31-120 A 1 e

- 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 1

Surface Water

Construction

Under Build Alternative 1, eleven stream crossings would be constructed on Parcel 21/20 and LRA Parcel 9. Stream crossings would have direct adverse construction impacts on approximately 54 linear feet (0.16%) of streams on Parcel 21/20. Similarly, approximately 510 linear feet (1.8%) of streams on LRA Parcel 9 would be directly impacted by construction.

Stream crossings are regulated by U.S. Army Corps of Engineers (USACE) through CWA Section 404 and by Virginia Department of Environmental Quality (DEQ) through Section 401 Water Quality Certification Program. Stream crossing 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. All pedestrian paths would be on pile supported structures across streams to avoid impacts. Best Management Practices (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 indirect 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 Clean Water Act. 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 take to comply with the terms and conditions of the permit, including water quality and quantity requirements that are consistent with the VSMP permit regulations, to reduce pollutants in the stormwater runoff from the construction site. The SWPPP also specifies all potential 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 Clean Water Act Section 401 Water Quality Certification Program and Virginia Stormwater Management Act would minimize direct and indirect impacts to surface waters from construction and impacts would not be significant.

Operation

Under Build Alternative 1, approximately 214 acres of impervious surfaces would be added to the study area parcels. 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 1 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. In addition, “all development or redevelopment projects that exceed a 5,000 square foot footprint 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.”

In addition, 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 and detention/retention basins to reduce pollutant loads and stormwater volumes. In addition, improvements to the existing stormwater management system would be included as part of Build Alternative 1. 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 1, construction activities on Parcel 21/20 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, SWPPP and implementing BMPs associated with addressing 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 1 would use publically supplied drinking water and there would be no direct or indirect impacts on groundwater quantity.

Therefore, construction and operational activities associated with Alternative 1 would have no significant impacts to groundwater.

Water Quality

Build Alternative 1 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 parcels. These materials could have direct and indirect impacts on water resources from accidental releases 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 to less than significant levels. SWPPPs and Stormwater Management Plans (SWMPs) 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 Alternative 1. Therefore, FASTC operations under with Build Alternative 1 would have no significant impacts to water quality.

Wetlands

The build alternatives are 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 wherever feasible. All the wetlands and streams of the study area have been delineated and a jurisdictional determination has been completed by USACE and DEQ to allow for the most robust analysis possible during the planning and alternatives development process. As such, the concepts for Build Alternative 1 have already incorporated wetland avoidance and impact minimization to the extent feasible during the planning phase. The layout of the alternatives shown in proximity to wetlands and wetland buffers is shown on Figures 2.2-1 and 2.2-2.

Where impacts are unavoidable, the alternatives concepts have 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 and pedestrian walkways would be located on pile supported structures to avoid impacts.

Under Build Alternative 1, direct impacts from the construction of the FASTC facility would result from filling of approximately 0.07 acres (0.17%) of wetlands on Parcel 21/20 and approximately 5.13 acres (10%) of wetlands on LRA Parcel 9. An additional 0.19 acres (0.46%) of wetlands would be indirectly impacted by clearing and conversion of forested wetland classified as palustrine forested (PFO) on Parcel 21/20 and approximately 1.62 acres (3.2%) on LRA Parcel 9.

In addition to direct and indirect wetland impacts from filling and clearing, there would be direct impacts within the established 100 foot wetland buffer. The alternatives were developed to avoid this buffer to the extent feasible. Build Alternative 1 would clear approximately 2.29 acres of the wetland buffer present on Parcel 21/20 and approximately 25.27 acres of the wetland buffer present on LRA Parcel 9.

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 4.1.4.4**. 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 plans and regulations identified under Surface Water. 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 and 500-year floodplains. Additionally, site development under the action alternatives would be conducted in compliance with stormwater management regulations so that there would be no increase in downgradient flooding potential. Therefore, Build Alternative 1 would have no direct or indirect impacts on floodplains.

4.1.4.2 Build Alternative 2 (Preferred Alternative)

Surface Water

Build Alternative 2 would have similar direct impacts to surface waters, however, impacts would be realized on the Grid Parcel and LRA Parcel 10 as well as Parcel 21/20 and LRA Parcel 9. Fifteen stream crossings would be constructed under this alternative that would have direct adverse impacts on approximately 94 linear feet (0.29%) of streams on Parcel 21/20 and 332 linear feet (1.2%) of streams on LRA Parcel 9. No direct stream impacts would occur on the Grid Parcel or LRA Parcel 10. Streams impacts by parcel for Build Alternative 1 and Build Alternative 2 are summarized in **Table 4.1-1**.

Table 4.1-1. Stream Impacts Summary Build Alternatives 1 and 2

	Existing Streams (LF)	Direct Impacts (LF)
Parcel 21/20		
Build Alternative 1	32,935	54
Build Alternative 2		94
Grid Parcel		
Build Alternative 1	3,884	0
Build Alternative 2		0
LRA Parcel 9		
Build Alternative 1	27,729	510
Build Alternative 2		332
LRA Parcel 10		
Build Alternative 1	13,399	0
Build Alternative 2		0
TOTALS		
Build Alternative 1	77,947	564
Build Alternative 2		426

Approximately 225 acres of impervious surface would be created on the study area parcels as a result of Alternative 2 construction. Indirect impacts to surface water from stormwater runoff would be minimized via the same mechanisms as described under Build Alternative 1. As a result, Alternative 2 would have no significant impact on surface water.

Groundwater

Direct and indirect impacts to groundwater under Alternative 2 would be similar to those described under Build Alternative 1 for Parcel 21/20 and LRA Parcel 9. Similar impacts would also occur on the Grid Parcel and LRA Parcel 10. As a result, Alternative 2 would have no significant impact on groundwater. Water Quality

Potential direct and indirect impacts to groundwater quality would be minimized as described under Build Alternative 1 and would not be significant.

Wetlands

Build Alternatives 2 is also the result of an extensive planning process as described for Build Alternative 1. Under Build Alternative 2, the construction of the FASTC facility would have direct fill impacts on wetlands of approximately 0.06 acres (0.15%) of wetlands on Parcel 21/20; 0.062 acres (4%) of wetlands on the Grid Parcel and 4.08 acres (8%) of wetlands on LRA Parcel 9. No wetlands would be filled on LRA Parcel 10. Build Alternative 2 would result in less fill in wetlands than Build Alternative 1. Clearing would indirectly impact an additional 2.25 acres (4.5%) of wetlands on LRA Parcel 9 and 0.05 acres (0.3%) of wetlands on LRA Parcel 10. Wetland clearing would not be required on Parcel 21/20 or the Grid Parcel. Because this loss would reduce the amount of wetlands available for human use or ecological services, it would be considered significant.

Table 4.1-2 summarizes the wetland impacts by parcel for Build Alternative 1 and Build Alternative 2.

Table 4.1-2. Wetland Impacts Summary Build Alternatives 1 and 2

	Existing Wetlands (Acres)	Direct Impacts (acres)	Indirect Impacts (acres)	TOTAL Impacts (acres)
Parcel 21/20				
Build Alternative 1	41	0.07	0.19	0.26
Build Alternative 2		0.06	0	0.06
Grid Parcel				
Build Alternative 1	1.5	0	0	0
Build Alternative 2		0.06	0	0.06
LRA Parcel 9				
Build Alternative 1	49	5.13	1.62	6.75
Build Alternative 2		4.08	2.25	6.33
LRA Parcel 10				
Build Alternative 1	15	0	0	0
Build Alternative 2		0	0.05	0.05
TOTALS				
Build Alternative 1	106.5	5.2	1.81	7.01 Total
Build Alternative 2		4.2	2.3	6.50 Total

Because this loss would reduce the amount of wetlands available for human use or ecological services, it is considered significant. In addition to the filling and clearing there will be impacts within the established 100-foot wetland buffer. Build Alternative 2 would directly impact approximately 0.41 acres

of wetland buffer on Parcel 21/20; 1.26 acres of wetland buffer on the Grid Parcel; 19.2 acres of wetland buffer on LRA Parcel 9; and 1.14 acres of wetland buffer on LRA Parcel 10 from clearing. Permitting, mitigation, and stormwater management would be the same as described for Build Alternative 1 and would reduce direct and indirect impacts to less than significant.

Floodplains

Impacts to floodplains under Build Alternative 2 would be the same as those described under Build Alternative 1.

4.1.4.3 No Action Alternative

Under the No Action alternative the FASTC facility would not be constructed and there would be no impact to water resources.

4.1.4.4 Mitigation

Should the Preferred Alternative be implemented, measures to avoid and/or minimize impacts to water resources, such as orienting all stream crossings to be perpendicular to the stream channel and the use of suitably sized culverts or bridges, as appropriate, to maintain efficient peak flow and minimize stream impacts, would be incorporated in detailed project design to the extent feasible. Pedestrian pathways crossing streams would be designed on piles to avoid impacts. LID measures and stormwater BMPs would be incorporated into the facility design to minimize stormwater runoff.

Impacts to water resources would be minimized via required regulatory compliance with Energy Independence and Security Act of 2007 (Section 438); the Clean Water Act (Sections 319, 401 and 404); 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 POLs, hazardous waste, pesticides, and fertilizers would avoid or minimize the potential for accidental release.

Unavoidable wetlands and stream impacts under Build Alternatives 1 or 2 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.
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) potential mitigation site located in the Army Compatible Use Buffer (ACUB) area, if available.

4.1.5 Biological Resources

Impacts to vegetation would be considered to be significant if any mature forest stands would be cleared, unless determined to be minor in the context of the surrounding forest areas. Loss of wetland vegetation would also be considered potentially significant. Impacts to vegetation would also be considered significant if the study areas provide habitat for protected wildlife species.

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 birds, with an exemption for military readiness activities (as defined in federal regulations) provided they do not result in a significant adverse effect on a population of a migratory bird species. A population is defined 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.” Migratory bird conservation relative to non-military readiness activities is addressed separately 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.

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 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 1

Vegetation

Direct impacts to vegetation would occur under Build Alternative 1 as approximately 500 acres of land would be cleared from Parcel 21/20 and LRA Parcel 9 for the construction of the FASTC facility. Ninety-

two percent of this land is estimated to be forested with the remaining 8% consisting of shrubland and grassland. Therefore, approximately 460 acres of forest and 40 acres of shrubland/grassland would be cleared from these parcels. Currently, approximately 1,148 acres on Parcel 21/20 and LRA Parcel 9 contain forestland and 96 acres contain grassland/shrubland. Therefore, the clearing associated with FASTC construction would eliminate approximately 40% of forestland and 42% of grassland/shrubland on these parcels 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 1 constitutes an approximate loss of 1.4% of the forestland and 1.3% 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 and LRA Parcel 9 would be the fragmentation of the forest blocks on the study area parcels 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 1 are not considered to be significant.

Wildlife

Mammals

Direct impacts to mammals from construction of the FASTC facility would occur 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). Therefore, there would be minimal changes in population sizes or distributions of native terrestrial mammalian species.

Birds

Construction of Build Alternative 1 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 1 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). Therefore, the Build Alternative 1 would not have a significant adverse effect on any populations of migratory bird species.

Under Build Alternative 1, construction of the southernmost firing range building would occur within 660 feet of the Bald Eagle nest located just east of Parcel 21/20. Bald eagles are discussed further below under Threatened and Endangered Species.

Reptiles and Amphibians

Construction of Build Alternative 1 would have direct impacts on reptiles and amphibians by displacing them from suitable habitat in the proposed study areas. 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 detention basins 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 1, 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 1.

Threatened and Endangered Species

Build Alternative 1 would have no direct or indirect impacts on Roanoke logperch, dwarf wedgemussel, Atlantic pigtoe or whitemouth shiner as the surface waters on the study area parcels do not provide suitable habitat for these species. Therefore these species 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.

Build Alternative 1 would also have no direct or indirect impacts on Michaux's sumac. Michaux's sumac is unlikely to occur on Parcel 21/20 or LRA Parcel 9. These parcels are primarily forested. The fringe areas of the forests on these parcels 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 Alternative 1, construction of the southernmost firing range building would occur within 660 feet of the bald eagle nest located on Parcel 21/20 (**Figure 2.2-1**). If bald eagles are using this nest at the proposed time of construction of this firing range building, construction would be scheduled to occur only between August and January, outside of the eagle nesting season. In addition, as part of design specifications, the clearing of trees around the facility would be minimized to the maximum extent practicable to avoid any potential line of sight impacts within 660 feet of the nest. As a result, construction of the FASTC facility 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 associated Build Alternative 1 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 by it would be similar to current noise levels produced by current Fort Pickett operations. The closest outdoor firing range proposed for use for the FASTC project is located approximately 1,750 feet northeast of the eagle nest at an existing 300 Meter Range VAARNG range (Range 8). Currently, there is an existing, active, VAARNG 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 is not anticipated to result in any indirect impacts or “takes” of bald eagles as the birds would be accustomed to noise disturbance from existing VAARNG ranges in the area.

Informal consultation with the USFWS was conducted 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 has concurred with GSA’s “no affect” determination with regards to Michaux’s Sumac, Roanoke logperch, dwarf wedgemussel and bald eagle (**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 state threatened and endangered species (**Appendix C**), but did not pursue an informal review. Virginia agencies will be provided an opportunity to submit comments on this Draft EIS.

4.1.5.2 Build Alternative 2 (Preferred Alternative)

Vegetation

Under Build Alternative 2 approximately 525 acres of land would directly impacted by clearing on Parcel 21/20, The Grid Parcel, LRA Parcel 9 and LRA Parcel 10 for the construction of the FASTC facility. Ninety-one percent of this land is estimated to be forested with the remaining 9% consisting of shrubland and grassland. Therefore, approximately 480 acres of forest and 45 acres of shrubland/grassland would be cleared from these parcels. Currently, approximately 1,335 acres on these parcels contain forestland and 105 acres contain grassland/shrubland. Therefore, the clearing associated with FASTC construction would eliminate approximately 36% of forestland and 43% of grassland/shrubland on these parcels with the greater impact being realized on LRA Parcel 9 and LRA Parcel 10.

When considering this in the context of the 33,892 acres of forest and 3,000 acres of grassland/shrubland within Fort Pickett and the 415 acres of forest that surrounds and encompasses

LRA Parcel 10, this constitutes an approximate loss of 1.4% of the forestland and 1.6% of the grassland/shrubland present within the surrounding area. None of the affected areas contain habitat for threatened or endangered species or are known to support rare or unique vegetation communities.

The construction of the various FASTC facilities on Parcel 21/20, LRA Parcel 9 and LRA Parcel 10 would have indirect impacts on vegetation from fragmentation of the forest blocks on the Parcel 21/20 and LRA Parcel 9 and a subsequent reduction in their value to forest interior species. However, substantial forest block areas are located nearby and would remain available for forest interior species. LRA Parcel 10 would also be fragmented; however the remaining unfragmented forest block area would be approximately 284 acres and would still be of moderate value to forest interior species.

Therefore, the direct and indirect impacts to vegetation under Build Alternative 2 are not considered to be significant.

Wildlife

Direct and indirect impacts to wildlife under Build Alternative 2 would be similar those described under Build Alternative 1 and would occur on the Grid Parcel and LRA Parcel 10 in addition to Parcel 21/20 and LRA Parcel 9.

Threatened and Endangered Species

Direct and indirect impacts to threatened and endangered species and the bald eagle under Build Alternative 2 would be the similar to those described under Build Alternative 1, with the following exceptions.

It was determined that there was potential habitat for Michaux's sumac along the power line easement on LRA Parcel 10. A qualified botanist, approved by USFWS, was retained to conduct a survey in June 2012. The survey determined that Michaux's sumac is not present on LRA Parcel 10. The survey report was submitted to USFWS and USFWS has concurred with these findings; therefore, Build Alternative 2 would have no direct or indirect effect on Michaux's sumac (**Appendix C**).

Under Alternative 2, construction of the southernmost firing range building would occur outside the 660 foot buffer for the bald eagle nest located on Parcel 21/20 (refer to **Figure 2.2-2**). In addition, like Build Alternative 1, the clearing of trees around the facility would be minimized to the maximum extent practicable to avoid any potential line of sight impacts to the bald eagle nest. As a result, construction of Build Alternative 2 would not result in any "takes" of bald eagles or any other significant direct or indirect impacts.

4.1.5.3 No Action Alternative

Under the No Action alternative the FASTC facility would not be constructed and there would be no impact to biological resources.

4.1.5.4 Mitigation

Direct and indirect impacts to vegetation would be minimized via proposed preservation and revegetation strategies that would be implemented to the extent feasible during and after completion of construction including:

1. **Avoid Disturbance Whenever Possible:** project plans would 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 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.
4. **Connect Plant Communities Across Larger Areas:** Revegetation 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.

Impacts to protected species would be minimized through regulatory compliance with the Bald and Golden Eagle Protection Act. If bald eagles are using the nest within 660 feet of Build Alternative 1 firing range buildings, construction would be scheduled to occur only between August and January, outside of the eagle nesting season. Under either Build Alternative 1 or 2, the clearing of trees around the firing range buildings would be minimized to the maximum extent practicable to avoid any potential line of sight impacts within 660 feet of the nest.

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 streams and wetlands.

Other mitigation measures that would be considered to the extent feasible would be avoiding site clearing during the migratory bird nesting season to minimize temporary construction impacts on migratory birds.

4.2 BUILT ENVIRONMENT

4.2.1 Cultural Resources

For cultural resources found eligible to the NRHP, a significant adverse impact is one that disturbs the integrity of a historic property. If a project disturbs intrinsic characteristics that make the property eligible for or listed 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 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 1

Architectural Resources

Fort Pickett includes two architectural resources, the Officer's Open Dining Facility and the hangar (with the associated airfield), that have been determined eligible for the National Register of Historic Places (NRHP), and one architectural resource, the Wells House/Commander's Residence, that is treated as eligible for the NRHP by the Virginia Army National Guard (VAARNG). None of these three buildings 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 1. Therefore, there would be no direct impacts to these resources.

The Officer's Open Dining Facility (Officer's Club) is located on the north side of Military Road, next to the south boundary of LRA Parcel 9. The site of this two-story, wood-frame 1942 building includes several mature trees on the south (front) and east sides, manicured lawns, and two asphalt-paved surface parking lots, one on the east and west sides of the building. Buildings that were on the north and south sides of the Officer's Club have been demolished; a small parking lot remains from the building that was north of the Officer's Club. Forested areas are to the west, north, and east, including around an extant World War II-era, one-story building located more than 475 feet to the north. Another World War II-era, one-story building is approximately 500 feet to the northeast. Immediately southeast of the Officer's Club is the 1942 Field House (two stories), and approximately 1,250 feet to the east, also on the north side of Military Road, is the recently constructed VAARNG Emergency Services facility.

Indirect secondary effects to the hangar by the construction of the FASTC facility on Parcel 21/20 and LRA Parcel 9 are expected to be minimal, given factors such as distance and dense vegetation between the hangar and these two parcels. The types of facilities proposed for construction on the northwest side of Parcel 21/20 (Post-Blast Training Range in the Explosive Range Area) and the north side of LRA Parcel 9 (Off-Road and Unimproved Road Driving Courses in the Off-Road and Unimproved Driving Track Area) are not of substantial height. As such, these FASTC facilities likely would not be visible from the hangar because of the relatively long distance between the hangar and Parcel 21/20 (1.22 miles from the northwestern portion) and LRA Parcel 9 (1.20 miles from the northern portion). Furthermore, the thick forest of primarily coniferous trees that extends across the area between Blackstone Army Airfield would obscure southern viewsheds from the hangar towards the FASTC facility year-round. Noise modeling for FASTC demolition noise 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 1 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 hangar, 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 hangar and airfield, so an intermittent increase in noise exposure would not negatively affect the significant qualities and characteristics of the property.

Under Build Alternative 1, three buildings and parking lots would be constructed northeast of the Officer's Club. These buildings would include a one-story warehouse (A09), a one-story vehicle maintenance facility (D06), and a two-story driving training building (D01). A surface parking area for 300 vehicles would be built on the north side of these three buildings, and a surface parking area for 100 vehicles would be added east of the vehicle maintenance facility and south of the driving training building. Portions of driving tracks of the High Speed Anti-Terrorism Driving Course (D02) are north and northeast of the three proposed new buildings.

The proposed FASTC would not change the use of the Officer's Club, and the addition of three new buildings and associated surface parking to the northeast would not result in direct or indirect adverse effects to the character of the club's physical features or its setting. The scale and height of the new buildings (one or two stories) is in keeping with the scale and height of the existing buildings that currently are, as well as historically were, near the Officer's Club. Vegetation on the site of the Officer's Club would not be changed, and construction of the new facilities would preserve existing vegetation where possible and in cleared areas, replant native plant communities where possible. Beyond the immediate area of the three new buildings and parking areas, views of other proposed facilities of FASTC, namely High Speed Anti-Terrorism Driving Course (D02), would be obscured by vegetation that would surround the driving tracks, particularly due to 100-foot vegetative buffers that would be maintained around two drainage corridors; one that extends from the west to the north of the Officer's Club and one running west to east along the north side of the Officer's Club site (refer to **Figure 2.2-1**).

The Officer's Club would not be affected by noise from small caliber weapons operations, as the peak sound levels associated with this type of training do not extend west of Parcel 21/20. The club is within the existing LUPZ and 57 dB CDNL Zone I (refer to Noise Sections 3.2.3 and 4.2.3) for demolition and large caliber weapons training activities that currently occur at Fort Pickett. With the addition of the proposed FASTC training operations, the Officer's Club would remain within the 57 dB CDNL noise zone. Similarly, implementation of Build Alternative 1 would not change the noise environment of the Officer's Club for peak noise. Therefore, the Officer's Club would not be adversely affected by proposed FASTC small caliber weapons and demolition training. Similarly, implementation of Build Alternative 1 would not change the noise environment of the Officer's Club for peak noise, as it would remain within the 115 dB Peak noise exceeded 15% of time caused by weather (PK15)(met) zone and outside the 130 dB Peak noise exceeded 50% of time caused by weather (PK50)(met) zone. Concerning noise exposure related to operations on the D02 drive tracks, segments of which are to the north, the Officer's Club would be outside the 65 dB (refer to Noise Section 4.2.3.2) contour for maximum and average drive track operations. Therefore, the Officer's Club would not be directly or indirectly adversely affected by the noise from proposed FASTC small caliber weapons, demolition, or high speed driving training.

The Wells House/Commander's Residence (Wells House) is located approximately 3,500 feet southeast of the proposed location of the FASTC main campus in Parcel 21/20, and more than 4,700 feet south of the proposed locations of small arms firing ranges in Parcel 21/20. Due to the distance and dense forest vegetation that largely characterizes the area between the Wells House and Parcel 21/20, construction of the proposed FASTC Build Alternative 1 would have no visual effects to the Wells House. The noise environment of the Wells House would not change with the addition of proposed FASTC small arms and demolition training operations. Therefore, Build Alternative 1 would have no direct or indirect adverse effect on the potential eligibility of the Wells House.

Under Build Alternative 1, the main access point to the FASTC facility by staff and students is expected to be through the Fort Pickett Main Gate to the FASTC Main Campus Compound Access Control (CAC) off Dearing Avenue. A projected increase in traffic along Dearing Avenue would have no direct or indirect effect on architectural resources, as there are no NRHP-listed or eligible properties along this road.

Because of its proximity to Fort Pickett, potential indirect effects to the NRHP-listed Blackstone Historic District from the proposed FASTC operations were considered. New construction proposed on LRA Parcel 9 would be approximately 1.7 miles from the southeastern part of the Blackstone Historic District, and would not be visible from the historic district. 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, the Blackstone Historic District would not be directly or indirectly adversely affected by the construction and operational activities of FASTC.

Implementation of Build Alternative 1 would have no direct or indirect adverse effects on NRHP-eligible architectural resources. GSA has initiated consultation with VDHR on this finding of effects and the results will be incorporated in the Final EIS.

Archaeological Resources

Implementation of Build Alternative 1 would have no direct or indirect adverse effects on NRHP-eligible archaeological resources. All sites recommended as potentially eligible for the NRHP would be avoided by the Proposed Action. GSA has initiated consultation with VDHR on this finding of effects and the results will be incorporated in the Final EIS.

4.2.1.2 Build Alternative 2 (Preferred Alternative)

Architectural Resources

The hangar (with the associated airfield) and the Officer's Club, the only two NRHP-eligible architectural resources at Fort Pickett, are not located in any of the four parcels, and thus, the buildings would not be demolished, moved, or otherwise physically altered as a result of implementing Build Alternative 2. Likewise, the Wells House, which is treated as eligible for the NRHP, is not located in any of the four parcels and therefore would not be directly affected by the proposed FASTC.

Indirect secondary effects to the hangar by the construction of FASTC hard and soft 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 hangar and these two parcels. The types of facilities proposed for construction

on the northwest side of Parcel 21/20 (Post-Blast Training Range in the Explosive Range Area) and the north side of LRA Parcel 9 (Off-Road and Unimproved Road Driving Courses in the Off-Road and Unimproved Driving Track Area) are not of substantial height. As such, these FASTC facilities likely would not be visible from the hangar because of the relatively long distance between the hangar and Parcel 21/20 (1.22 miles from the northwestern portion) and LRA Parcel 9 (1.20 miles from the northern portion). Furthermore, the thick forest of primarily coniferous trees that extends across the area between Blackstone Army Airfield would obscure southern viewsheds from the hangar towards the FASTC facilities year-round. Noise modeling for FASTC demolition noise 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 2 would result in an extension of the LUPZ and Zone I (57 dB 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 an adverse impact, 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 hangar and airfield, so an intermittent increase in noise exposure would not have direct or indirect negative effects on the significant qualities and characteristics of the property.

Proposed FASTC training operations would not significantly change the noise levels around the Officer's Club. The Officer's Club would not be affected by noise from small caliber weapons operations, as the peak sound levels associated with this type of training 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 Officer's Club would remain within the 57 dB CDNL noise zone. Similarly, implementation of Build Alternative 2 would not change the noise environment of the Officer's Club for peak noise, as it would remain within the 115 dB PK15(met) zone and outside the 130 dB PK50(met) zone. Concerning noise exposure related to operations on the D02 drive tracks, segments of which are to the north, the Officer's Club would be outside the 65 dB contour for maximum and average drive track operations. Therefore, the Officer's Club would not be directly or indirectly adversely affected by the noise from proposed FASTC small caliber weapons, demolition, or high speed driving training. GSA has initiated consultation with VDHR on this finding of effects and the results will be incorporated in the Final EIS.

The Wells House is located approximately 4,700 feet south of the proposed location of the FASTC small arms firing ranges in Parcel 21/20. Due to the distance and dense forest vegetation that largely characterizes the area between the Wells House and Parcel 21/20, construction of the proposed FASTC Build Alternative 2 would have no visual effects to the Wells House. The noise environment of the Wells House would not change with the addition of proposed FASTC small arms and demolition training

operations. Therefore, Build Alternative 2 would have no direct or indirect adverse effect on the potential eligibility of the Wells House.

The majority of daily vehicular traffic to the FASTC campus under Build Alternative 2 would enter the Fort Pickett Main Gate on Military Road. A secondary access point would be the Fort Pickett West Gate on West Entrance Road. There are no NRHP-listed or eligible properties along the northern portion of Military Road so a projected increase in traffic along this route would have no effect on significant architectural resources. Likewise, there are no known NRHP-eligible properties on West Entrance Road; therefore, a slight increase in traffic on this road would have no direct or indirect significant effect on architectural resources.

A minimal increase in traffic on U.S. 460 Business (North Main Street) through downtown Blackstone to West Entrance Road would not adversely affect the integrity of the Blackstone Historic District. New construction proposed on LRA Parcel 10 would be approximately 1.4 miles from the southeastern part of the Blackstone Historic District. The new facilities would range from one to five stories in height. Forested vegetation would largely surround the new facilities and the distance and varied topography between LRA Parcel 10 and the historic district would result in minimal visual effects to Blackstone Historic District. 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, the Blackstone Historic District would not be directly or indirectly adversely affected by the construction and operational activities of FASTC.

Implementation of Build Alternative 2 would have no adverse effects on NRHP-eligible architectural resources GSA has initiated consultation with VDHR on this finding of effects and the results will be incorporated in the Final EIS.

Archaeological Resources

Implementation of Build Alternative 2 would have no adverse effects on NRHP-eligible archaeological resources. All sites recommended as potentially eligible for the NRHP would be avoided by the Proposed Action. GSA has initiated consultation with VDHR on this finding of effects and the results will be incorporated in the Final EIS.

4.2.1.3 No Action Alternative

Under the No Action Alternative, GSA and U.S. Department of State (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.

4.2.1.4 Mitigation

Compliance with Section 106 of the National Historic Preservation Act would avoid or minimize impacts to cultural resources. The need for mitigation measures will be determined at the conclusion of consultation with VDHR and will be incorporated into 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 Alternatives 1 and 2, Phase II testing and evaluation and further consultation with VDHR would be conducted.

4.2.2 Air Quality

This section provides a description of the potential impacts associated with the alternatives. The analysis evaluates projected future emissions, including construction and operations. 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 areas¹⁸, or 4) for mobile source emissions, result in an increase in emissions to exceed 250 TPY for any pollutant. The air quality impact technical report, including all assumptions and calculations, is provided in **Appendix I**.

Pollutants considered in this analysis include the criteria pollutants. Airborne emissions of lead are only evaluated for ordnance detonation because the only lead emission sources associated with the build alternatives 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 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, Volatile Organic Compound (VOC), Carbon Monoxide (CO), Nitrous Oxides (NO_x), and Sulfur Dioxide (SO₂) emissions would primarily be generated by diesel-fueled heavy equipment operating in construction areas. Particulate matter (PM) emissions, in the form of PM₁₀ 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 PM₁₀, 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 for dust control. A dust control effectiveness of 50% is assumed, based on the estimated control effectiveness of watering (WRAP 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.

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

¹⁸ 40 CFR Part 52.21

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. Operational equipment, including vehicles driven by commuters, is anticipated to be primarily newer equipment (post-2010 model year) that generate lower emissions and would also produce negligible ambient HAPs. Therefore MSAT emissions are not considered further in this analysis.

Air emissions were 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. Details calculations of total construction activities have continued to evolve. If the Preferred Alternative were to be implemented, the actual construction activities may vary from those used in this analysis, but any differences would not appreciably affect the outcome of this analysis.

Under CAA, motor vehicles and construction equipment are exempt from air permitting requirements. Since the emissions from these sources associated with the proposed action and alternatives would occur in areas that are in attainment of the NAAQS for all criteria pollutants, the GCR 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 GCR are 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 and alternatives under NEPA requirements.

4.2.2.1 Build Alternative 1 and 2

Build Alternative 1 and Build Alternative 2 (Preferred Alternative) include the same program elements and only differ in the location of facilities. Therefore, the build alternatives would have identical air emissions and are analyzed together.

The results of the air emissions analysis show that construction and operational emissions would remain well below the significance thresholds and would not have a significant impact on the local or regional air quality. A summary of the analysis is presented below and the complete analysis is provided in **Appendix I**.

Construction

Direct impacts from emissions from construction would include combustion emissions from fossil fuel-powered equipment and fugitive dust emissions (PM₁₀ and PM_{2.5}) during clearing, demolition activities, earth moving activities, and operation of equipment on bare soil. Construction would occur throughout the period 2014-2020 and would be segmented into three phases. **Table 4.2-1** presents estimates for the primary construction activities that would utilize heavy duty diesel equipment for the Build Alternatives 1 and 2, by phase.

Table 4.2-1. Construction Activity Estimates for Build Alternatives 1 and 2

Phase	Clearing (AC)	Grading (SF)	Building Demolition (SF)	Asphalt-Concrete Demo (SF)	Building Construction (SF)	Paving (SF)
Phase 1	736	8,836,808	98,828	580,304	1,042,088	4,361,628
Phase 2	12	234,078	0	0	527,415	48,720
Phase 3	232	1,049,580	8,732	28,776	707,188	196,256

Table 4.2-2 presents the construction emission estimates for Build Alternatives 1 and 2, by year.

Table 4.2-2. Construction Emission Estimates for Build Alternatives 1 and 2

Year	VOC tons/yr	CO tons/yr	NO _x tons/yr	SO ₂ tons/yr	PM ₁₀ tons/yr	PM _{2.5} tons/yr
2014	2.93	36.34	35.00	0.77	148.11	16.53
2015	2.91	34.71	34.85	0.77	148.12	16.54
2016	3.49	54.44	44.82	0.97	153.83	17.50
2017	4.16	69.29	55.79	1.21	182.36	20.76
2018	1.27	35.44	21.01	0.44	34.25	4.29
2019	0.69	15.61	11.15	0.24	28.54	3.32
2020	0.69	15.12	11.13	0.24	28.54	3.32
Significance Threshold	250	250	250	250	250	250

Fugitive dust from land disturbance activities would be the primary source of emissions during construction, with most of the emissions occurring during Phase 1. PM₁₀ emissions are estimated using wetting to reduce dust release by 50%. PM₁₀ emissions are predicted to be greatest in 2017, at 182.36 TPY. These emissions however, 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.

Operations

Table 4.2-3 presents the annual emission estimates for FASTC during the years 2017-2020, when both construction and operations are ongoing. Operational activities included in this table are the commuter traffic as well as track operation, both of which would be phased in over time with increasing activity as the bulk of the FASTC complex becomes operational. Boiler and emergency generator operations have been included at 100% beginning in 2017 even though the entire complex is not complete at that time, as it is has not been determined when each building that would include these sources would become operational. The stationary sources, however, represent the smallest segment of operational emissions and so inclusion of all boiler and emergency generators for the period 2017-2019 provides a maximum emissions scenario for those years.

Table 4.2-3. Emission Estimates for FASTC, 2017-2020 (Construction and Operations)

Year	VOC tons/yr	CO tons/yr	NO _x tons/yr	SO ₂ tons/yr	PM ₁₀ tons/yr	PM _{2.5} tons/yr
2017	4.85	117.93	65.34	19.27	183.26	21.06
2018	2.05	92.67	31.34	18.50	35.20	4.63
2019	1.49	84.74	20.86	18.32	19.58	3.74

2020	1.55	92.11	21.22	18.33	29.62	3.78
Significance Threshold	250	250	250	250	250	250

Table 4.2-4 presents the annual emissions based on full build out, estimated at the beginning in 2020. All of the criteria pollutant emissions remain well below the significance threshold of 250 TPY. The carbon dioxide equivalent (CO₂e) Greenhouse Gas 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 emission estimates, operation of the FASTC complex would not have direct or indirect significant impact on the local or regional air quality.

Table 4.2-4. Annual Operational Emission Estimates for FASTC

	VOC tons/yr	CO tons/yr	NO _x tons/yr	SO ₂ tons/yr	PM ₁₀ tons/yr	PM _{2.5} tons/yr	Lead tons/yr	CO ₂ e tons/yr
Stationary Sources								
Emergency Generators	0.07	0.30	0.99	0.01	0.06	<0.04	0	54.67
Boilers	0.14	1.27	5.07	18.01	0.51	<0.04	0	5,151.72
Ordnance detonation	ND	1.73	0.07	0.03	0.12	0.10	0.5	0.00
Subtotal	0.21	3.30	6.13	18.05	0.69	0.10	0.5	5,206
Mobile Sources (Commuters and Track Operations)								
2020+	0.66	73.98	3.97	0.05	0.38	0.35	0	2,925
Grand Total	0.87	76.98	10.10	18.10	1.07	1.45	0.5	8,131
Significance Threshold	250	250	250	250	250	250	250	25,000

Notes: ND = No data. VOCs are not assessed in the reference (AP-42) for ordnance.

The proposed boilers are all less than 10,000,000 Btu/hr and therefore are exempt from permitting regulations of the Commonwealth of Virginia for stationary sources of air emissions¹⁹. The emergency generators are exempt from permitting regulations provided hours of operation are kept below 500 hours per year²⁰.

4.2.2.2 No Action Alternative

Under the No Action Alternative, the build alternatives would not be developed; therefore, none of the construction or operational emissions would occur.

4.2.2.3 Mitigation

Impacts to air quality (PM10 emissions) from fugitive dust would be minimized by periodic wetting during FASTC construction and operation.

4.2.3 Noise

Noise modeling was conducted to determine the location and magnitude of noise that would be generated by the training operations for each alternative in comparison to existing conditions (baseline). **Appendix G** includes a detailed description of the modeling parameters and computer programs used in this analysis.

¹⁹ Virginia Administrative Code (VAC), Chapter 9-Environment (9 VAC 5-80-1320.B.b)

²⁰ 9 VAC 5-80-1320.B.2.b

Noise impacts would be significant if the alternative 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 impacts on wildlife are discussed under Section 4.1.5. 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. 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 sections for each alternative, and in **Appendix G**, show that the proposed FASTC training operations under Build Alternative 1 or Build Alternative 2 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 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.

Would FASTC have noise impacts?

- Limited additional noise in the surrounding community
- Frequency of peak noise events heard in Blackstone would increase by 1.2 per week on average
- Area northwest of Fort Pickett boundary would notice peak noise events the most.

4.2.3.1 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 was not analyzed for the Proposed Action and is considered only as part of the existing noise environment. Occupational noise exposure is addressed in this analysis.

Where applicable, the noise 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. FASTC operations would be identical with Build Alternative 1 and 2 and only differ in the location of the facilities. To compare both results and determine the overall noise environment for the alternatives (Fort Pickett baseline + proposed FASTC alternatives), 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, Zone 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.

4.2.3.2 Drive Tracks and Courses

Build Alternative 1

Build Alternative 1 has six separate driver training tracks and courses including three High-Speed Anti-Terrorism Driving Tracks (DO2 tracks 1, 2, and 3), Mock Urban Driving Track (D03), Unimproved Road Course (D04) and Off-Road Course (D05). Other driving related training facilities include a Mock Urban Environments Area Drive Track (T02), Urban Driving Track (E04) and Rural Driving Track (E04). Only common street automobiles would use each track and course. Details on the drive track operations are provided in **Appendix G**. This analysis follows guidelines recommended by FHWA and uses noise

evaluation criteria from local jurisdictions. Hourly average (66 dBA) and maximum sound levels (65 dBA daytime, 55 dBA nighttime) were estimated for all driving exercises, as follows.

Figure 4.2-1 shows results for hourly average noise level for Build Alternative 1:

- The 66 dBA noise level (yellow box) would extend out 70 feet from the centerline of the loudest track as well as from the skid pad locations where skid pad and car ramming exercises would occur (yellow circles). There would be no noise impact beyond 70 feet.

Figure 4.2-2 shows results for the maximum noise level for Build Alternative 1:

- The 65 dBA daytime noise level (yellow box) would extend out approximately 1,000 feet from the loudest track during the daytime. Similarly, for skid pad and car impact exercises, the study results show there would be no noise impact beyond 800 feet from the skid pads (yellow circles).
- The 55 dBA nighttime noise level would extend out up to 500 feet from the loudest track at night. Skid pad and car impact exercises would not occur at night. This contour is not shown in **Figure 4.2-2**, however it is entirely within the Fort Pickett boundary; no impact of residential properties is expected. Further, there are expected to be low numbers of vehicle operations per day (4 each) on D04 and D05.

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 1 would not be significant.



Figure 4.2-1 Drive Track Noise Level Build Alternative 1 (66 dBA Hourly Average Sound Level)

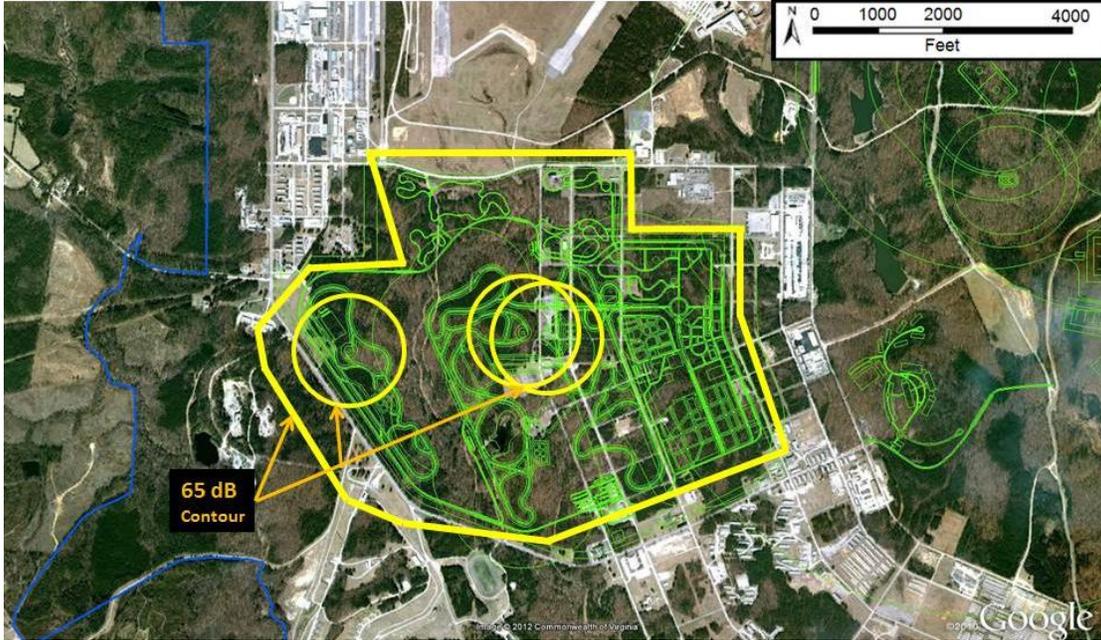


Figure 4.2-2 Drive Track Noise Level for Build Alternative 1 (65 dBA Maximum)

Build Alternative 2 (Preferred Alternative)

Build Alternative 2 includes identical operations on all of the same drive tracks and road courses as Build Alternative 1, with only a slight variation in the location (refer to **Figure 2.2-2**). Details on the drive track operations are provided in **Appendix G**.

Figure 4.2-3 shows results for the hourly average noise level for Build Alternative 2:

- The primary difference for Build Alternative 2 is that the 66 dBA contour (yellow box) would extend about 150 feet further south and 550 feet further east than does the same contour for Build Alternative 1, reflecting the differences in the site layouts. However, noise would still be contained entirely within the Fort Pickett boundary and would not exceed the FHWA Noise Abatement Criteria levels for residential land use. No direct or indirect impacts are expected outside LRA Parcel 9.

Figure 4.2-4 shows results for the maximum noise levels Build Alternative 2:

- The 65 dBA maximum sound level contour extends around the perimeter of all drive tracks and courses at the same distances from the drive tracks that were estimated for Build Alternative 1; approximately 1,000 feet from the most western high-speed track straightaway (yellow arrow) and 250 feet, from the nearest drive track or course, around the remaining parts of the. Compared with Build Alternative 1, the main difference with Build Alternative 2 is that the 65 dBA contour complex (yellow box) extends approximately 200 feet farther south and 750 feet farther east than does the same contour for Build Alternative 1. No direct or indirect impacts are anticipated.

The 55 dBA nighttime noise level would be the same as Build Alternative 1.

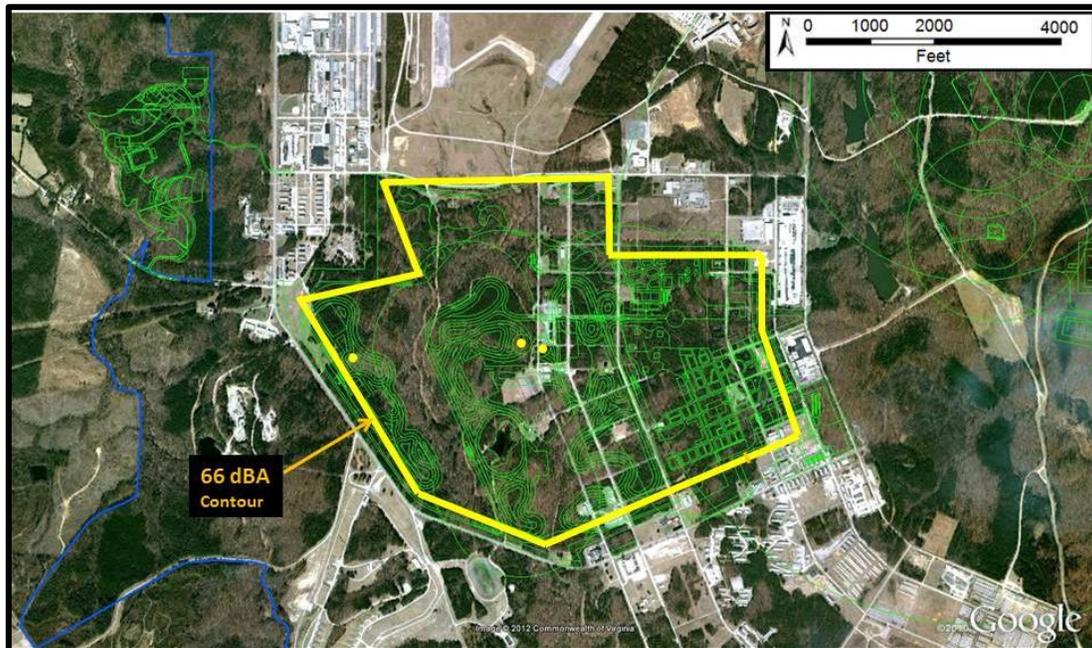


Figure 4.2-3 Drive Track Noise Level for Build Alternative 2 (66 dBA Hourly Average Sound Level)

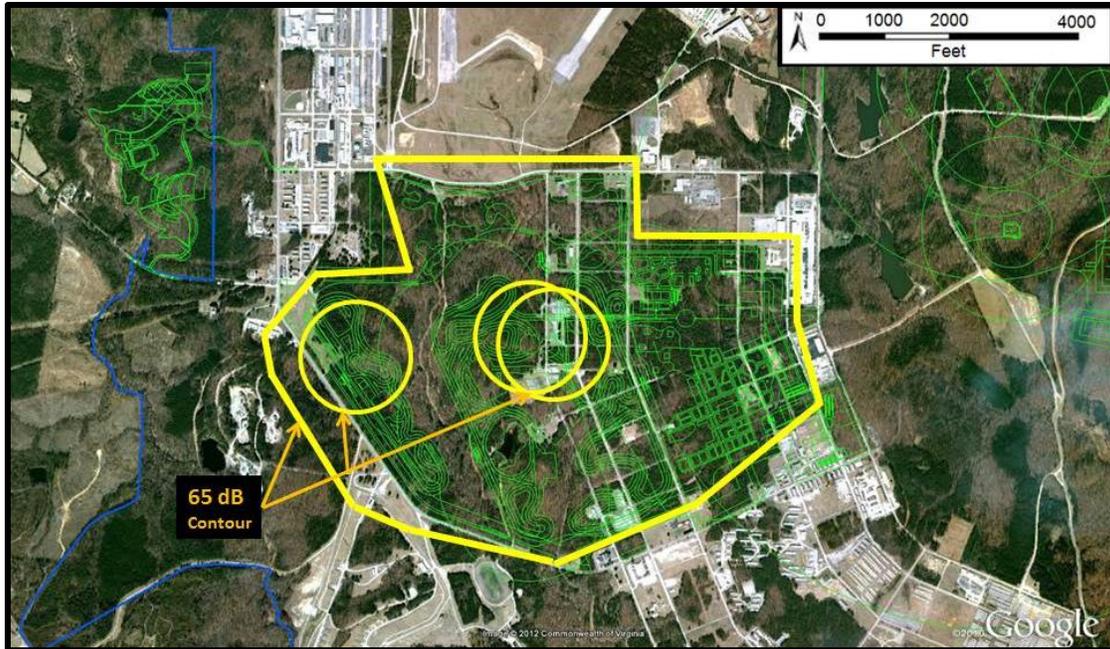


Figure 4.2-4 Drive Track Noise Level for Build Alternative 2 (65 dBA Maximum)

As indicated for Build Alternative 1, 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 2 would not be significant.

4.2.3.3 Explosives Ranges (Demolition)

Build Alternative 1

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.

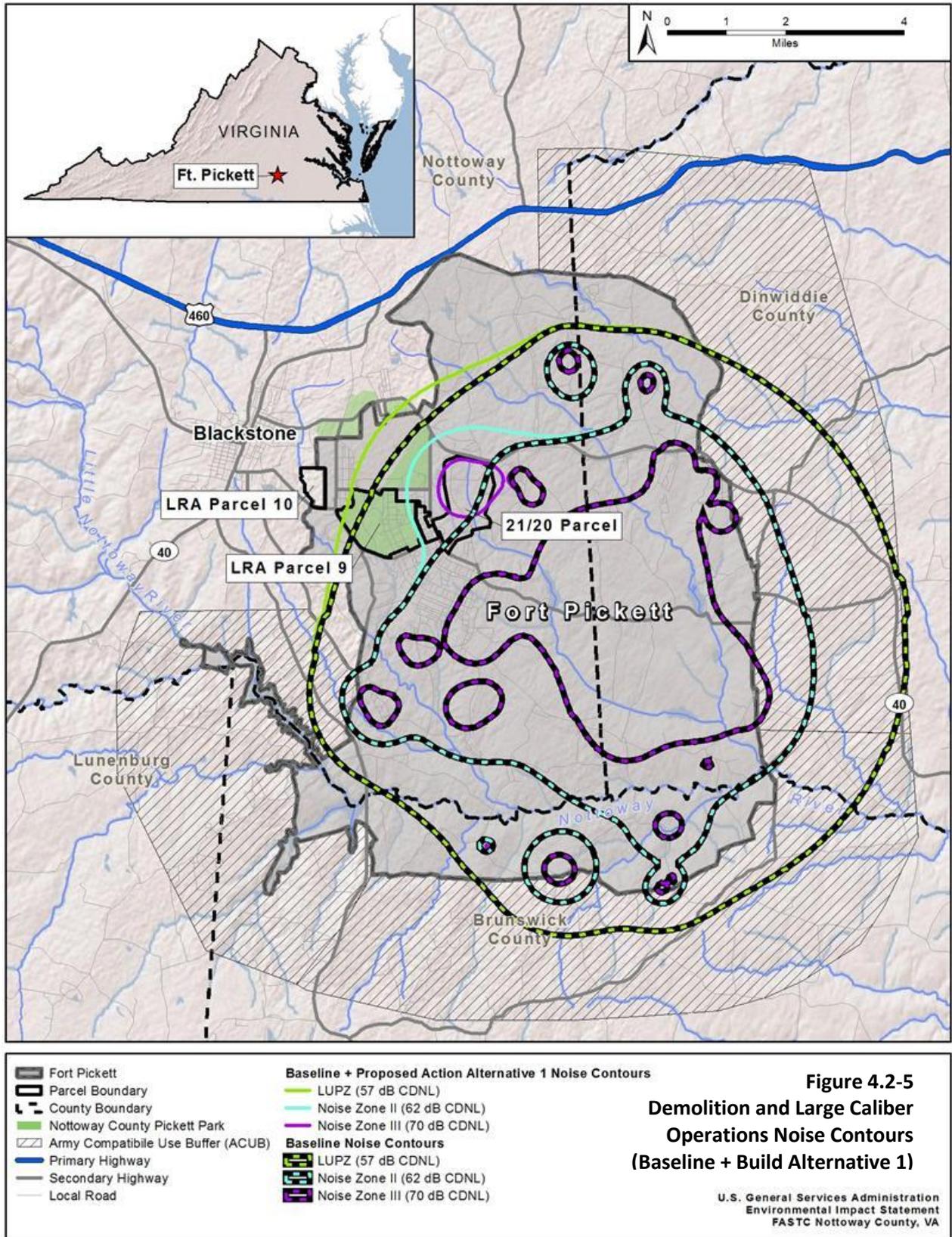
The projected noise levels from proposed operations at the explosive ranges are mainly dominated by the higher yield FASTC demolition operations using 2 to 3 pound charges. Day-to-day operations include 2,783 (2,825 total – 42 2.33lb or larger) smaller (4.5 grams to 1½ pound) detonations that would occur 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 3 pound demolition charges are expected to occur a total of only 6 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 1 Noise Zones

Comparing Build Alternative 1 demolition noise levels with the baseline Fort Pickett levels, the results show that (1) noise exposure from FASTC proposed operations under Build Alternative 1 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 1) above the baseline in this one area.

Figure 4.2-5 shows noise zone results for Build Alternative 1 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 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, the Grid Parcel, and the eastern part of LRA Parcel 9.
- 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 with Fort Pickett.



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 1 and direct and indirect impacts would not be significant.

Build Alternative 1 Complaint Risk Areas

Figures 4.2-6 shows results for peak noise levels outdoors under average weather conditions (PK50[met]) for Build Alternative 1 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 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.

Figures 4.2-7 shows results for peak noise levels outdoors under infrequent unfavorable weather conditions (PK15[met]) for Build Alternative 1 and the baseline:

- 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. 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, part of LRA Parcel 10, the Blackstone Army Airfield, and areas in between.

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.

Under Build Alternative 1, 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 42 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.

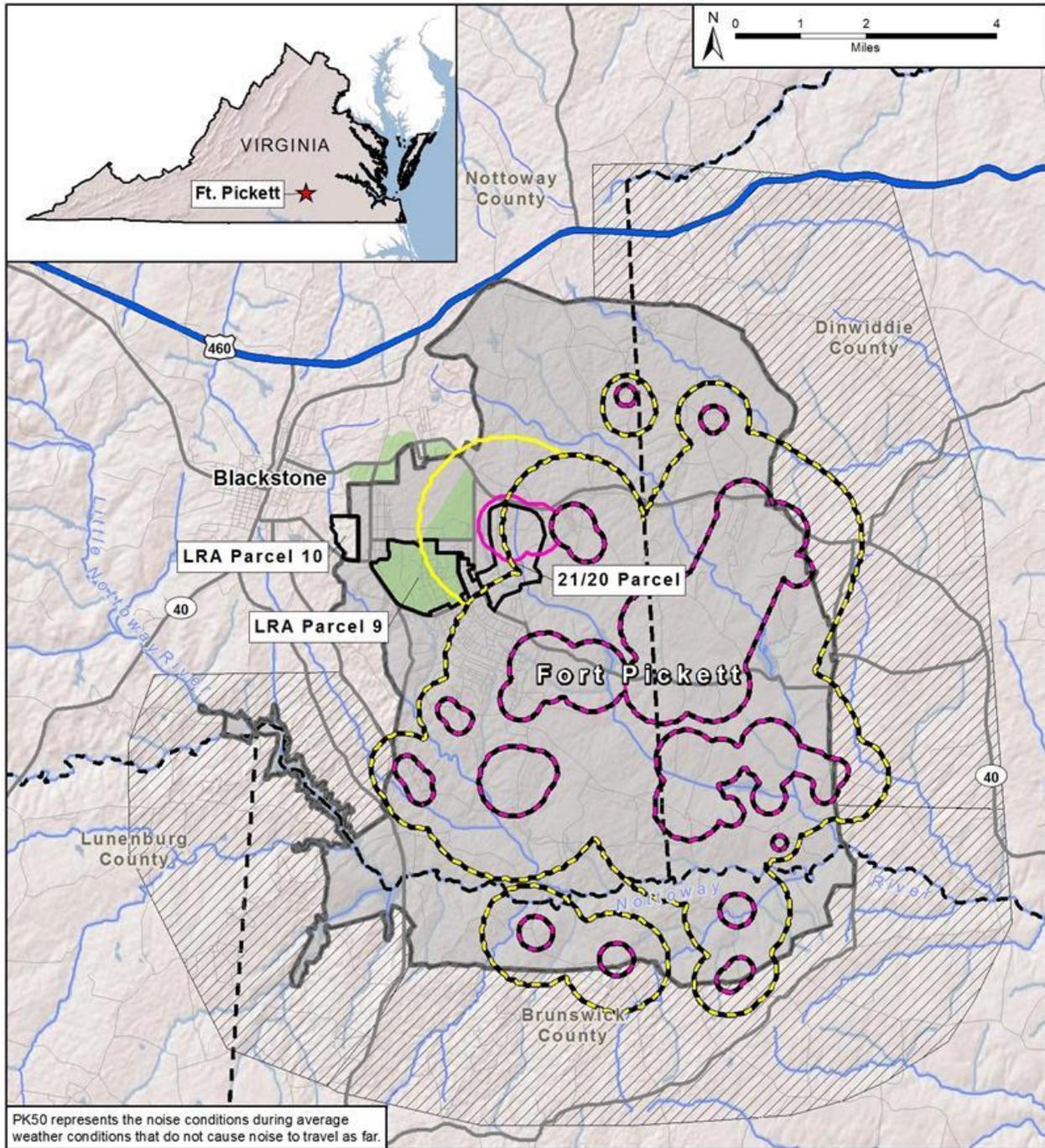
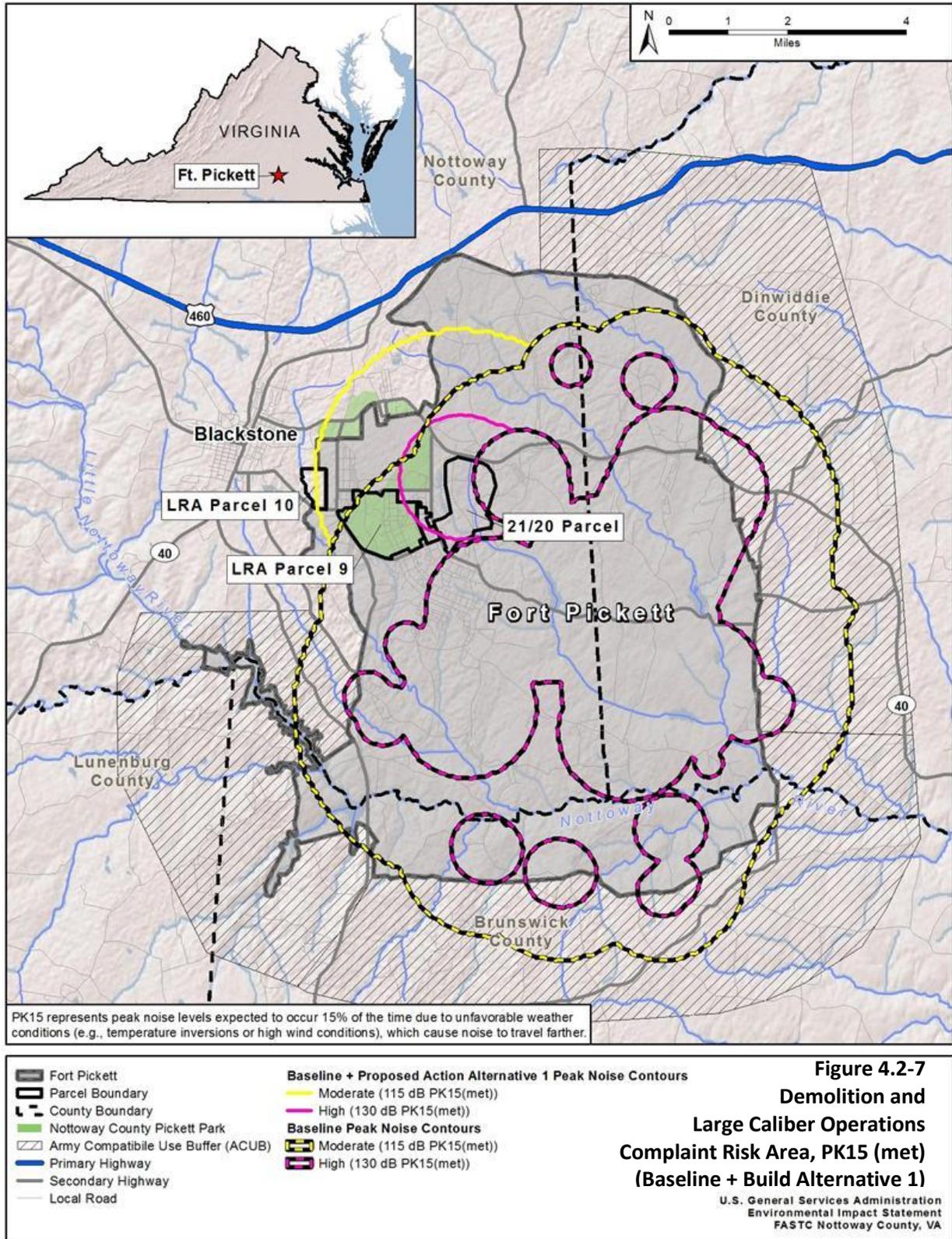


Figure 4.2-6
Demolition and
Large Caliber Operations
Complaint Risk Area, PK50 (met)
(Baseline + Build Alternative 1)

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



Build Alternative 2 (Preferred Alternative)

Operations under Build Alternative 2 would be identical to Build Alternative 1; only the layout of the explosives ranges vary. Under Build Alternative 2 the general location of the Post Blast Training Range would be exchanged with the general location of the Explosives Breaching Classroom, Breaching Walls and Breaching House (refer to **Figure 2.2-1**). Other minor facility layout adjustments would also occur.

Build Alternative 2 Noise Zones

Figure 4.2-8 shows noise zone results for Build Alternative 2 and the baseline:

- Noise zones and associated noise impacts are nearly identical to Build Alternative 1 and would not be significant.
- Noise Zone III would remain on the eastern boundary of Parcel 21/20 and would not extend as far east over the fishing ponds as with Build Alternative 1.
- Noise Zone II would reach the Grid Parcel, but would not quite extend to LRA Parcel 9 as it does with Build Alternative 1.

Build Alternative 2 Compliant Risk Areas

The potential risk for noise complaints from peak noise would also be the same for Build Alternative 2 as Build Alternative 1 (**Figures 4.2-9** and **4.2-10**), and like Build Alternative 1 the direct noise impacts would not be significant.

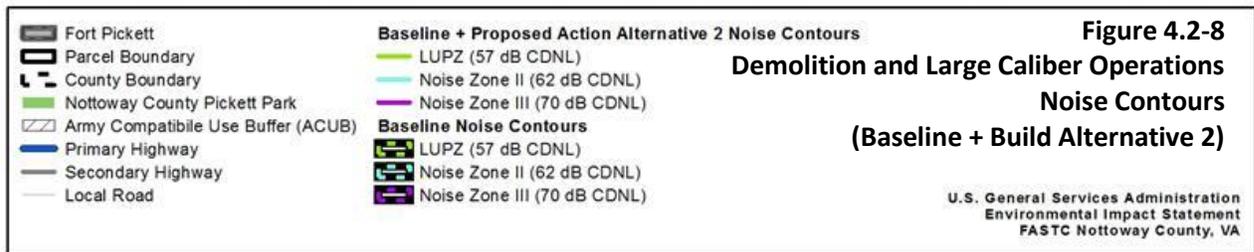
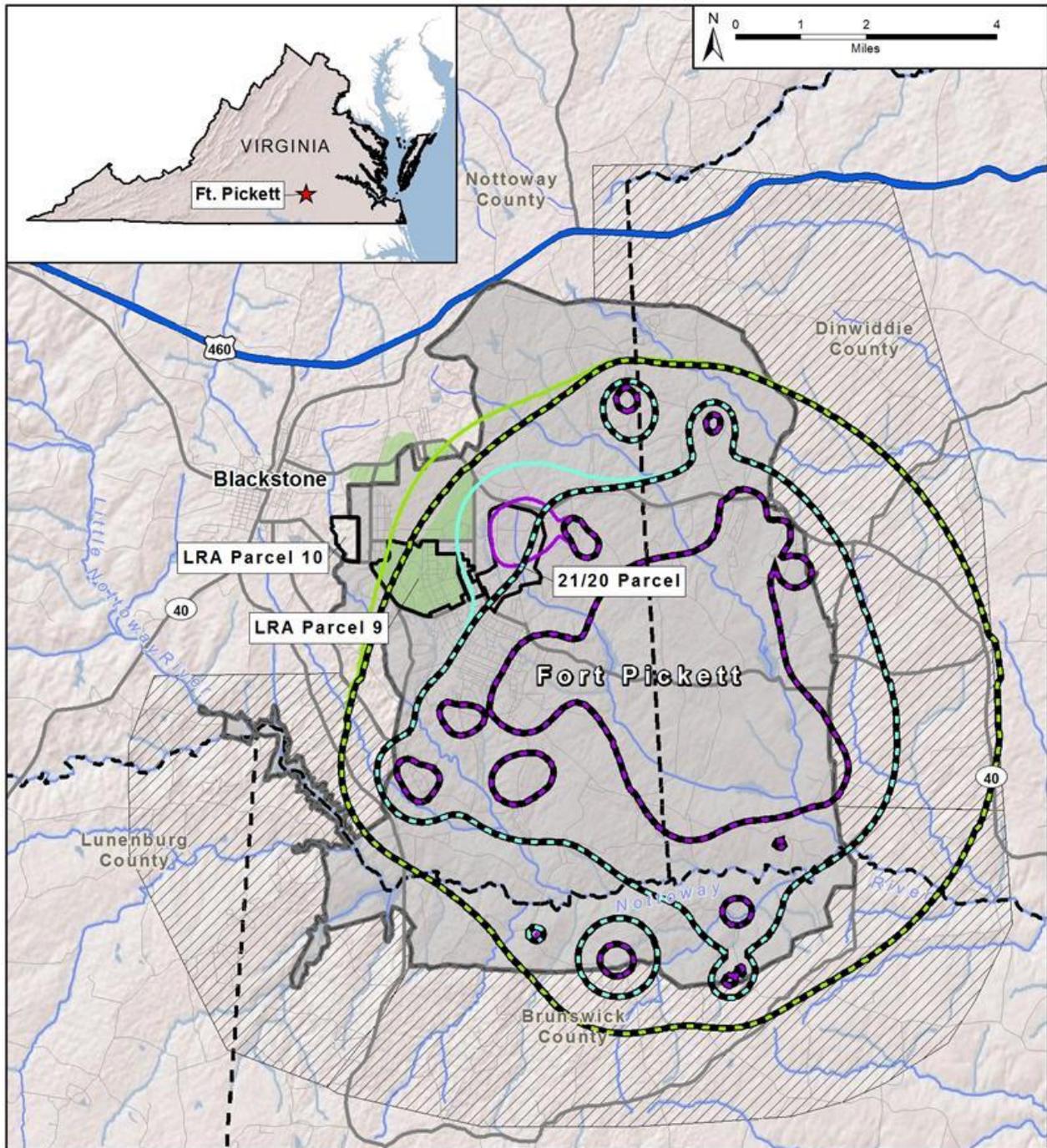
4.2.3.4 Simulators (Demolition)

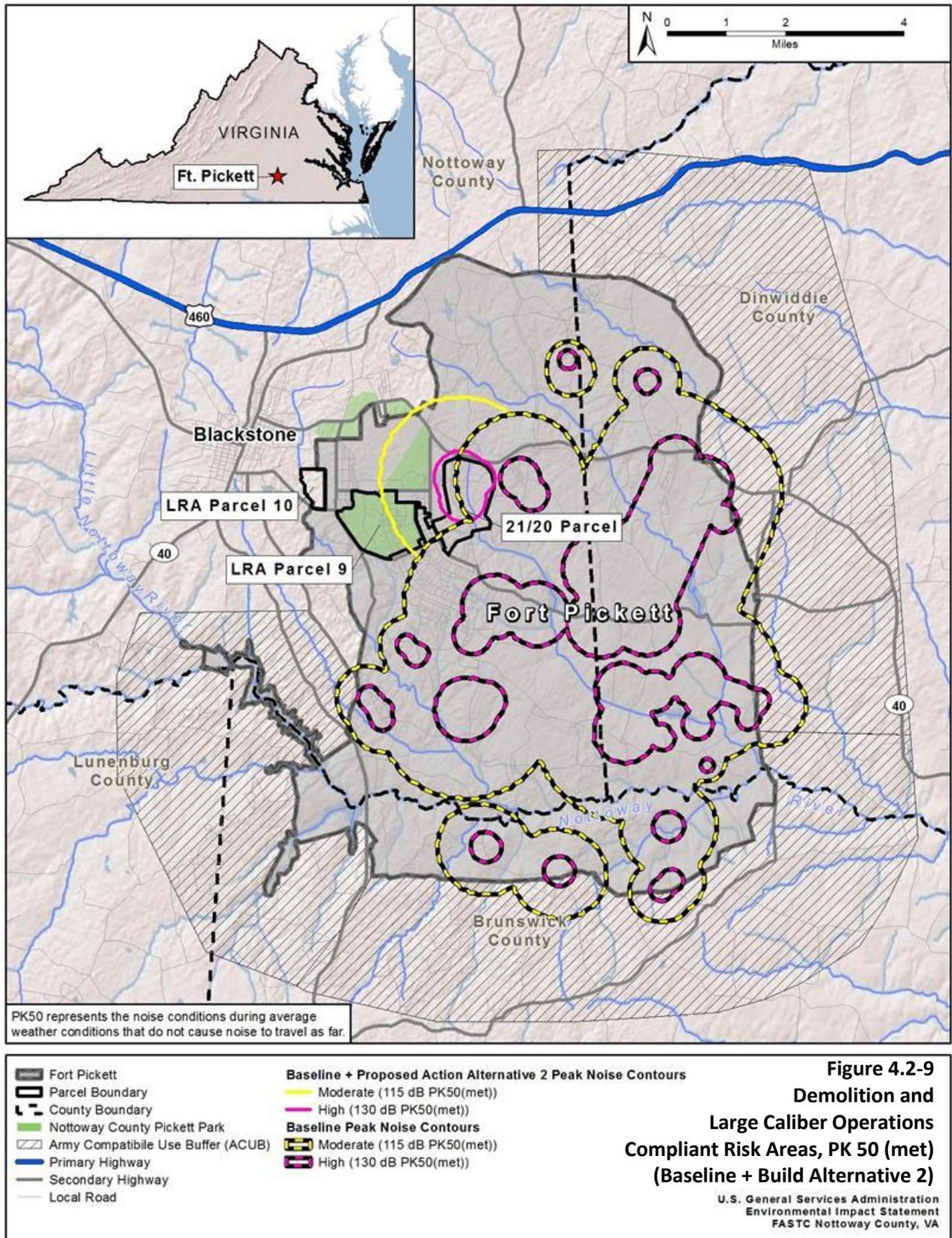
Build Alternative 1

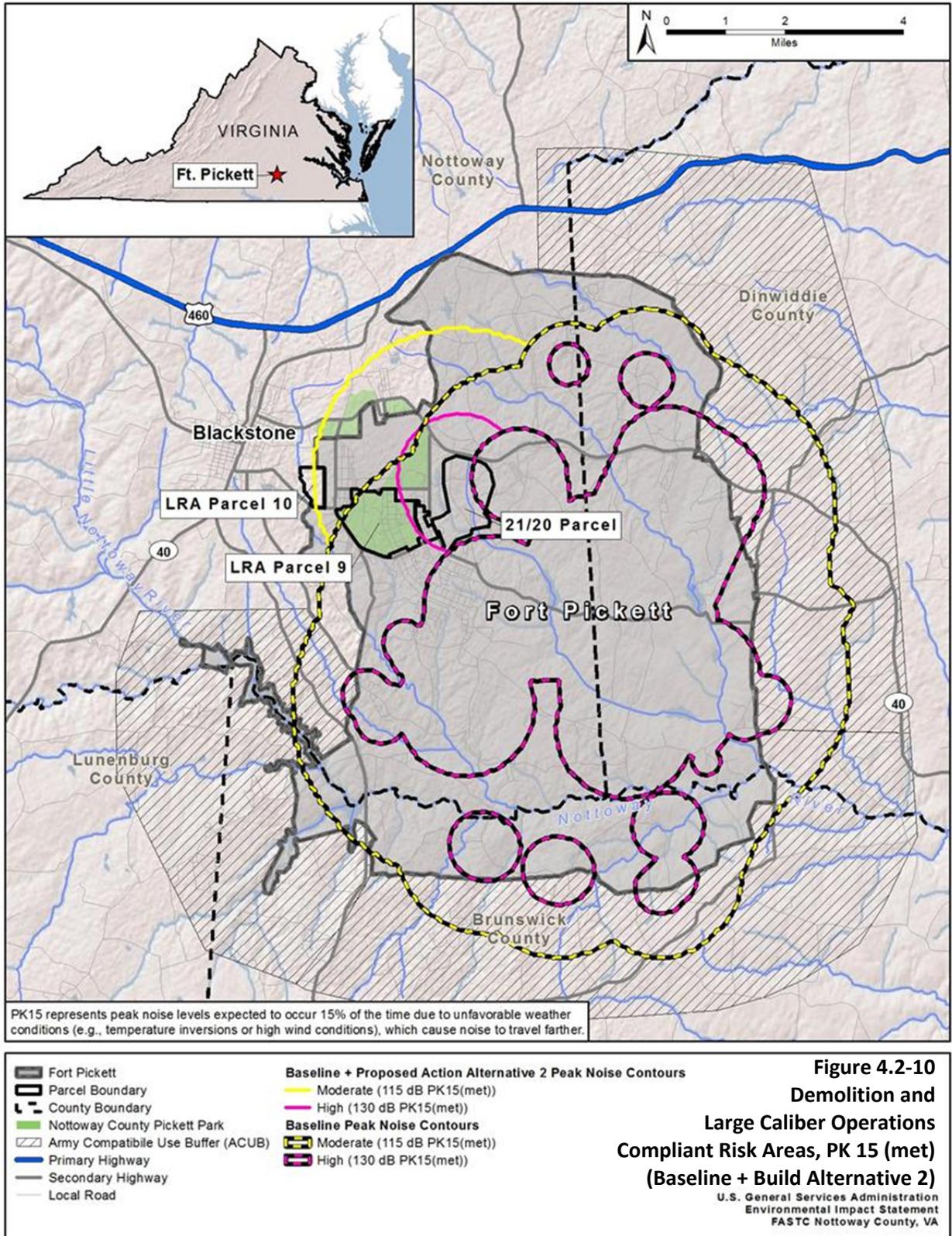
Simulators (flash bangs) are an explosive proposed for use in certain FASTC driver training exercises. Part of the Urban Drive Course (E04) is the Explosives Simulation Alley where it is proposed that approximately 400 simulator events would occur on an annual basis. This number of simulators is below the threshold used to compute annual average noise levels or noise zones; therefore, peak noise levels were modeled to evaluate the risk of complaints from these events. Under Build Alternative 1, range E04 is located in the northeast part of LRA Parcel 9 (refer to **Figure 2.2-1**).

Following are the results of the simulator analysis for Build Alternative 1 and a comparison with the baseline:

- Under the baseline, Moderate Complaint Risk areas (115 dBP) occur on LRA Parcel 9 in the area proposed for E04 due to Fort Pickett demolition and large caliber weapons operations (refer to Figures 3.2-2 & 3.2-3).
- Under 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 & 3.2-3).
- Under Build Alternative 1, Moderate Complaint Risk areas would not change east or south of LRA Parcel 9 where existing VAARNG buildings are located.







Under Build Alternative 1 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.

- Under Build Alternative 1 during infrequent, unfavorable weather conditions (PK15 [met]), High Complaint Risk areas would occur with simulator activity at E04 to within 656 feet from the source and would be contained with LRA Parcel 9 depending on simulator location.
- Under Build Alternative 1, High Complaint Risk areas may extend beyond the northern boundary of LRA Parcel 9, depending on simulator location, but are not expected to impact existing buildings that are located more than 650 feet from this northern boundary.

Because the area currently experiences a similar level of peak noise from baseline operations, simulator activity in LRA Parcel 9 is expected to have a low risk of complaints associated with these same VAARNG buildings and direct impacts would not be significant.

Build Alternative 2 (Preferred Alternative)

For Build Alternative 2, E04 is located in the southeast part of LRA Parcel 9 (refer to **Figure 2.2-2**). Results are similar to those of Build Alternative 1 with the differences noted below.

Following are the results of the simulator analysis for Build Alternative 2:

- High Complaint Risk areas (130 dBP) would generally not extend beyond the LRA Parcel 9 boundary unless simulators were used in the most southeastern part of E04 (within about 650 feet from the existing VAARNG MEDCOM or classroom buildings).
- Moderate Complaint Risk areas (115 dBP) would not differ from the baseline conditions if simulators are operated more than 650 feet away from adjacent buildings.
- Low to Moderate Complaint Risk would occur at the Officer's Club, located approximately 1,500 feet southwest of E04.

Therefore, similar to Build Alternative 1, simulator operations under Build Alternative 2 would not result in a change in the baseline complaint risk levels and impacts.

4.2.3.5 Firing Ranges (Small Caliber Weapons)

Build Alternative 1

There are five small arms ranges proposed, which include one existing outdoor range (R05), proposed to be collocated on the existing Fort Pickett Range 8, three indoor ranges (R02, R03a, and R03b) and one indoor-outdoor range (R04). These ranges accommodate small-caliber weapons such as shotguns, rifles, and pistols and would operate during the daytime only. Details on the number of operations for each weapon are provided in **Appendix G**.

Small caliber weapons noise was evaluated for outdoor and indoor ranges separately using peak sound levels. The single outdoor firing range (R05) 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 indoor ranges include the Indoor Firing Range (R02), One-Story Live Fire Shoot House (R03a), Two-Story Live Fire Shoot House (R03b) and the Baffled Indoor-Outdoor Tactical Combat

Range (R04). Weapons to be fired in these ranges include handguns (.357 magnum, 9mm, and 40 caliber), M16 Rifle (5.56mm), Shotgun (12 gauge), and Machine Guns (9mm, 0.40 caliber, and 0.45 caliber). Operations distributed on each range are provided in **Appendix G**.

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 were 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 1 would not result in significant direct or indirect noise impacts.

Build Alternative 2 (Preferred Alternative)

The operations and associated noise impacts under Alternative 2 would be the same as Build Alternative 1, except the source of noise from firing range buildings R03a and R03b would be located approximately 250 feet northeast of their location under Build Alternative 1.

4.2.3.6 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 4.2-5 identifies the FASTC training facility operations and indicates whether either of the 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 4.2-5. OSHA Occupational Noise Exposure Evaluation for FASTC Facilities

FASTC Training Facilities/Operations	OSHA Occupational Noise Exposure Standard 1910.95	
	Impulsive Sound	Continuous Sound
	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
Firing Ranges (R02, R03a, R03b, and R04)	Range Interior Locations	N/A
Outdoor Firing Range R05	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

An assessment of occupational noise exposure was conducted for all FASTC facilities to identify areas where personnel would potentially be at risk. Build Alternative 1 and Build Alternative 2 would have the same noise exposure and therefore are evaluated together. 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.

Build Alternative 1 and Build Alternative 2 (Preferred Alternative)

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 4.2-5**). 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 1 or Build Alternative 2.

4.2.3.7 No Action Alternative

Under the No Action Alternative, there would be no impacts to the existing noise environment.

4.2.3.8 Mitigation

The use of vegetative buffers would be incorporated into the FASTC design to the extent feasible to minimize noise impacts to the surrounding areas.

To be in regulatory 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.

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

The land use impact analysis is based on operational impacts since construction land use impacts would be temporary.

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 1

Fort Pickett and Nottoway County

Construction under Build Alternative 1 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. 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 not likely. The Nottoway Board of Supervisors has found no conflict between the County's Comprehensive Plan and the proposed FASTC facility (**Appendix C**). Therefore, no significant direct or indirect impacts to local plans of development, land use or zoning would occur in the surrounding areas.

Parcel 21/20

Parcel 21/20 is currently federal land and not zoned. Build Alternative 1 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**).

LRA Parcel 9

LRA Parcel 9 is currently zoned industrial. Build Alternative 1 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, a non-profit 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 working 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 repel 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 1 would be adverse but not significant; Direct impacts to zoning would be minor. No indirect impacts are anticipated.

4.2.4.2 Build Alternative 2 (Preferred Alternative)

Land use impacts under Build Alternative 2 would be the same as those described under Build Alternative 1 for Fort Pickett, Nottoway County, Parcel 21/20 and LRA Parcel 9. Land use impacts for the Grid Parcel and LRA Parcel 10 are discussed.

Grid Parcel

Like Parcel 21/20, the grid parcel is federal land and is not zoned. Build Alternative 2 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 10

LRA Parcel 10 is zone General Business. Like LRA Parcel 9, zoning on Parcel 10 would change to federal land. 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**).

Direct impacts to land use under Build Alternative 2 would be adverse but not significant; direct impacts to zoning would be minor. No indirect impacts are anticipated.

4.2.4.3 No Action Alternative

Under the No Action Alternative, the FASTC facility would not be developed; therefore, there would be no change and no impacts to land uses.

4.2.4.4 Mitigation

Potential impacts to APZs and CZs 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 repel towers) would be limited in the APZs.

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, which 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

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.

What are the estimated economic and fiscal impacts?

- 938 temporary jobs during peak construction in 2017
- 1,938 permanent direct and indirect jobs by 2021
- Peak construction economic output: \$117.9 million in 2017
- Long term operations output: \$131.2 million annually
- Net positive fiscal revenues for Nottoway, Chesterfield, and other counties
- Appendix K provides the complete Economic and Fiscal Impacts Technical Report

Additional direct impacts are generated through non-payroll expenditures and visiting 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. 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 effects²¹. 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 significant if the proposed action:

- Would result in a substantial number of job losses

²¹ 40 C.F.R. 1502.16 (b), 40 C.F.R. 1508.8 (b)

- 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 impacts to children would occur if there was an increased disproportionate environmental, health, or safety risk to children.

Due to the nature of the socioeconomic impacts of this proposed project there would be no difference in impacts between Build Alternative 1 and Build Alternative 2. Therefore, the following section on impacts is applicable to both alternatives and they are not discussed separately.

4.2.5.1 Build Alternative 1 and Build Alternative 2 (Preferred Alternative)

Socioeconomics

The proposed FASTC project would consist of two major phases, a construction phase and an operations phase. Construction of FASTC would last about 7 years: 2014 to 2020. Some FASTC operations would overlap with construction efforts; operations would begin in 2017 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 4.2-6 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 2014 to 2020. Construction would be estimated to begin in 2014 and reach a peak in 2017. At the peak of the construction phase, an estimated 938 FTE jobs would be generated or sustained within the study area (557 direct construction jobs and 381 indirect/induced jobs). After 2017, construction would begin to wind down. During the years 2019 and 2020, an estimated 185 jobs would be generated in the study area as a result of the construction of FASTC.

Table 4.2-6. Estimated FTE Employment from Construction, 2014-2020

	2014	2015	2016	2017	2018	2019	2020
Direct	304	304	447	557	254	110	110
Indirect/Induced	208	208	304	381	173	75	75
Total	512	512	751	938	427	185	185

The total direct and indirect/induced positions would represent less than 1% of the 2010 study area labor force. The peak year direct construction jobs would represent less than 1% of the approximately 18,000 study area construction positions (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 4.2-7 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 2017, nearly \$50 million in labor income would be generated within the study area. After 2017, construction would begin to wind down. During the years 2019 and 2020, an estimated \$9.8 million in labor income would be generated in the study area as a result of the construction of the FASTC.

Table 4.2-7. Estimated Labor Income From Construction, 2014-2020, Constant 2012 Dollars

	2014	2015	2016	2017	2018	2019	2020
Direct	\$18,037,566	\$18,037,566	\$26,514,139	\$33,096,391	\$15,058,825	\$6,541,019	\$6,541,019
Indirect/Induced	\$9,045,823	\$9,045,823	\$13,316,647	\$16,596,627	\$7,551,987	\$3,280,315	\$3,280,315
Total	\$27,083,389	\$27,083,389	\$39,830,787	\$49,693,018	\$22,610,813	\$9,821,334	\$9,821,334

Economic output associated with the proposed construction would be \$64.3 million in 2014 and 2015 and increase to \$117.9 million at peak construction in 2017 (**Table 4.2-8**). Economic output from construction would decline after 2017, with estimated economic output of \$53.7 million in 2018 and then \$23.3 million in 2019 and 2020.

Table 4.2-8. Estimated Economic Output From Construction, 2014-2020, Constant 2012 Dollars

	2014	2015	2016	2017	2018	2019	2020
Direct	\$37,082,907	\$37,082,907	\$54,594,418	\$68,041,908	\$30,959,001	\$13,447,491	\$13,447,491
Indirect/Induced	\$27,197,280	\$27,197,280	\$39,952,771	\$49,899,236	\$22,705,895	\$9,862,634	\$9,862,634
Total	\$64,280,187	\$64,280,187	\$94,547,189	\$117,941,144	\$53,664,896	\$23,310,125	\$23,310,125

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 were not analyzed.

OPERATIONS PHASE

Table 4.2-9 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 2018 and reach a steady-state by 2021. At the steady-state phase, an estimated 1,101 direct jobs and 837 indirect/induced jobs would be generated or sustained within the study area. Total operations-related employment would increase from 978 in 2018 to a steady-state total of 1,938 jobs in 2021.

Table 4.2-9. Estimated FTE Employment from Operations, 2018-2021

	2018	2019	2020	2021*
Direct	557	793	947	1,101
Indirect/Induced	421	590	714	837
Total	978	1,383	1,660	1,938

Notes: *Estimate for 2021 represents steady-state operations. This level of jobs would be expected to continue annually for the foreseeable future.

Table 4.2-10 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 2018, the first year of FASTC operations, 248 FASTC employees would be expected to transfer to the region. In 2019, an additional 106 would transfer, in 2020 an additional 71 would transfer, and in 2021 an additional 72 would transfer. In total, 497 employees would transfer from other locations to the region to work at FASTC.

Table 4.2-10. FASTC Transfer Employees, 2018-2021

	2018	2019	2020	2021*
Annual Increase	248	106	71	72
Total	248	354	425	497

Source: DOS 2012

Note: * 2021 transfer employees represent a steady-state. This number of transfer employees would be expected to continue annually 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 (US 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 4.2-11 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 an approximately 1.3% and less than 1% increase in Nottoway and Chesterfield populations, respectively. In 2018, the first year of FASTC operations, population of the study area would be expected to increase by 639. In 2019, population would increase by 274, in 2020 by 185, and in 2021 by 184. In total, population related to FASTC transfer employees from other locations would add 1,282 people to the study area.

Table 4.2-11. Total New Population to the Study Area

	2018	2019	2020	2021*
Annual Increase	639	274	185	184
Total	639	913	1,098	1,282

Note: * 2021 new population represents a steady-state. This number of new population would be expected to continue annually for the foreseeable future.

Table 4.2-12 presents impacts in terms of estimated labor income that would result from the operations of FASTC. Operations would be estimated to begin in 2018 and reach a steady-state by 2021. At the steady-state phase, an estimated \$115.6 million in direct labor income and \$32.2 million in indirect/induced labor income would be generated as a result of FASTC operations. Labor income from operations would increase from an estimated \$70 million in 2018 to a steady-state total of \$147.9 million in 2021.

Table 4.2-12. Estimate Labor Income From Operations, 2018-2021

	2018	2019	2020	2021*
Direct	\$53,932,249	\$78,798,613	\$97,216,674	\$115,634,736
Indirect/Induced	\$16,370,243	\$22,816,012	\$27,528,451	\$32,240,893
Total	\$70,302,492	\$101,614,625	\$124,745,126	\$147,875,629

Note: *Estimate for 2021 represents steady-state operations. This level of labor income would be expected to continue annually for the foreseeable future.

Table 4.2-13 presents impacts in terms of economic output that would result from the operations of FASTC. At steady-state operations in 2021, \$26.5 million in direct economic output and \$104.7 million in indirect/induced economic output would be generated as a result of FASTC operations. Direct economic output would be smaller than indirect/induced economic output because the bulk of FASTC operational expenditures would be associated with payroll, which generates indirect/induced output through personal expenditures. Total economic output would increase from \$76.7 million in 2018 to a steady-state total of \$131.2 million in 2021.

Table 4.2-13. Estimated Economic Output From Operations, 2018-2021, Constant 2012 Dollars

	2018	2019	2020	2021*
Direct	\$23,970,212	\$25,580,151	\$26,035,942	\$26,491,732
Indirect/Induced	\$52,711,955	\$73,823,938	\$89,262,996	\$104,702,063
Total	\$76,682,167	\$99,404,089	\$115,298,938	\$131,193,795

Note: *Estimate for 2021 represents steady-state operations. This level of labor income 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 4.2-14** identifies industries that would be expected to benefit from increased business activity. 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, contracted services from local hotels and motels, 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 4.2-14**.

Table 4.2-14. 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
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 4.2-15 presents economic impacts in terms of the annual FTE jobs that would result from the combined construction and operations of FASTC. As shown in **Table 4.2-15**, the combined FTE jobs generated by the Proposed Action would peak in the steady-state year of 2021 (at an estimated 1,938 FTE jobs), and continue at that level for the foreseeable future.

Table 4.2-15. Estimated FTE Employment from Combined Construction and Operations 2014-2021

	2014	2015	2016	2017	2018	2019	2020	2021*
Direct	304	304	447	557	811	903	1,057	1,101
Indirect/Induced	208	208	304	381	595	665	789	837
Total	512	512	751	938	1,405	1,568	1,845	1,938

Note: *Estimate for 2021 represents steady-state operations. This level of jobs would be expected to continue annually for the foreseeable future.

Table 4.2-16 and **Figure 4.2-11** show the beneficial economic output impacts from the combined construction and operations of FASTC. Construction is estimated to begin in 2014 and reach a peak in 2017 (\$117.9 million). Operations are estimated to begin in 2018 and reach a steady-state by 2021 (\$131.2 million). From 2018 to 2020 construction and operations would take place simultaneously. During these years economic output impacts related to operational activities would exceed impacts related to construction.

Table 4.2-16. Estimated Economic Output From Combined Construction and Operations, 2014-2021, Constant 2012 Dollars

	2014	2015	2016	2017	2018	2019	2020	2021*
Direct	\$37,082,907	\$37,082,907	\$54,594,418	\$68,041,908	\$54,929,213	\$39,027,642	\$39,483,433	\$26,491,732
Indirect/Induced	\$27,197,280	\$27,197,280	\$39,952,771	\$49,899,236	\$75,417,850	\$83,686,572	\$99,125,630	\$104,702,063
Total	\$64,280,187	\$64,280,187	\$94,547,189	\$117,941,144	\$130,347,063	\$122,714,214	\$138,609,063	\$131,193,795

Notes: *Estimate for 2021 represents steady-state operations. This level of jobs would be expected to continue annually for the foreseeable future.

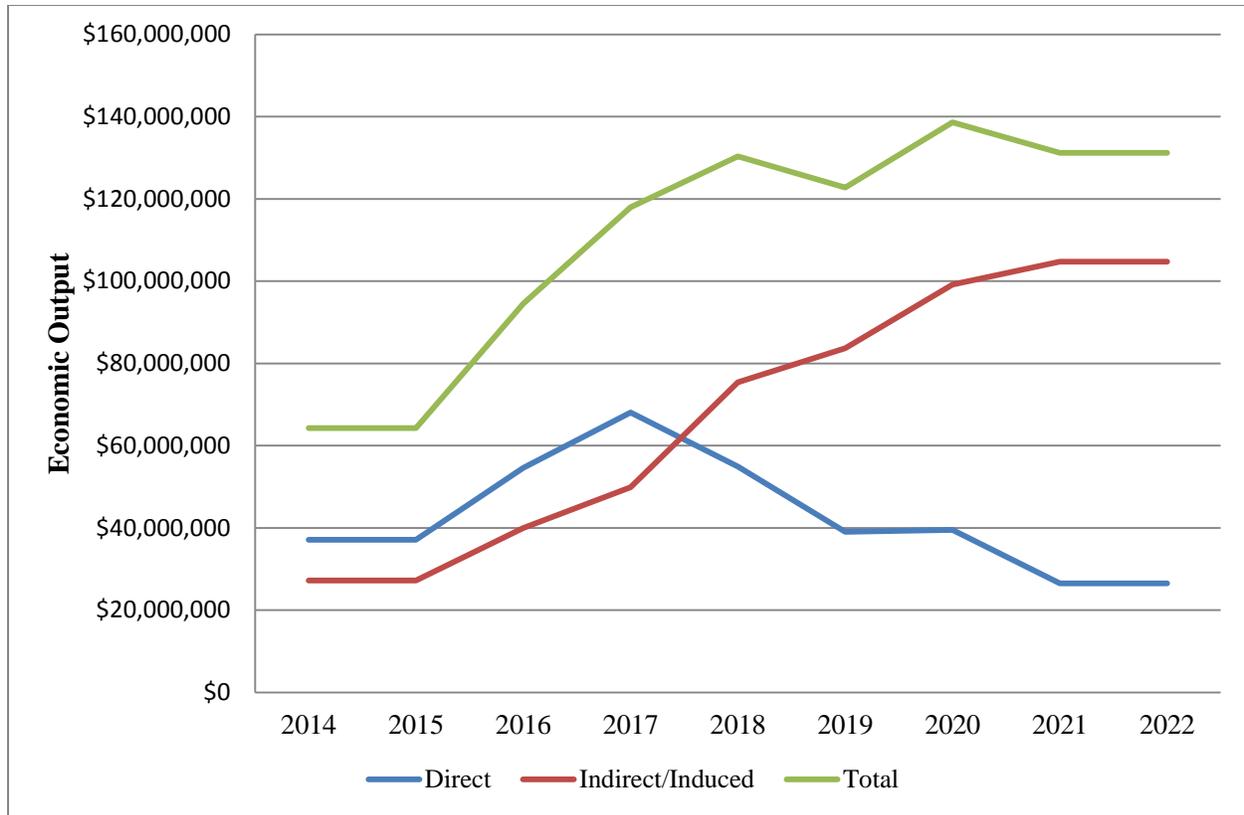


Figure 4.2-11. Economic Output Impact from Combined Construction and Operations, 2014-2022, Constant 2012 Dollars

Induced Growth

BUSINESS GROWTH

Induced business growth resulting from employees and trainees 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. Chesterfield 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).

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. 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 EIS process and other public outreach undertaken by GSA and DOS, induced business growth would be a beneficial impact in the study area.

Based on the expected 1,282 new people estimated to move to the study area, there may be limited additional growth inducement-related effects associated with approximately 350 FASTC employees expected to live in Chesterfield County and commute back and forth to Nottoway County for work. Induced growth from commuter traffic would include businesses such as gasoline stations and eating and drinking establishments. Increased commuter trips would be likely on U.S. 460, Cox Road, and other roadways from the north and east. This new commuter base would not likely be a sole driver of induced growth; rather induced growth would be more likely to occur in conjunction with existing commuting and other potential growth in the same areas. 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. 460 in Dinwiddie County. These areas are not currently targeted as growth areas; therefore, unless the counties choose to encourage development and redirect growth strategies, cumulative induced growth effects would likely be minimal in the areas along commuter routes.

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 approximately 1% of the total housing units and 24% of the available housing units in Nottoway County. In Chesterfield County, increased demand would represent less than 1% of the total housing units and 7.5% 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 such a small portion of available housing. The phasing of personnel transfers over four years beginning in 2018 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 and one nonprofit entity 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 business would be required under Alternative 1 or Alternative 2, 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 relocation²². 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 payment, 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 of the properties that would need to be relocated is Madeline's House—a shelter for victims of domestic violence and sexual abuse. There were no comparable facilities identified for the shelter and relocation would be challenging. GSA met with Madeline's House, Nottoway County, VAARNG, three representatives from other counties that use the service, and a representative from the Commonwealth of Virginia on April 24, 2012, and May 22, 2012 to discuss a variety of topics surrounding federally assisted relocation services. The Commonwealth's current policies on shelter size and regulations and potential sources of funds for the shelter to relocate were reviewed. Madeline's House is strategizing a plan to obtain funds for relocation. GSA would continue to work with all parties toward a satisfactory solution for the future of Madeline's House to ensure there would be no significant adverse impacts resulting from its displacement.

Schools

An estimated 288 new residents to the region would be school-aged children. This estimate assumes, based on the national average household size of 2.58 (Census 2010a), that the 497 FASTC employees moving to the region would each have one spouse and 0.58 school-aged children. The estimate of 288 is

²² In accordance with 49 CFR Part 24

equal to the number of relocating employees (497) multiplied by 0.58. Of these, 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 43 new students in Nottoway County schools, 201 in Chesterfield County schools, and 44 in schools of the other counties. Nottoway County has approximately 2,450 students enrolled in their system, and the additional 44 students would represent a minor increase of 1.8%. Total enrollment at Chesterfield County schools is 58,000 students (Chesterfield County Public Schools 2012), and the estimated 201 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. Since more FASTC transfer employees would live in Chesterfield County, local government revenue and local government costs would be greater than in Nottoway County. Local governments in both counties would benefit from positive net revenues as a result of FASTC operations.

Table 4.2-17 shows projected local government revenue, cost, and net revenue (revenue minus cost) for Nottoway County from 2018 to 2021. In 2021, the first year of FASTC steady-state operations, local governments in Nottoway County would collect about \$1.8 million in revenue and expend about \$580 thousand. Steady-state total net revenue for local governments would be about \$1.2 million. In addition to revenues presented in **Table 4.2-17**, 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, it is not included in the fiscal analysis.

Table 4.2-17. Nottoway County Local Government Revenue, Cost, and Net Revenue, 2018 to 2021, Constant 2012 Dollars

	2018	2019	2020	2021*
Revenue	\$1,177,406	\$1,486,404	\$1,656,491	\$1,826,578
Cost	\$289,454	\$413,816	\$497,448	\$581,080
Net Revenue	\$887,952	\$1,072,588	\$1,159,043	\$1,245,498

Notes: * 2021 local government revenue, cost, and net revenue represents a steady-state. These numbers would be expected to continue annually for the foreseeable future.

Table 4.2-18 shows projected local government revenue, cost, and net revenue (revenue minus cost) for Chesterfield County from 2018 to 2021. In 2021, the first year of FASTC steady-state operations, local governments in Chesterfield County would collect about \$4.37 million in revenue and expend about \$3.26 million. Net revenue for local governments would be about \$1.1 million.

Table 4.2-18. Chesterfield County Local Government Revenue, Cost, and Net Revenue, 2018 to 2021, Constant 2012 Dollars

	2018	2019	2020	2021*
Revenue	\$2,388,773	\$3,186,325	\$3,777,473	\$4,368,622
Cost	\$1,621,978	\$2,318,850	\$2,787,489	\$3,256,128
Net Revenue	\$766,795	\$867,475	\$989,984	\$1,112,494

Notes: * 2021 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 achieve environmental justice.

There are no adverse impacts to the natural or built environments that would result from the project that would affect the minority or low income populations of the study area. However, as a result of the proposed land acquisition, there would be five occupied residential units, nine businesses and one nonprofit entity 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 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 Alternatives 1 or 2 would not result in 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. 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. Peak noise events of 115 dB may occur infrequently but would be below the OSHA 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.

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, GSA would coordinate facility planning and operations with local officials and planners, as appropriate, to maximize positive impacts. Where feasible, GSA would also seek to identify 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 Picket would be implementation of a process to notify the daycare center in advance of peak noise events.

4.2.6 Traffic and Transportation

The Traffic Impact Analysis (**Appendix H**) analyzed Phase I, proposed to be complete by 2017 and full build-out proposed to be completed and operational in 2020. The analysis of traffic impacts was performed for 2017 and in 2020 for the No Action Alternative (i.e., No Build), Build Alternative 1, and Build Alternative 2. The Traffic Impact Analysis analyzed the study intersections listed in **Section 3.2.6.1** and for the build alternatives analyzed the access points to the proposed FASTC facilities. Impacts would be considered significant if the alternative results in unacceptable traffic congestion or places a burden on the capacity of transportation facilities.

4.2.6.1 Build Alternative 1

Traffic

At the completion of Phase 1 in 2017, the FASTC facilities would employ 533 persons and train approximately 400 students per day during peak periods (typically occurring during the summer months). In 2020, the proposed full operating year, FASTC would employ 1,070 persons and train an average of 500-700 students per day during peak periods. These numbers, along with assumptions about the method of travel for staff and students, were used to project the number of vehicle trips generated by the FASTC facilities during the a.m. and p.m. peak hours (used in the traffic analyses) and on a daily basis; this is called average daily traffic (ADT). It was calculated that ADT volumes generated by Alternative 1 would be 1,931 vehicles per day (vpd) in 2017 and 3,512 vpd by 2020 (**Appendix H**).

The a.m. and p.m. peak hour trips were then distributed throughout the study area, based on predicted travel routes. It was assumed that the overall trip distributions from the surrounding areas would be as follows:

- 75% to/from the northeast via US Route 460 (Richmond and Washington DC);
- 2% to/from the east via VA Route 40;
- 2% to/from the south via VA Route 46;
- 2% to/from the southwest VA Route 40;
- 14% to/from the west and northwest via US Route 460 (Farmville, Burkeville, and Crewe);
and
- 5% to/from within the Town of Blackstone.

It was also assumed that 90% of the trips would enter from the Main Gate on Military Road and 10% would travel through Blackstone and enter through the West Gate to travel to the FASTC Main Campus.

To determine the impact on the study intersections the FASTC trips were added to the future No Build traffic volumes. The results of the Build Alternative 1 traffic volume analysis are as follows.

2017 Build Alternative 1:

- No direct or indirect adverse effect on the three signalized intersections within the town of Blackstone; intersections would continue to operate overall at acceptable levels, LOS C or better. The eastbound and westbound movements at the intersection of South Main Street and 8th Street/West Entrance Road would continue to operate at LOS D.

- The movements at the unsignalized intersections would continue to operate at LOS C or better during the a.m. and p.m. peak hours with the exception of one turning movement.
- Minor direct effect on US Route 460 and Cox Road/Yellowbird Road, the southbound left-through-right movement would change from LOS B to LOS D during the a.m. peak hour. This level of operation is still considered acceptable.
- Minor direct effect associated with required abandonment of the VDOT maintained roadways within LRA Parcel 9.

2020 Build Alternative 1:

- No direct or indirect adverse effect on operations of most signalized intersection movements, which would continue to operate as projected for the 2020 No Build – LOS C or better overall during the a.m. and p.m. peak hours. The overall intersection delay would experience a slight increase which would be a minor effect. South Main Street and 8th Street/West Entrance Road would continue to have two movements operating at LOS D in the p.m.
- Direct adverse effect on the westbound through-left movement of West Entrance Road /8th Street at South Main Street which would change from LOS D to LOS E, which is unacceptable.
- No direct or indirect adverse effect on operations of the majority of unsignalized intersection movements, which would operate at LOS C or better during the a.m. and p.m. peak hours, with the exception of the following two intersections.
- Direct adverse effect at US Route 460 at Cox Road/Yellowbird Road:
 - The northbound left-through-right movement from Cox Road to US Route 460 would operate at LOS E during the a.m. peak hour and LOS F during the p.m. peak hour.
 - The southbound left-through-right movement from Yellowbird Road to US Route 460 would operate at LOS F during the a.m. peak hour and LOS D during the p.m. peak hour.
- Direct adverse effect at Military Road at Darvills Road:
 - The northbound left turn movement from Military Road to Darvills Road would operate at LOS F during the a.m. peak hour.
 - The northbound through movement from Military Road to Darvills Road would operate at LOS E during the p.m. peak hour.
 - The southbound left-through-right movement from Military Road to Darvills Road would operate at LOS F during the a.m. peak hour.
- Potential direct adverse effect at West Entrance Road and Military Road within Fort Pickett. LOS remains acceptable (LOS A, B, or C); however, due to significant increase in volume of the through movements on Military Road (southbound through movement volume by 400% during the a.m. peak hour and the northbound through movement volume by 625% during the p.m. peak hour), the northbound left turn onto West Entrance Road and the eastbound left turn onto Military Road would be more difficult.

The results of the Fort Pickett gate analysis for Alternative 1 in 2017 and 2020 are as follows:

- The increase in traffic in 2017 would not result in the number of vehicles per hour per lane exceeding the VAARNG guideline for one guard per lane at either the Main Gate or West Gate.
- The increase in traffic in 2020 would exceed the capacity of one guard at the Main Gate during peak a.m. hours and may result in delays at the gate. Capacity of one guard at the West Gate would not be exceeded in 2020.

In summary, Alternative 1 would not have direct or indirect adverse impacts on the majority of intersections analyzed in the study. However, based on the decreasing LOS between the existing conditions (2012) and the future conditions in 2020, Alternative 1 would result in significant adverse impacts at three intersections without the implementation of mitigation. In addition, Alternative 1 would result in a significant increase in traffic volume on Military Road which, although LOS would be acceptable, would impede turn movements at West Entrance Road in the a.m. and p.m. peak hours.

Transportation

Build Alternative 1 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 Build Alternative 2

Traffic

The number of staff and trainees and corresponding a.m. and p.m. peak hour trips and ADT traveling to/from the proposed site would be the same for Build Alternative 2 as for Build Alternative 1. The distribution of trips from the surrounding area and the routes that would be taken were also assumed to be the same as Build Alternative 2, although distribution internal to Fort Pickett would vary based on the location of the FASTC Main Campus. Therefore, the results of the Build Alternative 2 traffic volume analysis are identical to those of Build Alternative 1 for most intersections, as follows.

2017 Build Alternative 2:

- Same as Build Alternative 1 for all signalized and unsignalized intersections.

2020 Build Alternative 2:

- Same as Build Alternative 1 for signalized and unsignalized intersections outside Fort Pickett.
- No direct or indirect adverse effect with Build Alternative 2 at West Entrance Road and Military Road within Fort Pickett because the location of the proposed FASTC Main Campus on LRA Parcel 10 avoids this intersection.
- Unacceptable operations for exiting traffic from the proposed FASTC Main Campus at Military Road and West 10th Street – eastbound left-through-right movement would operate at LOS F during the p.m. peak hour because of the volume of traffic exiting the FASTC Main Campus onto Military Road.
- Minor direct effect associated with required abandonment of the VDOT maintained roadways within LRA Parcel 9.

The results of the Fort Pickett gate analysis for Build Alternative 2 in 2017 and 2020 are the same as described for Build Alternative 1.

In summary, as with Build Alternative 1, Build Alternative 2 would not have direct adverse impacts on the majority of intersections analyzed in the study, but would result in significant direct adverse impacts at three intersections without the implementation of improvements. In addition, traffic exiting the FASTC Main Campus during the p.m. peak hour would experience LOS F operating conditions.

Transportation

As discussed for Build Alternative 1, Build Alternative 2 would likely result in an increase in the use of Blackstone Area Transit (BABS) services at Fort Pickett. It is expected that the service would be able to meet this demand and the impact would be minor. No other transportation services would be affected.

4.2.6.3 No Action Alternative

Traffic

Under the No Action Alternative, FASTC would not be constructed and related increases in traffic would not occur. The Traffic Impact Analysis analyzes the No Action Alternative as the future No Build condition (**Appendix H**). Although the traffic impact study does indicate that without the construction of FASTC the area would continue to grow and there would be some impacts to the capacity of the study intersections but this would not affect Level of Service (LOS). In the 2017 and 2020, the three signalized intersections would continue to operate at a LOS C or better and all movements at unsignalized intersections would continue to operate at LOS B or better during a.m. and p.m. peak hours. The following turning movements at the intersection of West Entrance Road/8th Street at South Main Street would continue to operate at a LOS D:

- Eastbound through-left movement during p.m. peak hour
- Eastbound right-turn movement during p.m. peak hour
- Westbound through-left movement during p.m. peak hour

The traffic analysis did not indicate any changes in LOS at the study intersections between 2017 and 2020. The No Action Alternative would have no direct or indirect impact on traffic.

Transportation

There would be no direct or indirect effects on BABS services under the No Action Alternative.

4.2.6.4 Mitigation

Traffic

Under Build Alternative 1 or 2, construction on LRA Parcel 9 would require the abandonment of the VDOT maintained roadways within LRA Parcel 9 that would require coordination with VDOT and the Nottoway County Board of Supervisors.

The traffic analysis evaluated measures that have potential to mitigate future traffic impacts caused by the proposed project. The following measures would be considered to minimize or mitigate impacts of Build Alternative 1 or 2.

Build Alternatives 1 and 2 Travel Demand Management Measures

Under Build Alternative 1 or 2, implementing measures that reduce the volume of vehicular traffic on roadways and at intersections during peak hours may successfully reduce congestion; these measures are called travel demand management. The following measures would be considered to minimize significant traffic impacts at intersections and the Fort Pickett gates:

- Scheduling FASTC arrival and departure times to avoid the VAARNG peak arrival and departure times to the extent feasible would spread out the peak arrival and departure volumes over a longer period and result in the following:
 - Fort Pickett Main Gate – avoid impacts to guard capacity during the a.m. peak period.
 - US Route 460 and Cox Road/Yellowbird Road – minimize impacts to traffic operations by reducing average delay.
 - Darvills Road and Military Road – minimize impacts to traffic operations by reducing average delay.

Build Alternative 1 Potential Intersection Improvements

The adversely impacted intersections were analyzed to determine which improvements have potential to mitigate projected traffic impacts. Left and right turn lane and signal warrant analyses were conducted according to Virginia Department of Transportation (VDOT) standards and the 2009 Manual on Uniform Traffic Control Devices. Traffic analyses were revised with the potential improvements in place to determine if traffic operations at the impacted intersections could be improved. The following types of potential intersection improvements were evaluated:

- **Addition of new turn lanes:** installation of turn lanes would involve modifying existing pavement markings to add a turn lane or widening of the pavement at the intersections to add a turn lane.
- **Extending turn lanes to provide additional storage:** an existing turn lane can be made longer so that there is sufficient room for vehicles to move out of the through lane of traffic while waiting to turn, thereby reducing congestion at the intersection by allowing through vehicles to proceed unimpeded.
- **Intersection control modifications:** installation of “STOP” signs and “STOP AHEAD” signs on approaches not currently required to stop to create a four-way stop or switching the stop control from approaches currently required to stop to approaches that are currently free flowing to improve overall intersection operations.
- **Traffic signal modifications:** adjustment of signal timing to improve flow and reduce delay.

The following intersection improvements were evaluated for 2020 Build Alternative 1 traffic volumes. GSA and DOS would coordinate with VDOT, Nottoway County, the Town of Blackstone, and VAARNG on the consideration of these improvements:

- **Unsignalized intersection of US Route 460 and Cox Road/Yellowbird Road:**
 - Extend the westbound left turn lane to provide 500-feet of storage (i.e., lane outside the through lane for vehicles to wait to turn) with a 200-foot taper.

- Install a 200-foot northbound left turn lane with a 200-foot taper (to serve left turns and through movements).
- **Unsignalized intersection of Cox Road and Military Road**
 - Install a 200-foot westbound left turn lane with a 200-foot taper.
- **Unsignalized intersection of Darvills Road and Military Road:**
 - Extend the eastbound right turn lane to provide 200-feet of storage with a 200-foot taper. This improvement would correct an existing deficiency that would be required for future traffic conditions with or without Build Alternative 1.
 - Extend the northbound left turn lane to provide 200-feet of storage with a 200-foot taper.
 - Extend the northbound right turn lane to provide a 200-foot taper.
 - Switch the stop control from Military Road approaches to the Darvills Road approaches.
 - Remove the existing red flashing beacon and replace with a yellow and red flashing beacon (yellow for Military Road and red for Darvills Road) and install “STOP AHEAD” signs on both approaches of Darvills Road.
- **Unsignalized intersection of Military Road and West Entrance Road:**
 - Install a 200-foot northbound left turn lane with a 200-foot taper.
 - Install a 200-foot eastbound right turn lane with a 200-foot taper.
- **Signalized intersection of West Entrance Road/8th Street at South Main Street:**
 - Modify the traffic signal timing for the westbound through/left movement.
- **Unsignalized intersection of West Entrance Road and Military Road:**
 - Install a 200-foot northbound left turn lane with a 200-foot taper.
 - Install a 200-foot eastbound right turn lane with a 200-foot taper.

The turn lane extensions at the intersections of US Route 460 at Cox Road/Yellowbird Road and Darvills Road at Military Road would bring the four existing turn lane treatments up to current VDOT standards.

The northbound left-through movement from Cox Road and the southbound left-through-right movement from Yellowbird Road would operate at LOS F during the a.m. peak hour even with mitigation. However, due to low volumes for these movements, further improvement using a traffic signal is not warranted or recommended because of the minimal benefit to the failing movement and resulting reduction in LOS of the other movements that would otherwise operate with acceptable LOS.

Build Alternative 2 (Preferred Alternative) Potential Intersection Improvements

The following intersection improvements were evaluated for 2020 Build Alternative 2 traffic volumes. GSA and DOS would coordinate with VDOT, Nottoway County, the Town of Blackstone, and VAARNG on the consideration of these improvements:

- All improvements listed for Build Alternative 1 would also apply to Build Alternative 2, except at the intersection of Military Road and West Entrance Road where improvements would not be needed under Build Alternative 2.

- Unsignalized intersection of Military Road and West 10th Street at the proposed FASTC Main Campus access:
 - Install a 200-foot southbound right turn lane with a 200-foot taper.
 - Convert the existing two-way stop to a four-way stop and install “STOP AHEAD” signs on both approaches of Military Road.

As indicated for Build Alternative 1, the turn lane extensions at the intersections of US Route 460 at Cox Road and Darvills Road at Military Road under Build Alternative 2 would bring the four existing turn lane treatments up to current VDOT standards. Also, as with Build Alternative 1, under Build Alternative 2 the northbound left-through movement from Cox Road and the southbound left-through-right movement from Yellowbird Road would operate at LOS F during the a.m. peak hour even with mitigation, but as explained above under Build Alternative 1, due to low traffic volumes, a traffic signal is not warranted.

Under Build Alternative 2, the addition of the second access to the Main Campus on Military Road minimizes trips through the town of Blackstone and the use of the Fort Pickett West Gate.

Table 4.2-19 provides a summary of the potential intersection improvement measures and resulting LOS if the improvements were to be implemented for Build Alternative 1 or Build Alternative 2. The table shows that with the improvements, all intersections would operate at acceptable LOS with the exception of the northbound left-through movement from Cox Road and the southbound left-through-right movement from Yellowbird Road at US Route 460. The left turn movement would operate at LOS F during the a.m. peak hour even with mitigation. The only other improvement possible would be a traffic signal; however, a signal warrant analysis found that using a traffic signal would not be effective because improving the movement for the low traffic volume would degrade the LOS for the higher volume through movement.

Transportation

The need for mitigation for minor impacts from increased demand for BABs services under Build Alternatives 1 or 2 is not anticipated.

Table 4.2-19. Summary of Potential Traffic Impact Mitigation in 2020 – Alternatives 1 and 2

Intersection and Improvement	Build Alternative 1	Preferred Build Alternative 2	2020 Build LOS		2020 Build LOS with Improvement		
			a.m.	p.m.	a.m.	p.m.	
West Entrance Road/8th Street at South Main Street							
Modify traffic signal timings for westbound left/through movement	✓	✓	E	D	C	D	
US Route 460 and Cox Road/Yellowbird Road							
Extend the westbound left turn lane to provide 500-feet of storage with a 200-foot taper ¹	✓	✓	B	A	B	A	
Install a 200-foot northbound left turn lane with a 200-foot taper (to serve left turns and through movements)	✓	✓	E	F	D ²	C	
Cox Road and Military Road							
install a 200-foot westbound left turn lane with a 200-foot taper	✓	✓	N/A	N/A	A	A	
Darvills Road and Military Road							
Extend the eastbound right turn lane to provide 200-feet of storage with a 200-foot taper ³	✓	✓	EB: A	EB: A	EB: C ⁵	EB: D ⁵	
Extend the northbound left turn lane to provide 200-feet of storage with a 200-foot taper ⁴			WB: A	WB: A	WB: D ⁵	WB: D ⁵	
Extend the northbound right turn lane to provide a 200-foot taper ⁴			NB: F	NB: E	NB: A	NB: A	
Switch stop control from Military Road approaches to the Darvills Road approaches; replace red flashing beacon with yellow flashing beacon for Military Road and red for Darvills Road; install "STOP AHEAD" signs on both approaches of Darvills Road.			SB: F	SB: C	SB: A	SB: A	
West Entrance Road and Military Road							
Install a 200-foot northbound left turn lane with a 200-foot taper	✓	N/A	A	A	A	A	
Install a 200-foot eastbound right turn lane with a 200-foot taper	✓	N/A	C	B	B	B	
FASTC Main Campus/West 10th Street and Military Road							
Install a 200-foot southbound right turn lane with a 200-foot taper	N/A	✓	EB: C	EB: F	EB: A	EB: C	
Convert the existing two-way stop to a four-way stop and install "STOP AHEAD" signs on both approaches of Military Road	N/A	✓	WB: B	WB: B	WB: A	WB: B	
			NB: A	NB: A	NB: A	NB: B ⁶	
			SB: A	SB: A	SB: A	SB: A	

¹ storage- lane for vehicles waiting to turn; needed to meet VDOT standards; required for future traffic conditions with FASTC

² averaged left and right turn lane delay times reduce overall delay so approach would operate at LOS D; however, left turn movement would operate at LOS F during the a.m. peak hour even with mitigation; additional mitigation using a traffic signal would not be effective because of low traffic volume for this movement

³ needed to correct an existing deficiency; required for future traffic conditions with or without FASTC

⁴ needed to correct an existing deficiency; required for future traffic conditions with FASTC

⁵ decline in LOS on Darvills Road approaches (EB and WB) due to switch from free-flow movement to stop controlled movement; decreases in delay on Military Road approaches (NB and SB) would outweigh increases in delay on Darvills Road approaches (EB and WB) and result in improved traffic operations at the intersection

⁶ decline in LOS due to switch from free-flow movement to stop controlled movement; with conversion to four-way stop, decreases in delay on FASTC Main Campus/West 10th Street approaches (EB and WB) would outweigh increases in delay on Military Road approaches (NB and SB) and result in improved traffic operations at the intersection

Note: EB = eastbound, WB = westbound, NB = northbound, SB = southbound

4.2.7 Recreation

For the purpose of this Draft EIS, the alternative would cause a significant impact on recreational resources if it would:

- Would impede access to recreational resources
- Would substantially reduce recreational opportunities
- Would cause substantial physical deterioration of recreational resources

4.2.7.1 Build Alternative 1

Build Alternative 1 would have direct adverse effects on hunting resources in the study area. The construction of the FASTC Facility would impact approximately 1,158 acres of hunting area on Parcel 21/20 and LRA Parcel 9. Thirty-four bow hunting tree stand 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 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 athletic fields and, therefore, 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 during daytime hours, but limited nighttime operations would also be conducted and increased noise and light from the off road/unimproved drive tracks and the high speed drive tracks may be realized in the campground area. However, these impacts would be minor. The noise analysis shows that dB levels would not exceed levels allowed by local noise ordinances at the campground (refer to **Section 4.2.3**). A 100foot 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 Build Alternative 2 (Preferred Alternative)

Direct and indirect impacts to recreation under Build Alternative 2 would be similar to those described under Build Alternative 1 and would not be significant. In addition, direct and indirect adverse impacts to recreational hunting would occur on the Grid Parcel, which has two tree stand location and 52 forested acres. With mitigation to allow continued access and other available hunting and fishing areas, direct and indirect impacts to recreational hunting and fishing would be adverse, but not significant.

4.2.7.3 No Action Alternative

Under the No Action Alternative the FASTC facility would not be constructed and there would be no impacts to recreational activities on any of the site parcels.

4.2.7.4 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 1

Under Build Alternative 1 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 water 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. The estimated FASTC water and sewer utility load would be 80,000 gallons per day.

The town of Blackstone and Fort Pickett have an agreement that the water treatment plant will maintain a 2.0 million gallon per day (mgd) reserve of water in the event that Fort Pickett were to become fully mobilized. 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 2,594,000 gpd capacity is required to supply water for the FASTC facility (80,000 gpd) and to maintain the required reserve capacity for Fort Pickett (2.0 mgd). The 2,594,000 gpd demand is well below the existing permitted capacity of 3.5 mgd at the town of Blackstone's water treatment plant. Therefore, the FASTC facility 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 supplying an average capacity of 7.72 million gallons per day (mgd) (VAARNG 2011).

According to 2011-2012 wastewater treatment data (Blackstone 2012) the Blackstone wastewater treatment plant currently treats approximately 514,000 gpd. The projected daily average volume of wastewater that would be treated at the wastewater treatment plant following the construction of FASTC is 594,000 gpd. The wastewater treatment plant currently has a capacity of 2 mgd. Therefore, under current conditions the wastewater treatment plant has ample capacity to meet the projected 594,000 gpd of wastewater flow. In the unlikely event that Fort Pickett becomes fully mobilized, the town of Blackstone would maintain a water reserve of 2 mgd. If full mobilization were to occur, the capacity of the wastewater treatment plant would not be sufficient to handle the projected flows in addition to the 2 mgd from Fort Pickett. Under normal demand, there would be no significant direct or indirect impacts to the existing wastewater treatment capabilities.

Electrical power demand for Build Alternative 1 would be between approximately 2.231 and 5 megavolt amperes. Electricity for the FASTC campus would be provided by the Southside Electrical Cooperative. Any buildings requiring back up power would be provided with dedicated generators (personal communication Southside Electrical Coop 2011). Currently the two substations located at intersection of Military Road and West Entrance Road have enough capacity to serve the proposed project (personal communication Southside Electrical Coop 2012). If a new primary source were to be required, it would most likely be placed in the same area. Southside Electrical has the ability to design and build such a facility (personal communication Southside Electrical Coop 2011). Southside Electrical 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 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 Electrical Co-op, and no significant direct or indirect impacts are expected. The FASTC facilities would minimize demand for electrical services through compliance with Leadership in Environmental and Energy Design (LEED) Silver standards for environmentally sustainable construction, and the Energy Policy Act of 2005.

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 (personal communication Mid-Atlantic Broadband Coop 2011). Mid Atlantic Broadband has indicated that that it can also provide a dedicated OC-48 service if one is required in the final facility design (Mid-Atlantic Broadband Coop 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 generation for construction and operation of FASTC would be minimized through 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, cafeteria waste, and packaging from supplies. At full build out on-site employment at FASTC would be 1,070 employees (2020) and 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 704 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 5,704 pounds (3 tons) of solid waste per day and 1,825,000 pounds (912 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 in 15 years (2027). However, the county has purchased 160 acres of land near the intersection of U.S. 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 Build Alternative 2 (Preferred Alternative)

Impacts to utilities and infrastructure as a result of Build Alternative 2 would be similar those in Build Alternative 1 and would not be significant.

4.2.8.3 No Action Alternative

Under the No Action Alternative the FASTC facilities would not be constructed and there would be no impacts to utilities.

4.2.8.4 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.

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 1

Emergency Services

Police services on Fort Pickett and in the town of Blackstone are experienced and sufficiently staffed. Build Alternative 1 would not have adverse impacts on the police departments.

Facilities constructed for Build Alternative 1 would be designed to be fire resistance 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, as the procedure is currently under their mutual aid agreement with the Fort Pickett Fire Department, they would respond to calls at FASTC 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 1 would also be conducted with applicable regulations (refer to Section 4.2.3.6) and Build Alternative 1 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 1. However, with implementation of a SPCC 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 1 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 Build Alternative 2 (Preferred Alternative)

Direct and indirect impacts to public health and safety resulting from Build Alternative 2 would be similar to those described under Build Alternative 1.

4.2.9.3 No Action Alternative

Under the No Action Alternative the FASTC facilities would not be constructed and there would be no impacts to operational safety.

4.2.9.4 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 further minimize impacts to public health and safety.

Compliance with federal regulations regarding the management of hazardous materials and waste (CERCLA, RCRA, Oil Pollution Act, Pollution Prevention Act) 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 those physical features that make up the existing visible landscape, including land, water, vegetation and man-made features. For the purpose of this EIS, the proposed action and alternatives 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 sensitive receptors – i.e., 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 1

The overall landscape of the proposed FASTC campus is currently mainly forested and exists in its natural state. The implementation of Build Alternative 1 would use 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.

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.

West Entrance Road

Under Build Alternative 1 there is no change to LRA Parcel 10. Visual impact from West Entrance Road approaching LRA Parcel 9 would likely be minimal because the existing dense forest would be left intact around the borders of the parcel.

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 1. The Firing Range Area 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 Range Area 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 Main Campus area would be located along the western boundary of Parcel 21/20; however this is adjacent to an area currently dominated by similar development and would likely not alter the overall visual nature of the area.

LRA Parcel 9

Alternative 1 would result in changes to the visual environment of LRA Parcel 9 due to clearing associated with the construction of the drive 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 Environments Area 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 Driving Course and Unimproved Road Driving Course. 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 1, 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 Build Alternative 2 (Preferred Alternative)

Military Road

Under Build Alternative 2, there would be a new access road to LRA Parcel 10 off of Military Road that would directly alter the visual environment from Military Road. The existing dense forest would be left intact around the borders of LRA Parcel 10. Therefore, Build Alternative 2 would not result in any significant changes to the overall visual environment from the Military Road access corridor.

West Entrance Road

The existing dense forest would be left intact around the borders of LRA Parcel 10. Therefore Build Alternative 2 would not result in any significant changes to the overall visual environment from the West Entrance Road access corridor.

Parcel 21/20

Direct and indirect visual impacts would be the same as described under Build Alternative 1, except the Main Campus would not be located on Parcel 21/20 and the area would remain forested.

Grid Parcel

There is current development on the Grid Parcel similar to LRA Parcel 9. The Grid Parcel contains buildings with a mixture of architectural styles along with some gridded areas containing remnants of old structures and secondary growth. Some of the Mock Urban Environments Area would extend into Grid Parcel, the warehouse building would be located here along with the driving training and vehicle maintenance buildings. Under Build Alternative 2, the visual environment would not be altered significantly and would continue to contain buildings with a mixture of architectural styles.

LRA Parcel 9

Under Build Alternative 2, visual impacts on LRA Parcel 9 would be the same as described for Alternative 1.

LRA Parcel 10

Direct and indirect visual impacts are expected to be minimal, as most of the proposed facilities to be constructed would be one to three stories. New construction on LRA Parcel 10, which is currently forested and undeveloped, would range from one to five stories. The five-story buildings, administration buildings and dormitories, would be set back from West Entrance Road by more than 500 feet. Moreover, vegetation would be preserved wherever possible and plantings would be re-

established along disturbed forest edges to visually create a natural forest edge and minimize visual impacts.

4.2.10.3 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.

4.2.10.4 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 1

Under Build Alternative 1, 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.

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 materials from demolition on this parcel.

Construction

Roadway demolition activities have the potential to encounter oil contamination in areas of Parcel 21/20 where the former gasoline pipeline was located. The pipeline was reportedly cleaned and abandoned in place, so the pipes would need to be removed where encountered. Based on available information, residual soil contamination is possible at discrete locations along the pipeline. Contaminant levels 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 if contamination is encountered during demolition activities.

The contamination plume associated with the Trimble Road Landfill may be impacting groundwater downgradient from the landfill. Contaminants in groundwater have the potential to result in vapor intrusion in buildings proposed over the plume area; however, because the proposed Main Campus area

under Build Alternative 1 would be located upgradient from the plume area, the buildings would not be at risk from vapor intrusion. No use of groundwater is proposed; therefore, there would be no environmental health risk.

The boundary of Parcel 21/20 was modified to exclude the Dearing Road landfill and areas immediately to its north. As a result, it was determined that the landfill would not pose a risk to development of the Main Campus under Build Alternative 1 (Schnabel 2012c).

It is unknown if any residual soils and groundwater contamination is present in the suspected ordnance/explosives burn area. Any ground disturbing activities proposed for this area would be predicated with a soil and groundwater investigation to identify any potential environmental risks.

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). Explosives such as C2, C4 and C6 plastic explosives 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 Department of Transportation regulations for interstate and intrastate shipment of hazardous materials, as applicable²³, 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

²³ Title 49 CFR 100-199

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.

LRA Parcel 9

Demolition

Roadway demolition activities have the potential to encounter oil contamination in areas where the former gasoline pipeline was located. The pipeline was reportedly cleaned and abandoned in place, so the pipes would need to be removed where encountered. Based on available information, residual soil contamination is possible at discrete locations along the pipeline. GSA would conduct investigations of the pipeline to identify any potential areas of contamination prior to the start of construction activities. Any areas thought to be contaminated would be tested and remediated, if necessary, in accordance with applicable regulations. Contaminant levels 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.

Two Underground Storage Tanks (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 chemicals of concern. These USTs would be removed and closed by a licensed contractor in coordination with Virginia Department of Environmental Quality (DEQ). There is a potential for residual gasoline and oil contamination from other undocumented or previously removed USTs and ASTs on LRA Parcel 9. GSA would attempt to locate and characterize soils conditions associated with undocumented USTs/ASTs to the extent feasible. Contaminant levels 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 be removed and closed by a licensed contractor in coordination with DEQ.

Paint Filters may be present in the paint booth identified in the building located at 326 Armistead Avenue and would be disposed of as hazardous waste in accordance with applicable federal, state and local regulations.

The contents of the three unlabeled 50-gallon drums noted on the property at 507 Garnett Ave during the Phase I Environmental Site Assessment (ESA) would be identified and disposed of as appropriate, if still remaining on-site.

Asbestos Containing Material (ACMs) may be present in structures proposed to be demolished on LRA Parcel 9. Surveys would be conducted for ACMs, as required by 40 CFR 61.145, prior to alteration or demolition of the structures. A Virginia licensed asbestos abatement contractor would characterize the material and determine the proper technique for removing the ACMs and demolishing the facilities.

ACMs would be removed, characterized, managed, transported, and disposed according to applicable state, federal, 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 in nature.

Surveys for Lead Based Paint (LBP) would be conducted on structures on LRA Parcel 9 prior to alteration or demolition activities. LBP sampling and analysis would be conducted 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 mg/L. If LBP were detected at hazardous concentrations, these materials would be removed and disposed of as appropriate. LBP 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. Therefore, any impacts associated with LBP would be beneficial in nature.

Any buildings or portions thereof constructed prior to 1979 on LRA Parcel 9 would receive a full Polychlorinated biphenyl (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

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 LUC. Within this fenced area, there is a 4 acre portion land where no excavation would be permitted as specified in the LUC.

Groundwater contamination associated with the BCT-22 plume has entered LRA Parcel 9, however, the extent of the contamination is not known. The primary impact of the plume to FASTC construction would be the restriction of groundwater use in the area. A potential secondary impact would be potential vapor intrusion if buildings were to be proposed for construction in that area. This is the location of the High Speed Drive tracks 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 downgradient of the plume, associated health risks are considered to be low (Schnabel 2012c).

Operation

Operational impacts of the FASTC facility would be the same as those described for Parcel 21/20.

4.2.11.2 Build Alternative 2 (Preferred Alternative)

Under Build Alternative 2, an increase in the use, generation and storage of hazardous materials and wastes is anticipated as a result of demolition and construction activities and the operation of the FASTC facility.

Parcel 21/20

Impacts to Parcel 21/20 would be similar to those described under Build Alternative 1.

Grid Parcel

Concepts for Build Alternative 2 propose to use the existing roadway grid to the extent feasible. If roadway demolition becomes necessary, there would be potential for oil contamination to be encountered in areas where the former gasoline pipeline was located. The pipeline was reportedly cleaned and abandoned in place, so the pipes would need to be removed where encountered. Based on available information, residual soil contamination is possible at discrete locations along the pipeline. Contaminant levels 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.

There is a potential for residual gasoline and oil contamination from undocumented or previously removed USTs/ASTs on the Grid parcel. GSA would attempt to locate and characterize soils conditions associated with undocumented USTs/ASTs to the extent feasible. Contaminant levels 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 be removed and closed by a licensed contractor in coordination with DEQ.

Groundwater contamination associated with Building 767 would be investigated and remediated or otherwise mitigated, if required.

The last remaining structures on the Grid Parcel were demolished in 2012. GSA intends to characterize the demolition area soils to ensure there are no Business Environmental Risks associated with ACM or LBP. Surficial soil samples would be collected in areas proposed for FASTC construction where contamination is deemed possible based on a review of historical photos and assessment of site conditions.

It is assumed that all structures would have been surveyed for ACM, LBP and PCBs prior to demolition and that these materials, if present, were removed and disposed of in accordance with applicable regulations.

Construction

Undocumented USTs 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 DEQ.

Groundwater contamination associated with Building 767 would be investigated and remediated or otherwise mitigated, if required.

Operation

Operational impacts of the FASTC facility would be the same as those described for Build Alternative 1.

LRA Parcel 9

Demolition, construction and operational impacts to LRA Parcel 9 would be the same as those described under Build Alternative 1.

LRA Parcel 10

Construction and Demolition

LRA Parcel 10 has no history of development. As such no hazardous materials or wastes are anticipated to be encountered during demolition and construction activities.

Operation

Operational impacts of the FASTC facility would be the same as those described for Build Alternative 1.

4.2.11.3 No Action Alternative

Under the No Action Alternative the FASTC facility would not be construction and no demolition or construction activities would occur. ACM/LBP, PCBs and USTS would remain in place, where present, and no soil and groundwater investigations or remediation would occur.

4.2.11.4 Mitigation

GSA and DOS would confirm U.S. Army responsibility for future remediation of MBTE in the groundwater on LRA Parcel 9 if remedial action is required.

GSA and DOS would coordinate with the U.S. Army regarding any remediation required by applicable regulations if soils associated with the underground gasoline pipeline or undocumented UST/ASTs are found to be contaminated during planned investigations.

GSA would also confirm potential soil and groundwater contamination associated with the adjacent gasoline station and Building 767 and coordinate with the U.S. Army on remediation if required.

Impacts associated with hazardous substances would be minimized through compliance with Federal regulations regarding the management of hazardous materials and wastes (CERCLA, RCRA, 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.

4.3 OTHER CONSIDERATIONS

4.3.1 Consistency with Federal and State Plans, Policies and Controls

Build Alternative 1 and Build Alternative 2 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 Code of Federal Regulations [CFR] §§ 1500-1508)	This Environmental Impact Statement (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 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 Alternatives 1 and 2: 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 Stormwater Pollution Prevention Plan and use of Best Management Practices to limit potential erosion and runoff.
Pollution Prevention Act	The Foreign Affairs Security Training Center (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	The build alternatives would not impact special-status species or suitable habitat for special-status species. Informal consultations with the responsible agencies were conducted and concurrence obtained.
Fish and Wildlife Coordination Act	The build alternatives would not impact special-status species or suitable habitat for special-status species. Informal consultations with the responsible agencies were conducted and concurrence obtained.
Migratory Bird Treaty Act	The build alternatives 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	The build alternatives 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 the build alternatives. Consultation with State Historic Preservation Office has been conducted.
Archaeological Resources Protection Act	The build alternatives 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	The build alternatives analyzed in this EIS were evaluated with regard to impacts to prime farmland.
Comprehensive, Environmental Response, Compensation and Liability Act	The build alternatives would avoid impacts to Installation Restoration Program sites.
Resource Conservation and Recovery Act	The build alternatives 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)	The build alternatives have 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)	The build alternatives construction activities would impact wetlands directly and indirectly. Specific measures would be taken during the design process to avoid and minimize impacts to this wetland. GSA would obtain a Section 404 permit and wetland impact mitigation measures would be implemented to compensate for adverse impacts.
EO 11988 (Floodplain Management)	The build alternatives would not impact floodplains or floodplain management.
EO 12088 (Federal Compliance with Pollution Control Standards)	The build alternatives would be implemented in compliance with environmental laws and fully cooperate with EPA, 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)	The build alternatives 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)	The build alternatives 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 LEED design standards the FASTC facility would improve

Table 4.3-1. Applicable Federal State Plans, Policies and Regulations

Federal and State Plans, Policies and Controls	Status of Compliance
through Efficient Energy Management)	building energy, promote the use of renewable energy, and reduce greenhouse gas emissions associated with energy use.
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)	The build alternatives have 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

The build alternatives 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	
Nottoway County Zoning Regulations	The build alternatives 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.

The action alternatives would both 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 alternatives may result in additional residential construction in and around Blackstone, 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 the build alternatives 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 the build alternatives is not anticipated to be excessive in terms of region-wide usage. Furthermore, compliance with EO 13514 and EO 13423 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, the action alternatives would result in both short- and long-term environmental effects.

Short-term uses of the environment associated with the build alternatives would include improvements to existing and former military lands for both action alternatives. 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 IMPACTS

5.1 CUMULATIVE EFFECTS DEFINITION

Federal regulations implementing the National Environmental Policy Act (NEPA)²⁴ 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.*²⁵

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 alternatives 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 four parcels being developed: Parcel 21/20, the Grid Parcel, LRA Parcel 9 and LRA Parcel 10. However, for some impacts 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 ACTIONS 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 for 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 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 contribute cumulatively and significantly to the impacts of the Foreign Affairs Security Training Center (FASTC)

²⁴ Council on Environmental Quality 40 Code of Federal Regulations (CFR) Parts 1500-1508

²⁵ 40 CFR 1508.7

project identified in the Draft Environmental Impact Statement (EIS). Resource specific information required to perform a detailed cumulative analysis was not reasonably ascertainable for all of the identified projects. 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

The following projects were assessed in 2005 and a Finding of No Significant Impact was approved.

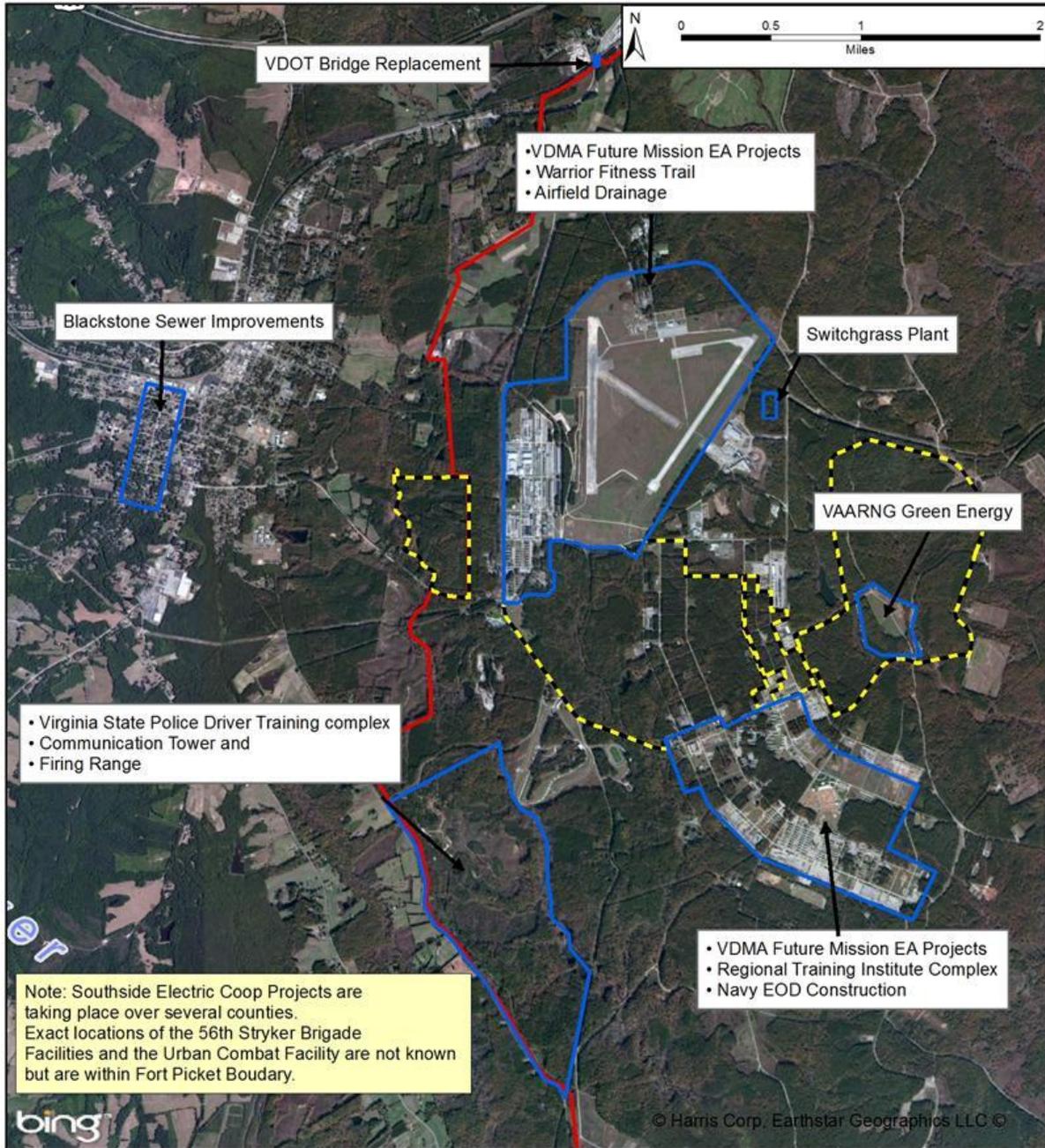
- Construction of a new U.S Department of Defense (DoD) Industrial Park on land bounded by Hospital Road, Kemper Avenue, E. 27th street and East Parade Avenue.
- Construction of a Special Warfare Center in the far southeastern corner of the cantonment area.
- Construction of a new Post Support Complex within the 3000-block and surrounding areas of MTCFP.
- Construction of a new Battalion Complex within the 2800 to 3100 block areas.
- Construction of a new Virginia Army National Guard (VAARNG) Headquarters at the intersection of Military Road and West 10th Street.

The past projects identified above have the potential to have cumulative impacts on topography, geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic, recreation, 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 reasonable foreseeable future projects.

ARNG 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 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 key features of Phase 1 are:

- An approximately 8,000 square foot 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 square foot 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 square foot Officer Candidate School Building with offices, administrative work space, conference room, classrooms and counseling areas.
- An approximately 4,900 square foot 250-seat auditorium with stage.



Legend

- Cumulative Impact Projects
- FASTC Parcel Boundaries
- Fort Pickett Boundary

**Figure 5.3-1
Past, Present and Reasonably
Foreseeable Future Project Locations**

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

Phase II consists of 123,916 square feet 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 have cumulative impacts on geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic, 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.

Warrior Fitness and Nature Trail

On August 4, 2012 the Warrior Fitness and Nature Trail was officially opened. The trail features 11 fitness stations and 14 nature observation points over the course of a half-mile loop. The trail located in six acres of forested area at the corner of Military Road and Ninth Streets within Fort Pickett. 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 have 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 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 (USEPA 2005).

The transformation and training of the Pennsylvania Army National Guard 56th Stryker Brigade Combat Team has the potential to have cumulative impacts on biological resources, air quality, noise, land use, traffic, and utilities and infrastructure 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% 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. 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-1990's 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.

Present Actions

Private development activity within the region surrounding the FASTC study area is primarily focused on recruitment for new business and industrial development within Pickett Park, and on residential, commercial, and industrial development within the surrounding community. At present, the construction of the Driver Training Facility at Fort Pickett is the largest development project currently being conducted in the area.

Virginia State Police Driver Training Facility

The Virginia State Police (VSP) has recently completed the construction of a new law enforcement training facility 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 design 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.

The facility is anticipated to train 3,000 to 5,000 officers annually and would be open to local emergency, rescue, and fire departments on weekends as schedules permit. Training operations are anticipated to occur 7 days a week for 50 weeks out of the year (Commonwealth of Virginia 2000).

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 Facility would avoid wetlands, archaeological sites and Virginia Department of Conservation and Recreation-Division of Natural Heritage conservation sites (VSP 2009). Between 170 and 200 acres of forest and grassland are anticipated to be cleared for facility construction. Fuel storage would be associated with the Driver Training Facility but it is uncertain whether USTs or ASTS would be used and what size would be needed.

Construction on the new VSP Driver Training Facility 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 have cumulative impacts on geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic, 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.

Navy EOD 1300 Area Construction

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 12,000SF of concrete slab and additional crushed stone to accommodate eight RSL buildings, five mobile units and one concrete and steel armory in the Navy EOD 1300 Area Compound located on Fort Pickett (Courier-Record 2012b).

The Navy EOD 1300 Area construction project has the potential to have cumulative impacts on geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic, 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.

Airfield Drainage Improvements

A Notice of Invitation to Bid (Bid # PN: VAFM-11-0035) was issued for this project on August 1, 2012. The project would entail the construction of a stormwater detention pond with associated piping and an outfall structure. The stormwater detention pond would be located adjacent to the Blackstone Army Airfield at Fort Pickett (Courier-Record 2012c). This project has the potential to have cumulative impacts

on topography, geology and soils, water resources, biological resources, air quality, noise, land use, socioeconomics, traffic, 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 (Courier-Record 2012b).

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 Coop 2012).

Switchgrass Biofuel Plant

Nottoway County is building a 5,000 square foot 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. (Nottoway County2012b).

This project has the potential to have cumulative impacts on geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic, 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.

Reasonable Foreseeable Future Actions

Virginia State Police Communication Tower Construction

VSP prepared an environmental impact report for the construction of a 199-foot self-supporting communications tower in Nottoway County. 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. 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 have cumulative impacts on air, noise, utilities (electric) and aesthetic and visual resources when considered with the Proposed Action and other past and reasonable foreseeable future projects.

Virginia Department of Military Affairs Future Missions Requirements Environmental Assessment

The Virginia Department of Military Affairs prepared an environmental assessment (EA) for future mission requirements at Maneuver Training Center, Fort Pickett. The purpose of these actions is to enhance the training, support, and management capabilities of Fort Pickett. Proposed actions assessed in the EA include the construction of twelve facilities within the cantonment area of Fort Pickett. The twelve facility construction projects are:

- Operational Readiness Training Complex
- Visitors Control Center
- Morale, Welfare and Recreation Area
- Sports/Baseball Complex

- Conference Center
- Post Exchange Expansion
- Directorate of Logistics Troop Warehouse
- Directorate of Public Works Stormwater Improvements
- Medical Detachment
- Dining Facility
- Post Headquarters
- DPW Facilities

The planned Operational Readiness Training Complex is proposed to be situated on 77.31 acres of previously developed land located in the southeastern section of the cantonment area. The complex is intended for housing and support facilities for brigade-sized units training at Fort Pickett. The number and size of buildings that would be developed on the site has not been determined, however, the existing buildings in the area would be demolished. Facility construction would take advantage of existing infrastructure such as roads, water/sewer lines, storm water management structures, etc. Supporting facilities would include parking, fencing, sidewalks, exterior fire protection, outside lighting, access roads, utilities, and stormwater retention. Cost effective energy saving measures would also be incorporated into the design.

The planned Visitor Control Center is proposed to be located at an 8.98-acre site, south of the existing main gate on the west side of Military Road. The facility would consist of a single building with an asphalt parking lot. The area is currently a revegetated mixed stand of conifers and deciduous species that would be removed. Supporting facilities would include parking, fencing, sidewalks, exterior fire protection, outside lighting, access roads, utilities, and stormwater retention. Cost effective energy saving measures would also be incorporated into the design.

The Morale, Welfare and Recreation Area is proposed to be located on a 24.73-acre area near the intersection of Military Road and Garnett Avenue, west and south of the existing fieldhouse (Building 1613). This project would include the renovation and reuse of the existing pool located to the south of the fieldhouse and the construction of two tennis and two basketball courts. With the exception of a bathhouse associated with the existing pool, there are no standing structures in the area. The forested area comprising the western portion of the proposed project would be retained, with paths and targets constructed for use as a field archery range.

The Sports/Baseball Complex is proposed to be located adjacent to the existing baseball fields being displaced by the Regional Training Institute Complex, southeast of Hospital Road, between West and East Parade Avenues. The proposed project would reuse a formerly developed area that is now a revegetated mixed stand of conifers and deciduous species that would be removed. Development of the 38.44-acre site would include construction of four baseball fields with dugouts, fencing and high efficiency lighting.

The planned Conference Center is proposed to be located at the site of the current Post and Police Station, just off Military Road, and would occupy 39.75 acres of previously developed land. The proposed project would also reuse two existing buildings and the revegetated mixed stands of conifers and deciduous species around these structures. The timber stands would be removed. Existing

structures would be modified and new facilities constructed to create the conference center which will include overnight rooms for visitors. Two houses are proposed to be located behind the conference center. Supporting facilities would include parking, fencing, sidewalks, exterior fire protection, outside lighting, access roads, utilities, and stormwater retention. Cost effective energy saving measures would also be incorporated into the design.

The proposed Post Exchange Expansion is a 4.01-acre site located adjacent to the existing Post Exchange footprint. The existing Post Exchange building would be updated and expanded. A portion of the proposed project site is comprised of revegetated mixed stands of conifers and deciduous species, which would be removed.

The proposed Directorate of Logistics Troop Warehouse is a 9.90-acre site located along Warehouse Street. This location is a revegetated mixed stand of conifers and deciduous species directly east of the Fort Pickett main gate. These trees would be removed.

The proposed Department of Public Works Stormwater Improvements are located within and adjacent to the existing Department of Public Works complex and a softball field near the intersection of 9th Street and Rives Road. The project encompasses approximately 30.21 acres and may include the replacement or installation of additional drop inlets, underground stormwater piping, culverts, curbs and gutters, sidewalks, drainage swales and the construction of a retention basin as well as the repaving of areas that are damaged, new paving on areas that are currently gravel covered and revegetation of areas that are bare. The existing structures and warehouses within the study area would not be affected.

The Medical Detachment Facility is proposed to be located on an open 4.10-acre site along Kemper Avenue. The existing structure at this site would be demolished. The facility would consist of a single or multi-story structure or structures. Supporting facilities would include parking, fencing, sidewalks, exterior fire protection, outside lighting, access roads, utilities, and stormwater retention. Cost effective energy saving measures would also be incorporated into the design.

The proposed Dining Facility has two potential locations. The first site under consideration is an open 3.24-acre site located adjacent to the intersection of East Parade Avenue and Hospital Road. The second site is a 6.01-acre site located along Hospital Road. This area is revegetated with a mixed stand of conifers and deciduous species. Trees on the site would be removed. The facility would consist of a single or multi-story structure or structures. Supporting facilities would include parking, fencing, sidewalks, exterior fire protection, outside lighting, access roads, utilities, and stormwater retention. Cost effective energy saving measures would also be incorporated into the design.

The proposed Post Headquarters is a 9.99-acre site located on the west side of Military Road between 8th and 10th Streets. The proposed location is a revegetated area containing a mixed stand of conifers and deciduous species that would be removed. The facility would consist of a single or multi-story structure or structures. Supporting facilities would include parking, fencing, sidewalks, exterior fire protection, outside lighting, access roads, detached facility signs, utilities, and stormwater retention. Cost effective energy saving measures would also be incorporated into the design.

The location for the proposed Directorate of Public Works Facilities is an 8.14-acre site located along Garnett Avenue. Facility construction would include the construction of one administrative/office building, and multiple shop buildings for the storage and maintenance of equipment. The proposed location consists of a revegetated area consisting of a mixed stand of conifers and deciduous species that would be removed. The southern third of the site contains a cleared open field. The facility would consist of single or multi-story structures. Supporting facilities would include parking, fencing, sidewalks, exterior fire protection, outside lighting, access roads, utilities, and stormwater retention. Cost effective energy saving measures would also be incorporated into the design.

This project has the potential to have cumulative impacts on geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic, 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.

Urban Combat Training Facility Construction

The Virginia Department of Military Affairs submitted an EA for the construction of and training at an urban combat training facility at Fort Pickett located in Nottoway County. The property on which the project is proposed is managed by the Virginia Army National Guard. The Virginia Department of Military Affairs submitted the EA to fulfill the requirements of the environmental impact review law. The proposed project site consists of approximately 125 acres of mostly forested property. The central portion of the site is without trees and has been previously disturbed.

This project has the potential to have cumulative impacts on topography, geology and soils, biological resources, air quality, noise, land use, socioeconomics, traffic, 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 order to comply with a Virginia Department of Environmental Quality (DEQ) Consent Order, must perform upgrades to the municipal sewer and water collection and distribution systems. The Consent Order is due to occasional over flowing at some pump stations. The majority of the work is planned to take place in residential areas along College, Brunswick and Lunenburg Avenues within the central area of town. These upgrades would include:

- Installing approximately 17,750 linear feet of 8 inch sanitary sewer
- Installing approximately 393 linear feet of 12 inch sanitary sewer
- Installing approximately 2,082 linear feet of 12 inch force main
- Installing 64 manholes
- Removing 44 manholes
- Installing approximately 15,500 linear feet 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 linear feet of 10 inch water main

This project has the potential to have 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.

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 MTCTP and surrounding towns. The Solar energy generation system would be located at the Trimble Road Landfill.

This project has the potential to have cumulative impacts on 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 reasonable 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. The bridge is located along an access route to Fort Pickett. Traffic will need to be detoured via U.s Route 460 or otherwise managed during the construction process. Replacement is scheduled to commence spring 2014.

This project has the potential to have 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 reasonable foreseeable future projects. Firing Range Construction

Virginia State Police Firing Range

VSP has proposed the construction of a multi-agency, state-of-the-art firing range on former Fort Pickett land. 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; parking areas; prefabricated range towers; restrooms and a pavilion (VSP 2012). The range 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 EIR 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 have cumulative impacts on geology and soils, biological resources, 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.

Commercial Outdoor Recreational 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.

Table 5.3-1 provides a summary of all past, present and reasonable foreseeable future projects to identify the resources that would be affected by each project and provide a temporal context (where available).

Socioeconomic Trends

Reasonably foreseeable future socioeconomic trends in the study area may be inferred from future projections of population growth. Future 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. Relevant Past, Present and Reasonably Foreseeable Future Projects in the Vicinity of FASTC

	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																			
Mission EA Past Projects	2005		•	•	•	•	•	•	•	•	•		•	•		•	•	R/I	
Regional Training Institute Complex	2008-2011			•		•		•	•	•		•	•	•		•		R	
Warrior Fitness Trail	2012					•							•					R	
Pennsylvania Army National Guard 56th Stryker Brigade Combat Team Transformation and Training	2006-2007					•		•	•	•		•		•				I	
Present Projects																			
Driver Training Facility	2012-2013		•	•		•		•	•		•	•		•		•	•	R	
Navy EOD 1300 Area Construction	2012-2013			•		•		•	•	•	•	•		•		•		I	
Airfield Drainage	2012-2013		•	•	•	•		•	•	•	•	•		•		•		I	
Southside Electrical Co-op	2012-2013													•					
Switchgrass Biofuel Plant	2012			•		•		•	•	•	•	•		•		•		R/I	
Reasonable Foreseeable Future Projects																			
Communications Tower Construction	2013-2013			•		•		•	•		•	•		•		•		R	
Future Missions EA Projects	TBD			•		•		•	•	•	•	•		•		•		R	
Urban Combat Training Facility Construction	2012-2013		•	•		•		•	•	•	•	•		•		•		R/I	
Town Of Blackstone Sewer Improvements	2012-2013			•				•	•		•	•		•				R/I	
VAARNG Green Energy	TBD	•		•		•		•	•	•	•	•		•		•	•	R/I	
VDOT Bridge Replacement	2014			•				•	•		•	•						I	
Firing Range Construction	TBD			•		•		•	•		•	•		•				R	
Commercial Recreational Hunting and Fishing Facility	TBD			•		•		•	•	•	•	•	•	•				R/I	

* RI= Retained/Incomplete data R=Retained I=Insufficient Data

5.4 CUMULATIVE EFFECT ANALYSIS

The potential cumulative effects of Build Alternatives 1 and 2 when considered with past, present, and reasonably foreseeable future actions were analyzed for each resource evaluated in Chapter 4. The build alternatives would have the same impacts when combined with other actions and are evaluated together. The No Action Alternative would not result in cumulative impacts.

Resource specific information required to perform a detailed cumulative analysis was not reasonably ascertainable 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 dismissed from the cumulative analysis. These projects were identified as having occurred or as proposed to occur but no other information was reasonable ascertainable for 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 and “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 emissions (GHG). 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).

Minor impacts on climate would be minimized for the build alternatives through LEED Silver project design standards, which would improve building energy and reduce GHG emissions associated with energy use. One project was identified that has the potential to have cumulative impacts when considered with the build alternatives; the VAARNG Green Energy Project. The VAARNG green energy project would construct a biomass energy plant and solar photovoltaic array and is anticipated to meet the definition of “stationary source” of air emissions as defined by the Clean Air Act (CAA) and would be regulated under Title V of the act, accordingly.

The 5.0 megawatt bioenergy plant would emit GHGs that contribute to climate change. The two systems are assumed to 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 as compared to other energy generation without photovoltaic systems, which would offset some of the emissions.

The GHG emissions of the bioenergy plant, in combination with the build alternatives, 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. Topography

The majority of the past, present and reasonable 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. Changes in topography associated with these projects would be localized and very minor 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 (VAARNG HQ)
- Driver Training Facility
- Airfield Drainage
- DSP Communications Tower
- Future Missions EA Projects (Morale, Welfare and Recreation Area, Visitor Control Center, Sports/Baseball Complex, Conference Center, Directorate of Logistics Troop Warehouse, Post Headquarters and Directorate of Public Works Facilities)
- Urban Combat Training Facility Construction
- Firing Range Construction

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

When considered with past, present and reasonably foreseeable future projects the build alternatives would not result in cumulative impacts to topography. Therefore, cumulative impacts would not be significant.

5.4.2 Geology and Soils

Implementation of the build alternatives along with past, present and reasonably foreseeable future projects would disturb and redistribute soils within the study areas. The majority of the past, present, and reasonably foreseeable future construction projects would occur in areas where there has been earlier disturbance. Soils in these areas would already meet structural requirements and, therefore, would not require the importation of structural fill. Geotechnical investigations for the build alternatives 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 and is common practice and would not be disposed of off-site. Erosion and sedimentation controls would be employed for all construction project as required by federal and state regulations. Therefore, cumulative impacts to geology and soils would not be significant when considered with the build alternatives.

5.4.3 Water Resources

Soil erosion and stormwater runoff are largely responsible for degradation of surface waters. Implementation of the build alternatives 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 is a requirement of the National Pollution Discharge (NPDES) permit process. For projects that disturb less than one 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 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 area in the area, 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 and 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 Best Management Practices (BMPs) associated with addressing site- and activity-specific water resource protection needs, provisions of facility-specific Stormwater Pollution Prevention Plans (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 Driver Training Facility 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 4.44 acres of wetlands would be adversely affected by the build alternatives, which would require compensatory mitigation under CWA Section 404. Based on available information, it appears that the other past, present and reasonably foreseeable future construction projects would avoid affecting wetlands; therefore, there would be no cumulative wetland impacts.

5.4.4 Biological Resources

Vegetation

The build alternatives would involve ground disturbing activities for construction of new facilities. A substantial portion of the proposed construction and demolition projects associated with the build alternatives 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.

Table 5.3-2. Construction Project Areas in Acres

Project	Site Area (Acres)	Forested	Maximum Forest Area (Acres)	Disturbed
Regional Training Institute Construction	5	no	0	yes
Pennsylvania Army National Guard 56th Stryker Brigade Combat Team Transformation and Training	15	no	0	unknown
VSP Driver Training Facility	680	yes	200	no
Switchgrass Biofuel Plant	1	unknown	1	unknown
Future Missions EA Projects:				
Operational Readiness Training Complex	77.31	no	0	yes
Visitors Control Center	8.98	yes	8.98	no
Morale, Welfare and Recreation Area	24.73	partially	24.73	partially
Sports/Baseball Complex	38.44	yes	38.44	no
Conference Center	39.75	yes	39.75	no
Post Exchange Expansion	4.01	no	0	yes
Directorate of Logistics Troop Warehouse	9.9	yes	9.9	no
Directorate of Public Works Stormwater Improvements	30.21	partially		yes
Medical Detachment	4.1	no	0	yes
Dining Facility	Site A 3.24/B 6.01	no/yes	A 0/B 6.01	yes/yes
Post Headquarters	9.99	yes	9.99	no
Directorate of Public Works Facilities	8.14	partially	8.14	yes
Urban Combat Training Facility	125	partially	125	partially
Subtotal	1045/1047		472	
FASTC Build Alternatives	1,502	525	525	partially
Totals				
Total Cumulative	2,547-2,549		997	

When considered cumulatively, the past, present and reasonably foreseeable future projects in the area would result in the development within approximately 2,500 acres of previously disturbed and

undisturbed land in Nottoway County. Approximately three quarters 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. The cumulative loss of approximately 997 acres of forest would constitute a loss of less than 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.

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 reasonable foreseeable future development of the area. Approximately 1,000 acres of forest habitat would be removed from the area and would no longer be available to wildlife. The revegetation strategies outlined in Section 4.1.5 would reduce cumulative impacts to wildlife habitat by preserving forest block connectivity to the extent practicable. The preservation of these corridors 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. Therefore, cumulative impacts to wildlife would not be significant.

Threatened and Endangered Species

No special-status species are known to occur on any of the study area sites. Therefore, there would be no cumulative impact to special-status species.

5.4.5 Cultural Resources

When past, present, and reasonably foreseeable future projects are analyzed together with the Proposed Action, there would be potential for cumulative impacts to cultural resources. 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 National Register of Historic Places (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 State Historic Preservation Officer and affected Native American tribes. Any potentially significant impacts to cultural resources would be mitigated. For these reasons, it is expected that any cumulative impacts on cultural resources would be less than significant.

5.4.6 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 emission under Title V of the CAA, 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). When considered cumulatively these projects are anticipated to have emission that are below *de minimis* for criteria pollutants. The Proposed Action evaluated in this Draft EIS would have no significant impacts to 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 emission that are below *de minimis* for criteria pollutants and would not be significant. 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.

5.4.7 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 Proposed Action would begin in 2014, there would be cumulative noise impacts in the vicinity of U.S. 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 Firing Range and Driver Training Facility and the Future Missions EA. There were no operational noise impacts reported for these projects; therefore, there would be no long-term cumulative noise impacts with the Proposed Action.

5.4.8 Land Use and Zoning

Implementation of the Proposed Action along with past, present and reasonably foreseeable future projects would result in cumulative changes in land use in and around Fort Pickett. The VSP Driver Training Facility and FASTC would convert woodlands into developed land. Some of this land would be lost to hunting, however impacts would be minimized at FASTC by continuing to permit hunting in areas where training is not occurring to the extent feasible. Several of the VAARNG proposed future developments would also convert forested areas into developed land. The VAARNG projects are in the cantonment area where development has been common. None of the projects would be in the Clear Zone or the Accident Potential Zones of the airfield. When past, present and future projects are evaluated there would be cumulative impacts to land use. However because these impacts are on land zoned for these activities the impacts would not be significant.

5.4.9 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 (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 1,101 direct jobs and 837 indirect/induced jobs within the study area. Total operations-related employment would

increase from 978 in 2018 to a steady-state total of 1,938 jobs in 2021. 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 an approximately less than 1% and 1.3% increase in Chesterfield and Nottoway County populations, respectively and is consistent with the County Comprehensive Plans. 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

This Draft EIS did not identify any adverse environmental or health effects that would disproportionately affect minority or low-income populations. Therefore, there are no cumulative impacts.

Protection of Children

This Draft EIS did not identify any potential for health and safety risks to children at Fort Pickett and no impacts to schools. Therefore there are no cumulative impacts.

5.4.10 Traffic and Transportation

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. The potential increase in personnel accessing FASTC during construction would range between 185-938 average daily traffic between 2017 and 2020. Traffic increases from FASTC operations would range between 978 and 1,938 between 2018 and 2021, with 1,938 representing the long-term traffic increase from operations. These past, present, and reasonably foreseeable future projects would result in an overall increase in traffic accessing the surrounding communities and FASTC via Fort Pickett. The Proposed Action would have adverse impacts to three intersections in Blackstone and two locations within Fort Pickett:

- West Entrance Road /8th Street at South Main Street
- US Route 460 at Cox Road/Yellowbird Road
- Military Road at Darvills Road
- West Entrance Road and Military Road within Fort Pickett
- Main Gate during peak a.m. peak hours

Projects that would have short-term cumulative construction traffic impacts when considered with FASTC include the VSP Driver Training Facility, Communications Tower Construction, Future Missions EA Projects, Urban Combat Training Facility Construction, VSP Firing Range Construction and VDOT Bridge Replacement.

The Driver Training Facility, Communications Tower and VSP Firing Range Construction would all occur on State owned land off of Ridge Road. Construction traffic from the north would access the site via

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.

Future Missions EA construction traffic would access Fort Pickett via Cox Road to Military Road or West Entrance Road depending on the location of the construction. 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 Phase I of the Proposed Action and potentially the Future Missions EA projects, would result in short term cumulative impacts during construction.

To assess long-term operational cumulative traffic impacts, environmental impact documents were reviewed for the VSP Firing Range and Driver Training Facility. There were no traffic impacts reported for these projects. Similarly, the Future Missions EA stated that “the proposed mission support facilities would result in small increases in traffic. However, generally, the proposed projects would replace existing facilities that have outlived their useful life. Therefore, no additional traffic would be generated by those projects”. The Urban Combat Training Facility Construction and EOD 1300 Area Construction are also 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. Airfield Drainage, Southside Electrical Co-op, Switchgrass Biofuel Plant, Communications Tower Construction, town of Blackstone Sewer Improvements and VAARNG Green Energy project) are not likely to result in operational traffic increases. Only the Regional Training Institute Complex, 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, there would not be long term cumulative traffic effects with the Proposed Action for these projects.

5.4.11 Recreation

Recreational resources in the vicinity of the cumulative projects include camping, fitness centers, hunting and fishing. The past, present and reasonably foreseeable future projects would not affect these resources.

The cumulative projects would either support the existing community population or would provide training opportunities to the military, emergency responders and law enforcement groups from other areas that would temporarily relocate to the area for the duration of the training. As a result, they are not anticipated to utilize existing community recreational resources and there would be no cumulative impact to these resources.

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. Impacts of the Proposed Actions would be minimized through the allowing the continued use of hunting areas to the extent feasible. Hunting and fishing areas would still exist at Fort Pickett in areas outside of the proposed projects 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 from FASTC construction. Therefore, cumulative impacts would be adverse, but not significant.

5.4.12 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 biomass energy plant and solar photovoltaic array are 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 Electrical Co-op, and no significant cumulative impact is expected. In addition Southside Electrical Co-op 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. Therefore, cumulative impacts to potable water would not be significant.

According to 2011-2012 wastewater treatment data (Blackstone 2012) the Blackstone wastewater treatment plant currently treats approximately 514,000 gallons per day (gpd). The projected daily average volume of wastewater that would be treated at the wastewater treatment plant following the construction of FASTC (80,000 gpd) and the Driver Training Facility (22,275 gpd) is 616,275 gpd. The waste water treatment plant 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, Town of Blackstone maintains a 2.0 mgd water reserve in the event that MTCFP becomes fully mobilized. If this should occur, then the capacity of the wastewater treatment plant would not be sufficient to handle the projected cumulative flows. Due to the improbability of the full mobilization of MTCFP, the cumulative impacts would not be significant to the existing wastewater treatment capabilities.

5.4.13 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.

An 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.

5.4.14 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. The construction projects associated with the VAARNG and Pickett Park are taking place in areas where similar buildings and structures already exist and may improve the visual aesthetics of the area where older unattractive buildings are removed to accommodate new development. As a result, cumulative impacts would not be significant.

5.4.15 Hazardous Substances

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., Driver Training Facility, firing ranges) 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 action alternatives 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 for the action alternatives and are described below and summarized at the end of the Chapter in Table 6-1.

6.1 CLIMATE

Minor impacts on climate would be minimized through the LEED Silver project design standards for the FASTC facility, which would improve building energy efficiency and reduce GHG emissions associated with energy use.

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 through 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.

Additionally, 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 and the use of suitably sized culverts or bridges, as appropriate, to maintain efficient peak flow and minimize stream impacts, would be incorporated in detailed project design to the extent feasible. Pedestrian pathways crossing streams would be designed on piles to avoid impacts. 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; 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 Alternative 1 or 2 would be mitigated via the one or more of the following mechanisms:

1. Purchase Credits from an approved wetland and stream bank within the Nottoway River watershed.
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) potential mitigation site located in the Army Compatible Use Buffer (ACUB) area, if available.

6.4 BIOLOGICAL RESOURCES

6.4.1 Vegetation

In order to minimize impacts to vegetation during and after completion of construction the following revegetation 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 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.
4. **Connect Plant Communities Across Larger Areas:** Revegetation 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 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.

Other mitigation measures that would be considered to the extent feasible would be avoiding site clearing during the migratory bird nesting season to minimize temporary construction impacts on migratory birds.

6.4.3 Bald Eagle

Impacts to protected species would be minimized through regulatory compliance with the Bald Eagle Protection Act as follows:

1. Construction of the southernmost firing range building would occur outside the 660 foot buffer for the bald eagle nest located south of Parcel 21/20.
2. The clearing of trees around the facility would be minimized to the maximum extent practicable to avoid any potential line of sight impacts to the bald eagle nest.

6.5 CULTURAL RESOURCES

Compliance with Section 106 of the National Historic Preservation Act 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 VDHR 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 (PM10 emissions) from fugitive dust would be minimized by implementing BMPs such as periodic wetting of soils during FASTC construction and operation.

6.7 NOISE

The use of vegetative buffers would be incorporated into the FASTC design to the extent feasible to minimize noise impacts to the surrounding areas.

To be in regulatory 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.

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 FAA regulations regarding runway Clear Zones and Accident Potential Zones. No significant impacts would occur to land use or zoning, therefore no mitigation would be required.

6.9 SOCIOECONOMIC RESOURCES AND ENVIRONMENTAL JUSTICE

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, GSA would coordinate facility planning and operations with local officials and planners, as appropriate, to maximize positive impacts. Where feasible, GSA would also seek to identify potential resources that may assist local planners in this effort.

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 Picket would be implementation of a process to notify the daycare center in advance of peak noise events.

6.10 TRAFFIC AND TRANSPORTATION

Abandonment of the VDOT maintained roadways within LRA Parcel 9 in coordination with VDOT and the Nottoway County Board of Supervisors would be required.

The following measures would also be considered by GSA and DOS in coordination with VDOT, Nottoway County, the Town of Blackstone, and VAARNG.

Travel Demand Management Measures

- Scheduling the arrival and departure times of FASTC personnel to avoid peak arrival and departure times of VAARNG personnel to the extent feasible would spread out the peak arrival and departure volumes over a longer period and result in the following:
 - Fort Pickett Main Gate – avoid impacts to guard capacity during the a.m. peak period.
 - US Route 460 and Cox Road/Yellowbird Road – minimize impacts to traffic operations by reducing average delay
 - Darvills Road and Military Road – minimize impacts to traffic operations by reducing average delay

Potential Intersection Improvements

- **Unsignalized intersection of US Route 460 and Cox Road/Yellowbird Road:**
 - Extend the westbound left turn lane to provide 500-feet of storage with a 200-foot taper
 - Install a 200-foot northbound left turn lane with a 200-foot taper (to serve left turns and through movements)
- **Unsignalized intersection of Cox Road and Military Road**
 - Install a 200-foot westbound left turn lane with a 200-foot taper.
- **Unsignalized intersection of Darvills Road and Military Road:**
 - Extend the eastbound right turn lane to provide 200-feet of storage with a 200-foot taper. This improvement would correct an existing deficiency that would be required for future traffic conditions with or without Alternative 1
 - Extend the northbound left turn lane to provide 200-feet of storage with a 200-foot taper
 - Extend the northbound right turn lane to provide a 200-foot taper
 - Switch the stop control from Military Road approach to the Darvills Road approaches;
 - Remove the existing red flashing beacon and replace with a yellow and red flashing beacon (yellow for Military Road and red for Darvills Road) and install “STOP AHEAD” signs on both approaches of Darvills Road

- **Unsignalized intersection of Military Road and West Entrance Road:**
 - Install a 200-foot northbound left turn lane with a 200-foot taper
 - Install a 200-foot eastbound right turn lane with a 200-foot taper
- **Signalized intersection of West Entrance Road/8th Street at South Main Street:**
 - modify the traffic signal timing for westbound through/left movement
- **Unsignalized intersection of Military Road and West 10th Street at the proposed FASTC Main Campus access:**
 - Install a 200-foot southbound right turn lane with a 200-foot taper
 - Convert the existing two-way stop to a four-way stop and install “STOP AHEAD” signs on both approaches of Military Road

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.

Impacts to area landfills would be minimized via compliance with the Pollution Prevention Act and 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 (CERCLA, RCRA, 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

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).

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:

A FASTC community liaison/outreach program would be established 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 this Draft EIS might occur. Should additional potential significant impacts be identified, additional environmental analysis, in accordance with NEPA, would be undertaken prior to the changes being implemented.

Table 6.15-1. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Draft EIS	Regulatory Mitigation	Other Mitigation under Consideration
Climate	<ul style="list-style-type: none"> LEED Silver design standards improve building energy efficiency reducing GHG emissions 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Topography, Geology and Soils	<ul style="list-style-type: none"> Minimize grading and filling to extent feasible Water application during construction and operations for dust control Vegetation and BMPs to minimize erosion 	<ul style="list-style-type: none"> CWA Section 319 and 401 <ul style="list-style-type: none"> VA Erosion and Sediment Control Program <ul style="list-style-type: none"> 19 minimum standards VA Stormwater Management Program <ul style="list-style-type: none"> VA Permit for Discharges of Stormwater from Construction Activities SWPPP 	<ul style="list-style-type: none"> None
Water Resources	<ul style="list-style-type: none"> Perpendicular stream crossings Suitably sized culverts to maintain efficient peak flow Pile supported pathway stream crossings LID measures and stormwater BMPs 	<ul style="list-style-type: none"> Energy Independence and Security Act <ul style="list-style-type: none"> Maintenance of current stormwater runoff rates and volumes CWA Section 319, 401 and 404 <ul style="list-style-type: none"> VA Erosion and Sediment Control Program <ul style="list-style-type: none"> 19 minimum standards VA Stormwater Management Program <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> None
Biological Resources	<ul style="list-style-type: none"> Avoid disturbance whenever possible Treat disturbed edges Re-establish appropriate native plant communities Connect plant communities across larger areas 	<ul style="list-style-type: none"> CWA Section 319, 401 and 404 <ul style="list-style-type: none"> VA Erosion and Sediment Control Program VA Stormwater Management Program Maintain forest buffers around eagle nests 	<ul style="list-style-type: none"> Avoid tree clearing during migratory bird nesting season
Cultural Resources/NHPA	<ul style="list-style-type: none"> Avoidance of potential NRHP eligible archaeological sites 	<ul style="list-style-type: none"> NHPA Section 106 compliance 	<ul style="list-style-type: none"> Additional Phase II if future project design results in potential impacts to Sites 44NT0210, 44NT0212, 44NT0219, 44NT0220, 44NT0221 or 44NT222
Air Quality	<ul style="list-style-type: none"> Periodic wetting for dust control 	<ul style="list-style-type: none"> None; project area is in attainment 	<ul style="list-style-type: none"> None
Noise	<ul style="list-style-type: none"> Maintenance of vegetative buffers 	<ul style="list-style-type: none"> OSHA approved hearing protection 	<ul style="list-style-type: none"> Public notice prior to peak noise events.
Land Use and Zoning	<ul style="list-style-type: none"> Locate facilities to be compatible with adjacent land use 	<ul style="list-style-type: none"> U.S. Army CZ and APZ compliance 	<ul style="list-style-type: none"> None
Socioeconomics	<ul style="list-style-type: none"> Security gates/Signage 	<ul style="list-style-type: none"> Uniform Relocation Assistance and Real Property Acquisition Policies Act 	<ul style="list-style-type: none"> GSA Urban Development/Good Neighbor program to coordinate planning with local officials and planners to maximize

Table 6.15-1. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Draft EIS	Regulatory Mitigation	Other Mitigation under Consideration
			<ul style="list-style-type: none"> positive socioeconomic impacts. Notification of daycare center prior to peak noise events
Traffic and Transportation	<ul style="list-style-type: none"> Use of shuttle buses to reduce vehicle trips Second access drive to campus minimizes trips through Blackstone and the Fort Pickett West Gate. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Travel demand management measures Intersection improvements
Recreation	<ul style="list-style-type: none"> Hunting open when no training occurring 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Utilities and Infrastructure	<ul style="list-style-type: none"> Construction in existing or proposed roadways and utility corridors 	<ul style="list-style-type: none"> Pollution Prevention Act <ul style="list-style-type: none"> Source reduction measures EO 13101 Greening the Government through Waste Prevention, Recycling, and Federal Acquisition <ul style="list-style-type: none"> Recycling Policies 	<ul style="list-style-type: none"> None
Public Health and Safety	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Oil Pollution Act <ul style="list-style-type: none"> Spill Prevention, Control and Countermeasures Plan Hazardous materials/waste management regulations (CERCLA, RCRA, Oil Pollution Act, Pollution Prevention Act) <ul style="list-style-type: none"> Compliance with Hazardous Materials Management Regulations Compliance with Hazardous Waste Management Regulations Adherence to Land Use Controls 	<ul style="list-style-type: none"> None
Aesthetic and Visual Resources	<ul style="list-style-type: none"> Vegetative buffers 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
Hazardous Substances	<ul style="list-style-type: none"> Soils investigations for petroleum releases at pipeline, UST and AST locations Groundwater investigations of potential offsite sources 	<ul style="list-style-type: none"> Oil Pollution Act <ul style="list-style-type: none"> Spill Prevention, Control and Countermeasures Plan Hazardous materials/waste management regulations (CERCLA, RCRA, Oil Pollution Act, Pollution Prevention Act) <ul style="list-style-type: none"> Compliance with Hazardous Materials Management Regulations Compliance with Hazardous Waste Management Regulations Adherence to Land Use Controls 	<ul style="list-style-type: none"> Manufactured BMPs (filtration systems) Soil amendments for leachate treatment
General Management	<ul style="list-style-type: none"> Monitor mitigation measure to ensure benefits are realized 		<ul style="list-style-type: none"> Establish community liaison/outreach program

Table 6.15-1. Minimization and Mitigation Summary

Resource	Avoidance/Minimization Assumed in Draft EIS	Regulatory Mitigation	Other Mitigation under Consideration
	<ul style="list-style-type: none">• Monitor potential environmental impacts of final project design; perform additional impact analysis and NEPA documentation for any potentially significant impacts not included in EIS.		

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GSA contacted the following agencies and individuals regarding the Proposed Action and provided notification of the availability of the Draft EIS.

Point of Contact	Agency/Organization
Federal Elected Officials	
Senator Mark Warner	Senator
Senator Jim Webb	Senator
Representative Randy Forbes	Representative 4 th District
Representative Robert Hurt	Representative 5 th District
Representative Eric Cantor	Representative 7 th District
State Elected Officials	
Governor Bob McDonnell	Governor of Virginia
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Gary Simmons	District 2 Nottoway County Board of Supervisors
Jack Green	District 3 Nottoway County Board of Supervisors
Sherman Vaughn	District 4 Nottoway County Board of Supervisors
Clarence Simpson	District 5 Nottoway County Board of Supervisors
Irving Arnold	Commissioner of Revenue Board of Supervisors
Mayor William Coleburn	Mayor of Blackstone, VA
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Maj. Steve P. Stadelman	National Guard Bureau Headquarters
Maj, Jaycee Shaver	National Guard Bureau – Virginia Army National Guard
Maj, Gen. Daniel E Long, Jr	Adjutant General's Office of Virginia
Donald L Bailey II, CPT, GS, VAARNG	Executive Officer to the Adjutant General Office of VA
Mr. Stephen Huxtable	Adjutant General's Office of Virginia
LTC William Korsen	Garrison Commander, Fort Pickett
CSM McGhee	Fort Pickett
Cotton Puryear	Virginia (VA) National Guard, Department of Military Affairs, Public Affairs/Communications Director
Keith Boswell	Managing Director of Business Development--Federal Asset Strategies of the VA Economic Development Partnership
John Prosis	Assistant Administrator for the Nottoway County Government
Ronald Roark	Administrator, Nottoway Planning Council
Larry Parrish	Sheriff, Nottoway County
Andrea Kampinen	Architectural Historian, VA Department of Historic Resources
Elizabeth Kosteiny	APVA Preservation VA

Point of Contact	Agency/Organization
Pamela DeCamp	VA Legal Aid Society, SSCVP Advisory Board
Federal Agency	
Kirstin Brinker Kulis	National Historic Preservation Act Advisory Council on Historic Preservation
Rick Henderson	Deputy Chief, US Army Corps of Engineers (USACE)
Julie S. Hamilton	Environmental Scientist USACE Norfolk District
Todd Liebig	Client Relations Manager USACE Norfolk District
Susan Clark	USACE Norfolk District
Walter Gee	USACE
Barbara Rudnick	US Environmental Protection Agency (EPA), National Environmental Policy Act (NEPA) Team Leader Region 3
Karen DelGrosso	EPA Region 3
Katherine Clayton	NEPA Compliance Specialist, VA Army National Guard, National Guard Bureau
Tylan Dean	US Fish and Wildlife Service
Kimberly Smith	US Fish and Wildlife Service
Dennis Jones	National Resource Conservation Service
J. Clavin Parish	US Dept of Agriculture FSA, VA State Executive Director
State Agency	
Ellie Irons	Program Manager, VA Dept of Environmental Quality Office of Env. Impact Review
Susan Smead	VA Dept. of Military Affairs – VA Army National Guard, Cultural Resources
Sandra Hypes	Natural Heritage Environmental Review Coordinator
Larry Douberly	VA Dept. of Conservation and Recreation, Regional Office Stormwater Compliance Specialist
Matt Lohr	Commissioner, VA Dept. of Agriculture & Consumer Services
Nancy Fowler	VA Dept of Social Services, Office of Family Violence
Thomas A. Hawthorne	Virginia Department of Transportation Richmond District, District Administrator
Local Agency/Group	
Phillip Vannoorbeeck	Town Manager, Blackstone, VA
Jonathan Pickett	Prince Edward County Dept of Planning and Community Development
Kirk Turner, Director	Chesterfield County Planning Commission
John Hill	Nottoway County Local Redevelopment Authority
Nicolas Kuzmiak, Chief	Blackstone Police
Ray Arms, Assistant Chief	Blackstone Volunteer Fire Department
Jane S. Barnes, Executive Director	Blackstone Chamber of Commerce
Lewis Jones, Chamber Chair	Blackstone Chamber of Commerce

Point of Contact	Agency/Organization
Sam McCracken	Blackstone VA United Methodist Assembly
Carolyn Davis	Access Realty, LLC
Elizabeth Lynn	Access Realty, LLC
Tom Inge	The Ward Burton Wildlife Foundation
Joe Allman	Downtown Blackstone, Inc.
Layfayette Dickens	Downtown Blackstone, Inc.
Francis Gilmore	Gilmore Environmental Consulting, Blackstone, VA
Kim Moody	Kim Moody Designs
Ronnie West	Light of Hope Baptist Church
Al Brooks	Blackstone Lions Club
James Bradshaw	Blackstone Rotary Club
Sheryl Reitz	Blackstone Rotary Club
Carol Wilkinson	Southern Piedmont Agricultural Research and Extension Center
Arlene Lewis Robertson	National Association for the Advancement of Colored People, Nottoway County Branch Unit 7101
Brian Murphy	Conservation Management Institute VA Polytechnic Institute and State University
Lucia Malon	Blackstone Historical Society
Peter Easter	VA Hunting Preserve Association
Carol Corker	Southside Planning District Commission
Sara P. Fulks	Southside Planning District Commission
Sangi L. Cooper	Southside Planning District Commission
Robyn Fowler	Southside Planning District Commission
Robert Nieweg	National Trust for Historic Preservation
Tribes	
Chief Walt Brown	Cheroenhaka (Nottoway) Indian Tribe
Chief Lynette Lewis Allston	Nottoway Indian Tribe of Virginia
Dr. Wenonah G Haire	Catawba Cultural Preservation Project
Ms. Lisa Larue, THPO	United Keetoowah Band of Cherokee Indians
Ms. Deanna Beacham	Virginia Council on Indians (agency discontinued in June 2012), Program Specialist
Chief Stephen R. Adkins	Chickahominy Indian Tribe
Chief Gene Adkins	Chickahominy Indians—Eastern Division
Chief Sharon Bryant	Monacan Indian Nation
Chief Barry W. Bass	Nansemond Indian Tribe
Chief G. Anne Richardson	Rappahannock Tribe
Chief Bill Harris	Catawba Indian Nation
Mr. Clint Halftower	Nation Representative, Cayuga Nation of Indians

Point of Contact	Agency/Organization
Mr. S. Joe Crittenden	Acting Principal Chief, Cherokee Nation
Mr. Michael Hicks	Principal Chief, Eastern Band of Cherokee Indians
Chief George Wickliffe	United Keetoowah Band of Cherokee Indians
Chief Carl Custalow	Mattaponi Indian Tribe
Chief Kevin Brown	Pamunkey Tribe
Chief Kenneth Adams	Upper Mattaponi Indian Tribe
Chief Robert Green	Patawomeck Indian Tribe
Mr. Russell Townsend	Eastern Band of Cherokee Indians, THPO
Chief Leo R. Henry	Tuscarora Nation of New York
Individuals	
Emily Marshall	Director, Madeline's House
Bernice Hawkins	Vice President Madeline's House
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Phyllis Alston	Blackstone, VA
Tina Rose	Blackstone, VA
Dan Warren	Blackstone, VA
Jennifer Colley	Blackstone, VA
Fred Davis	Southside Electric Cooperative Blackstone VA
Rea Everitt	Osen-Hunter Group Blackstone, VA
Robert Thacker	Blackstone, VA
R&L Mohr Inc	Blackstone, VA
Lonnie Smith	Structural Concepts & Components Blackstone, VA
Larry Gumprich	Global Integrated Services Blackstone, VA
John Grillo	DRS C3 & Aviation Company Blackstone, VA
Greg Lumpkin	UAV Pros Blackstone, VA
Tiffany Williams	Blackstone, VA
George Felts	Southside Electric Cooperative
Gary Ramsey	Telecommunications Mid-Atlantic Broad Band
Mary Howard	Century Link
Sonny Abbot	Blackstone, VA
William Parrish	Blackstone, VA
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Violet Lile	Blackstone, VA
A. Marr	Blackstone, VA
Red Dodge	Blackstone, VA
Pats Padaccia	Blackstone, VA
K. Stphnsz	Blackstone, VA
D. Strode	Blackstone, VA
Elenora Anderson	Blackstone, VA
Mary Arnold	Blackstone, VA
Tony Burgess	Blackstone, VA
Mr. Doug Compton	Blackstone, VA
J.W. Crumpler	Blackstone, VA
Bruton Davis	Blackstone, VA
Christine Hasbrook	The Grey Swan Inn B&B, Blackstone, VA
Debbie Moody	Blackstone, VA
John Wamsley	Blackstone, VA
Christ Stevenson	Hampton Inn, Quality Inn, Comfort Inn, South Hill, VA