3 AFFECTED ENVIRONMENT

The CEQ regulations implementing NEPA (40 CFR Part 1500) require documentation succinctly describing the environment of the area(s) to be affected by the alternatives under consideration, as well as a discussion of the impacts in proportion to their significance. The affected environment under the Proposed Action Alternative(s) ranges from site-specific physical, natural and cultural resources to broader regional concerns (i.e., air quality variables, noise, infrastructure, socioeconomic conditions, community facilities and services, transportation, and traffic).

3.1 Land Use, Plans, Aesthetics, and Coastal Zone Management

3.1.1 Land Use

Rivanna Station currently covers approximately 76 acres south of Boulders Road and east of US Route 29. It is part of an area designated in the Albemarle County Land Use Plan as the Piney Mountain Community Development Area. Albemarle County has had a longstanding comprehensive planning goal to direct development into designated “Development Areas,” particularly in the locations designated as “Urban Areas” or “Communities.” The Development Area concept is a critical planning component that the County is using to achieve growth management goals. “Urban Areas” are intended to be more urban, or "city like," in character and less suburban. It is to be supported by a full range of public utilities, facilities, services and amenities (Albemarle County, July 2002).

“Communities” are intended to be smaller urban centers removed from the City of Charlottesville and the County’s neighboring “Urban Area.” Similar to Urban Areas, Communities encompass an expansive variety of land uses at a multitude of densities which are supported by public utilities and facilities. The Rivanna Station site is within the Piney Mountain Community, as designated within the Albemarle County Land Use Plan.

The Piney Mountain Community is located about two miles south of the border between Albemarle and Greene Counties. It is bounded to the south by the North Fork Rivanna River floodplain, to the east by an intermittent unnamed tributary of the North Fork Rivanna River, to the west by Route 606, and to the north by a line alternately formed by Route 763, Herring Branch (a tributary to North Fork Rivanna River), and the 500 foot contour. The existing land use of the Piney Mountain Community is characterized by a mix of residential dwelling units, including two large residential areas identified as the Camelot and Briarwood subdivisions, limited commercial development, and two large industrial areas identified as University of Virginia Research Park at North Fork and Northside Industrial Park. Nearby are several tracts in public ownership, including Chris Greene Lake Park, Charlottesville-Albemarle Airport, Baker-Butler Elementary School, Hollymeade Elementary School, and Mortimer Sutherland Jr. Middle School.

As identified in the Albemarle County Land Use Plan, Rivanna Station is within an area zoned as Light Industrial. Land uses at Rivanna Station are presently consistent with that designation and include the NGIC building, internal roadways, open space, buffers, and surface parking lots. The property north of Boulders Road which INSCOM proposes to purchase is currently partially fallow field, forest, and partially a gravel parking lot. These parcels are zoned as Rural Areas. The area surrounding Rivanna Station is comprised of a variety of zoning categories, such as commercial, industrial, residential, planned development, and neighborhood model districts (Albemarle County GIS, September 2007).

The zoning of the northeastern adjacent property has recently been changed from Rural Areas to Commercial Office. The current land owner is planning the construction of office buildings to support NGIC operations. This construction will require the extension of Boulders Road past the site boundary.

The Albemarle County Land Use Plan also recommends the establishment of a greenway along the North Fork Rivanna River, which borders the southern portion of the site. Since greenways often follow natural facets of the landscape, they are designed for conservation, recreation, and

alternative transportation. Greenways are intended to connect nearby residential and non-residential areas (The Virginia Greenways and Trails Toolbox, October 2000).

Rivanna Station is approximately 1.3 miles east of the Charlottesville-Albemarle Airport. Due to the site's close proximity to this public facility, the Nicholson Building and associated structures at Rivanna Station are located within the Airport Impact Area (AIA) Overlay District. The Albemarle County Zoning Ordinance states that its intent "*… is to minimize the creation of physical, visual, and other obstructions to the safe operations of the airport facility and to minimize adverse airport-related impact on persons and properties in the vicinity"* (Section 30.2.1 Albemarle County Zoning Ordinance, June 2005). The AIA District consists of an Airport Protection Area, Runway Protection Zone (RPZ), and an AIA Noise Impact Area.

The AIA District regulations are designed to prevent the breach of *"buildings, structures, objects of natural growth, or uses"* in airport protection areas. Airport Protection Areas are *"imaginary conical, horizontal, transitional, and approach surfaces"* surrounding the Charlottesville-Albemarle Airport (Section 30.2.3 Albemarle County Zoning Ordinance, June 2005). Rivanna Station is located just at the point that the Airport Protection Area begins to transition from the 780 ft absolute height above mean sea level (msl) to a 20:1 transition surface. The maximum ranges of the building heights for Rivanna Station, based on topography will range from approximately 280 feet to 405 feet.

The Runway Protection Zone (RPZ) is *"trapezoidal in shape and centered about the extended runway centerline, with dimensions for a particular runway end defined by the type of aircraft and approach visibility minimum associated with the end of the runway"* (Section 30.2.3 Albemarle County Zoning Ordinance, June 2005). Rivanna Station is well outside the RPZ.

The AIA noise impact area identifies acoustical performance standards to guide design and construction by outlining the maximum permitted interior noise levels for various land use categories. Rivanna Station is well outside the AIA.

3.1.2 Aesthetics

The character of the visual environment on and around Rivanna Station varies substantially depending on land use and development density. Rivanna Station itself is characterized by the NGIC office building and associated surface parking in the northeast corner, and open space (forest, farm pond, and old fields) on the remainder. Residential, commercial, and industrial developments dominate the west and southwest. Conversely, to the north, south, and east, open space (primarily forest and some old fields) and aquatic resources like the North Fork Rivanna River and its tributaries characterize the landscape.

Since the facility at Rivanna Station is located on a topographic ridge, it is visually evident from surrounding areas, including vehicles passing on US Route 29. The Army therefore designed the existing NGIC (Nicholson Building) to be a visually commanding structure. The uses of natural light, innovative form, and site integration have been incorporated into a distinctive architectural design that is not only pleasing but protects the intelligence missions conducted there. Existing vegetation and the North Fork Rivanna River provide a visual buffer around the perimeter of the site.

3.1.3 Coastal Zone Management

The Coastal Zone Management Act (CZMA) of 1972 (16 USC § 1451, et seq., as amended) provides assistance to the states, in cooperation with federal and local agencies, for developing land and water use programs in coastal zones. Section 307(c)(1) of the Coastal Zone Management Act Reauthorization Amendment (CZMARA) stipulates that federal projects that affect land uses, water uses, or coastal resources of a state's coastal zone must be consistent to the maximum extent practicable with the enforceable policies of that state's federally-approved coastal management plan.

Since Rivanna Station is not within a Coastal Management Zone, the CMRP legislation and policies are not applicable.

3.2 TRAFFIC AND TRANSPORTATION

3.2.1 Existing Traffic Conditions

Rivanna Station is located on Boulders Road in Albemarle County, north of Charlottesville, Virginia. It is approximately 100 miles southwest of Washington, D.C. and 85 miles west of Richmond. It currently employs 1,175 people and hosts about 30 conferences a year. The facility routinely attracts about sixty visitors a day. A typical conference attracts another 80 visitors and lasts for two to three days. Boulders Road provides the sole vehicle access to Rivanna Station. It is a privately developed, divided, four-lane collector road, running east from a signalized intersection at Seminole Trail. NGIC is currently the only development on the road. There are currently two access points to the facility, one for employees and visitors and one for access to the loading dock.

Seminole Trail is part of US Route 29, which runs northeast to Washington, D.C. and south to Charlottesville, N.C., and on to Pensacola, Florida. The section of Seminole Trail fronting Boulders Road has a four-lane divided section with a depressed median. There is a median break approximately 2,300 feet south of Boulders Road and another 2,000 feet to the north. According to the VDOT 2005 traffic count records, there are 33,000 trips per day on Seminole Trail at Boulders Road (LDG, 2007).

Level of Service (LOS) is a qualitative measure of the operating conditions of an intersection or other transportation facilities. There are six LOS (A through F) defined; LOS A represents the best operating conditions with no congestion, and LOS F is the worst with heavy congestion. Roadways and intersections with LOS E or F would have traffic conditions at or above capacity. Traffic patterns would be congested, unstable, and normally unacceptable to individuals attempting to access and use roadways and intersections with LOS E or F (Table 3.2-1).

Table 3.2-1

Description of Traffic Level of Service (LOS)

Level of Service	Description
A	*(Free flow conditions)* Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream with a high level of physical and psychological comfort. The effects of minor accidents or breakdowns are easily absorbed at this level.
B	*(Reasonably free flow conditions)* The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and breakdowns are still easily absorbed.
C	*(Stable operations)* Traffic flows are approaching the range in which small increases in traffic will cause substantial deterioration in service. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require additional care and vigilance. Minor accidents may still be absorbed, but the local deterioration in service will be substantial with delay forming behind any blockage. The driver now experiences a noticeable tension due to the additional vigilance required for safe operation.
D	*(High density, but stable flow. Bordering unstable flow)* Small increases in traffic could cause substantial deterioration in service. Freedom to maneuver within the traffic stream is severely limited, and the driver experiences drastically reduced physical and psychological comfort levels. Even minor accidents can be expected to create substantial delays because the traffic stream has little space to absorb disruptions.
E	*(Very unstable operations)* Virtually no usable gaps exist within the traffic stream. This means that any disruption, such as a vehicle entering from a ramp or changing lanes, causes following vehicles to slow or stop to admit the vehicle disrupting the flow. Any incident can be expected to produce substantial delay. Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort is extremely poor.
F	*(Forced or breakdown flow)* Such conditions generally exist for a number of reasons such as traffic accidents, recurring points of congestion, or peak hour conditions that exceed the current design of the facility. LOS F is used to identify that point where the facility has reached maximum capacity and a complete breakdown of service occurs.

Source: (TRB, 2000)

Peak period traffic counts at the intersection of Seminole Trail and Boulders Road were analyzed using the High Capacity Manual software, HCS+. With the exiting signal timings, vehicles making the southbound left turn movement are able to flow through gaps in northbound traffic with little delay. Current delays are 5.0 seconds per vehicle with queues less than one vehicle per cycle during the A.M. peak period. During the P.M. peak period, traffic exiting Boulders Road is subject to longer delays. The actuated signal system minimizes the amount of green time allowed on the side street to maintain through traffic flows on Seminole Trail. During the P.M. peak hour, traffic volumes on Seminole Trail operate at LOS C, while the exiting traffic from NGIC experiences level of service D. The current delays and levels of service for each movement of the intersection are listed in Table 3.2-2 (LDG 2007).

Table 3.2-2
Summary of Intersection Capacity Analysis Year 2007 Conditions
Seminole Trail and Boulders Road

Approach	Movement	A.M. Peak		P.M. Peak	
		Delay	LOS	Delay	LOS
Westbound	Left	46.0	D	52.9	D
Westbound	Right	42.7	D	53.7	D
Northbound	Through	7.0	A	27.2	C
Northbound	Right	7.8	A	65	A
Southbound	Left	5.0	A	30.1	A
Southbound	Through	7.9	A	7.0	A
Intersection		8.1	A	18.9	B

Source: (LDG, 2007)

3.2.2 Existing Parking Conditions

The existing surface parking at the NGIC facility consist of approximately 720 spaces and is inadequate for the current employees. NGIC recently leased a gravel parking area to alleviate safety concerns for personnel parking and walking along the shoulder of Boulders Road. The number of personnel has already exceeded the capacity of the existing surface parking lots.

3.2.3 Existing Transit Use

There is no public transportation that serves Rivanna Station except taxicabs or pay for livery services. Rivanna Station employees rely primarily on single occupancy vehicles (SOV) as their primary means of transportation to work. Rivanna Station is served by the Charlottesville-Albemarle Regional Airport, which is four miles southwest of the proposed site. Flights from this regional airport are routed through Washington Dulles, Cincinnati, Atlanta and Philadelphia. Richmond International Airport is approximately 75 miles from Rivanna Station. The Charlottesville Transit System runs multiple routes within the city limits. There currently are no routes that run north to Rivanna Station. However, a review of proposed and upcoming developments in the county revealed that transit provisions along US 29 north of the Charlottesville would be appropriate and are planed (VADRPT, 2006). Neither the City of Charlottesville, nor Albemarle County, has light rail systems for public transportation.

3.3 Air Quality

3.3.1 National Ambient Air Quality Standards and Attainment Status

Environmental Protection Agency (EPA) Region 3 and the Virginia Department of Environmental Quality (VDEQ) regulate air quality in Virginia. The Clean Air Act (CAA) (42 USC 7401-7671q), as amended, gives EPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that set acceptable concentration levels for six criteria pollutants: particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O_3), and lead. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (annual averages) have been established for pollutants contributing to chronic health effects. Based on the severity of the pollution problem and the pollutant of concern, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. Each state has the authority to adopt standards stricter than those established under the federal program; however, the Commonwealth of Virginia accepts the federal standards.

Federal regulations designate Air-Quality Control Regions (AQCRs) in violation of the NAAQS as "nonattainment" areas. Federal regulations designate AQCRs with levels below the NAAQS as "attainment" areas. "Maintenance" AQCRs are areas that have previously been designated "nonattainment," and have been redesignated to "attainment" for a probationary period through implementation of maintenance plans. Albemarle County, and therefore Rivanna Station, is within the Northeastern Virginia Intrastate AQCR (AQCR 224) (40 CFR 81.144). Federal regulations designate AQCR 224 as an attainment area for all criteria pollutants (40 CFR 81.338). Because Rivanna Station is in an attainment AQCR, the air conformity regulations do not apply. A record of non-applicability (RONA) is located in Appendix A. The closest non-attainment or maintenance areas to Rivanna Station are the National Capital Interstate AQCR (AQCR 47) and the State Capital Intrastate Air Quality Control Region (AQCR 225). AQCR 47 is a moderate nonattainment area for the 8-hour O_3 and nonattainment for the $PM_{2.5}$ NAAQS. AQCR 225 is a maintenance area for the 8-hour O_3 NAAQS. Because O_3 and $PM_{2.5}$ can be transported regionally, their precursors NO_x, VOC, SO_x and $PM_{2.5}$ were included in a more detailed analysis of air emissions resulting form the proposed action.

3.3.2 Local Ambient Air Quality

Existing ambient air quality conditions near Rivanna Station can be estimated from measurements conducted at air-quality monitoring stations close to the facility (Table 3.3-1). With the exception of the eight-hour O_3 standards, air-quality measurements are below the NAAQS (USEPA, 2007). The monitored maximum of 0.116 parts per million (ppm) for an eight-hour sampling period exceeds the standard of 0.08 ppm; however, the 3-year average of the fourth highest daily maximum 8-hour average ozone concentrations over each year has not exceeded 0.08 ppm; hence, the attainment status.

Table 3.3-1

National Ambient Air Quality Standards and Monitored Air Quality Concentrations for AQCR 224

Pollutant and Averaging Time	Primary NAAQS[1]	Secondary NAAQS[1]	Monitored Data[2]	Location of Station
CO				
8-Hour Maximum[3] (ppm)	9	(None)	*(no data)*	-
1-Hour Maximum[3] (ppm)	35	(None)	*(no data)*	
NO_2				
Annual Arithmetic Mean (ppm)	0.053	0.053	*(no data)*	-
Ozone				
8-Hour Maximum[4] (ppm)	0.08	0.12	0.116	Stafford County
$PM_{2.5}$				
Annual Arithmetic Mean[5] (µg/m^3)	15	15	7.8	Madison County
24-Hour Maximum[6] (µg/m^3)	35	35	19	
PM_{10}				
Annual Arithmetic Mean[7] (µg/m^3)	50	50	21	King William County
24-Hour Maximum[3] (µg/m^3)	150	150	52	
SO_2				
Annual Arithmetic Mean (ppm)	0.03	(None)	0.002	Madison County
24-Hour Maximum[3] (ppm)	0.14	(None)	0.010	
3-Hour Maximum[3] (ppm)	-	0.5	0.017	

1 - Source: 40 CFR 50.1-50.12.
2 - Source: (USEPA, 2007)
3 - Not to be exceeded more than once per year
4 - The 3-year average of the fourth highest daily maximum 8-hour average ozone concentrations over each year must not exceed 0.08 ppm.
5 - The 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from must not exceed 15.0 ug/m^3.
6 - The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor must not exceed 65 ug/m^3.
7 - The 3-year average of the weighted annual mean PM_{10} concentration at each monitor within an area must not exceed 50 ug/m^3.
ppm = parts per million
µg/m^3 = micrograms per cubic meter
NO_2 = Nitrogen dioxide

3.3.3 Existing Facility Emissions

Existing stationary sources of air emissions at Rivanna Station include two natural gas boilers, three natural gas domestic water heaters, two diesel emergency generators, one diesel underground storage tank (UST), two aboveground storage tanks (ASTs) and a document shredder. Based on the type of pollutants emitted, the CAA set permit rules and emission standards for sources of certain sizes. EPA oversees programs for stationary source operating permits (Title V) and for new or modified major stationary source construction and operation (New Source Review). Based on the facility's potential to emit, Rivanna Station is a minor source of air emissions. The facility is applying for an operating permit for their existing air emission sources. The Army has developed an emission inventory for these sources as part of the application process. The total 2006 stationary source emissions at Rivanna Station are outlined in Table 3.3-2.

Table 3.3-2

2006 Stationary Source Emissions at Rivanna Station

Equipment	Emissions (tpy)				
	NO_x	CO	VOC	$PM_{2.5}$	SO_x
Boilers	0.036	0.076	0.005	0.007	0.001
Generators	1.251	0.246	0.018	0.02	0.02
Document Destructor	-	-	-	1.749	-
TOTAL	**1.287**	**0.322**	**0.023**	**1.778**	**0.019**

3.4 Infrastructure and Utilities

3.4.1 Potable Water Supply

Potable water is currently supplied by the Rivanna Water and Sewer Authority (RWSA) from the North Fork Rivanna Water Treatment Plant located approximately 4,500 ft west of the site. The maximum allowable intake from the North Fork Rivanna River is 2.0 million gallons per day (mgd). The current average consumption is 0.25 mgd, with a peak consumption of 1.4 mgd (Rivanna Water and Sewer Authority Website, 2007).

Assuming an average consumption rate of 16 gallons per day (gpd) per worker (USDOE Federal Energy Management Program Website, 2006), the NGIC workforce presently generates a potable water demand of approximately 18,700 gpd.

3.4.2 Sanitary Sewer

The NGIC building is currently serviced by the RWSA. The current workforce presently generates approximately 18,700 gpd of sanitary sewage.

3.4.3 Stormwater

Section 402 of the Clean Water Act (CWA) of 1977 established requirements for discharges of industrial and sanitary wastewater effluents, and for discharges of stormwater through the National Pollutant Discharge Elimination System (NPDES) permit program. Within the Commonwealth of Virginia, the stormwater portion of the NPDES program is administered through the Virginia Stormwater Management Permit (VSMP) program administered by the Virginia Department of Conservation and Recreation (DCR). The DCR is also responsible for enforcing the other requirements of the Virginia Stormwater Management Law (Title 10.1, Chapter 6, Article 1.1 of the Code of Virginia) and regulations (4VAC3-20 et seq.) of the Virginia Administrative Code.

Fort Belvoir, classified as a small municipal separate storm sewer system (MS-4) discharger under the Phase 2 stormwater regulations, has a general stormwater permit that is in effect through December 2008. Since Rivanna Station is a subinstallation of Fort Belvoir, Rivanna Station falls under Fort Belvoir's MS-4 permit. Under the Phase 2 stormwater regulations, any construction activity such as clearing, grading, and excavation that is greater than 1 acre requires a VSMP. In addition, based on the Executive Council of the Chesapeake Bay Program Directive 01-1, *Managing Stormwater on State, Federal and District-owned Lands and Facilities,* Fort Belvoir personnel are to lead by example in controlling nutrient, sediment and chemical contaminant runoff during project construction and operation of the proposed site.

The existing stormwater system consists predominately of open channels that receive sheet flow. One portion of the on-site system collects rainwater from roof drains and flows through a vegetated swale to the North Fork Rivanna River. Sheet flow from the paved parking areas, to the northeast of the NGIC building, is conveyed via grassed swales to a stormwater pond located north of the farm pond then to the North Fork Rivanna River.

Stormwater in the undeveloped southeastern portion of the site is conveyed to the pond via sheet flow and vegetated drainage features. Stormwater, north of Boulders Road, is conveyed to the Herring Branch via sheet flow and small tributaries.

3.4.4 Natural Gas

Natural gas is supplied to the NGIC facility by the City of Charlottesville Department of Public Works, Public Utilities Division.

3.4.5 Electricity

Electricity is purchased by Fort Belvoir from Rappahannock Electric Cooperative. Continued availability is anticipated.

3.4.6 Communications

The installation owns the entire communications system, including copper and fiber-optic cables, utility poles, and computerized switchboard systems. Most distribution cable and fiber-optic cable is carried through an underground duct bank, along with some conventional cable (RTKL, 2007).

3.4.7 Solid Waste

The NGIC Facility at Rivanna Station participates in a Qualified Recycling Program (QRP), and personnel collect aluminum cans, tin/steel cans, glass bottles, and plastic containers. Due to the classified nature of the activities at the NGIC, paper is not recycled. In 2006, 1.75 tons of plastic, aluminum, and plastic items were collected, processed, and shipped off-site. Fluorescent light bulbs are also collected and recycled as needed. A civilian contractor collects Fort Belvoir's solid waste, which is disposed at an approved landfill (Ange, 2007).

Assuming an average rate of 4.5 lbs per day per worker (Central Virginia Waste Management Authority Website, 2006), the NGIC workforce presently generates approximately 5,287 lbs of solid waste per day.

3.5 Socioeconomics

3.5.1 Demographics

Albemarle County has a 2000 US Census population of 79,236, and a 2006 US Census population estimate of 92,035 (US Census Bureau, accessed 2007). Rivanna Station immediately borders but is outside the Charlottesville, Virginia metropolitan area, and is located about 100 miles from Washington, D.C. The Charlottesville metropolitan area, which includes the City of Charlottesville, and Albemarle, Greene, Fluvanna, and Nelson Counties, had an estimated population of 189,123 in 2006.

As of July 2007, Albemarle County had a working population of about 51,286 persons (Virginia Employment Commission, accessed 2007). In 2005, approximately 177,569 people lived in the neighboring Charlottesville metro area, which is not included in the Albemarle County data (American Community Survey, accessed 2007).

3.5.2 Age, Race and Ethnicity

Available data on racial and ethnic distribution as counted in 2000 and estimated for 2005 in areas around Rivanna Station, Albemarle County, and Virginia are summarized in Table 3.5-1 and 3.5-2. The site is located within Census Tract 102 (Figure 3-1), located just north of Charlottesville metropolitan area, and incorporates a small section of both the Rivanna and White Hall Districts of the County.

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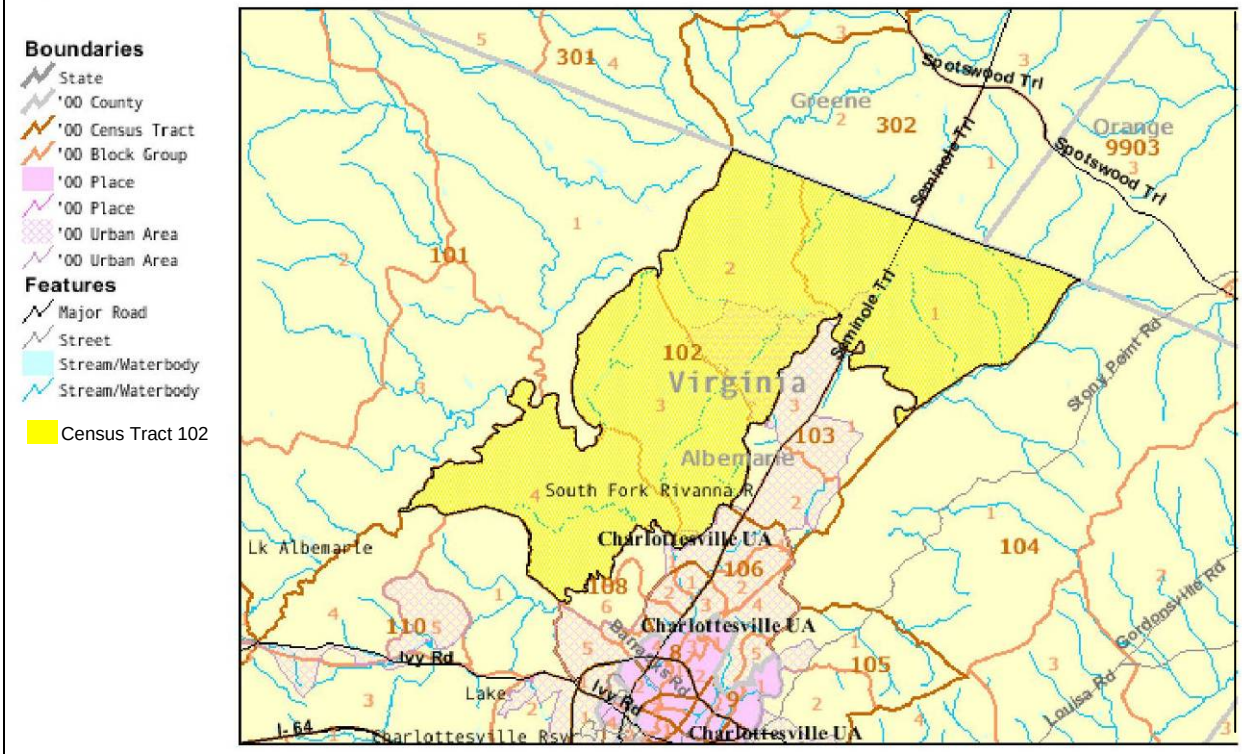
Census Tract 102, Albemarle County, Virginia
Boundaries
State
'00 County
'00 Census Tract
'00 Block Group
'00 Place
'00 Place
'00 Urban Area
'00 Urban Area
Features
Major Road
Street
Stream/Waterbody
Stream/Waterbody
Census Tract 102
301
Greene
302
Orange
9903
Spotswood Trl
Seminole Trl
101
102
Virginia
103
Albemarle
South Fork Rivanna R
Lk Albemarle
Charlottesville UA
106
108
104
110
Ivy Rd
Lake
105
Stony Point Rd
Gordonsville Rd
Louisa Rd
I-64
Charlottesville Rsvr

Figure 3-1

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The 2005 American Community Survey does not break out data for the census tract or smaller areas. Instead, data for the 5th Congressional District (110th Congress) are presented for comparison; the 5th Congressional District includes all of Albemarle county, as well as 18 other counties located mostly to the south.

Table 3.5-1

Race and Ethnic Distribution for 2000 Census (Percent)

Jurisdiction	White	Black[1]	Other Non-White	Two or More Races	Total Non-White	Hispanic[2]
Census Tract 102	91.7	6.0	1.5	0.8	8.3	1.2
Rivanna District	86.9	9.2	2.8	1.1	13.1	1.6
Albemarle County	85.2	9.7	3.8	1.3	14.8	2.6
Commonwealth of Virginia	72.3	19.6	6.1	2.0	27.7	4.7

Source: US Census Bureau Website, 2000 Census Data.

[1] Having origins in any black racial groups of Africa.

[2] Hispanic origin, may be of any race.

Table 3.5-2

2005 Total Population Estimate (Percent)

Race	State of Virginia	Albemarle County	Charlottesville, VA Metro Area	5th Congressional District
White	71.7	83.9	80.6	73.8
Black or African American	19.1	9.2	13.4	22.5
Other Non-white	9.2	6.9	6.0	3.7
Hispanic (any race)	6.0	3.5	3.2	2.2

Source: US Census Bureau, 2005 American Community Survey

Albemarle County and surrounding areas are home to proportionately less non-white minorities than the state as a whole. The Commonwealth of Virginia has proportionally three times the amount of non-white residents than Census Tract 102 (including Rivanna Station), and almost two times the percentage of minorities than Albemarle County. Table 3.5-2 shows little change in the racial and ethnic distribution of Virginia or Albemarle County since 2000, with slight increases of in the "Other Non-White" category for both. Both the state as a whole and the 5th

Congressional District are more ethnically diverse than the Albemarle County or the Charlottesville metro area.

Table 3.5-3 shows the proportion of persons under-18 living in Census Tract 102, Albemarle County, and Virginia in 2000. The Rivanna Station area (Census Tract 102) had a higher proportion of under-18 residents than the state as a whole, though not significantly greater, and Albemarle County nearly matches Virginia's population of under-18 residents.

Table 3.5-3

Under-18 Population in 2000 (Percent)

Jurisdiction/Area	Population under 18
Census Tract 102	27.3
Albemarle County	24.8
State of Virginia	24.6

Source: US Census Bureau Website, September 2007.

3.5.3 Employment and Income

Based on Census 2000 data, 6.7 percent of the population within Albemarle County was living in poverty (Table 3.5-4), compared to 9.6 percent in the state of Virginia. Census 2000 poverty data are available for smaller areas, as well; within Census Tract 102, which includes Rivanna Station, approximately 1.7 percent of the population lived in poverty. This is less than for Virginia as a whole (9.5 percent), and much less than neighboring Charlottesville metropolitan area (11.5 percent).

Additionally, income data indicate that in 1999, the median household income in Census Tract 102 was $70,392, as opposed to $50,749 for Albemarle County and $46,677 for Virginia as a whole. Thus, the population around Rivanna Station generally has a higher income level than the surrounding jurisdictions.

The Virginia Employment Commission reported Albemarle County's average employment in July 2007 to be 49,997. The number for Virginia as a whole was 3,989,048; thus, Albemarle County accounted for only 1.3 percent of statewide employment. Unemployment in Albemarle

County in July 2007 was 2.5 percent, as compared with 3.1 percent for Virginia and 4.9 percent for the United States as a whole (Virginia Employment Commission Website, September 2007).

Table 3.5-4

Median Income and Poverty for 2005 (Inflation-Adjusted Dollars)

Jurisdiction	Median Household Income ($)	Median Family Income ($)	Persons Living in Poverty (Percent)
Albemarle County	60,398	77,297	6.3
Charlottesville, VA	47,543	62,286	13.5
State of Virginia	54,240	65,174	10.0

Source: US Census Bureau Website, American Community Survey, 2005

3.5.4 Environmental Justice

Signed on February 11, 1994, Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs all federal departments and agencies to incorporate environmental justice considerations in achieving their mission. Each federal department or agency is to accomplish this by conducting programs, policies, and activities that substantially affect human health or the environment in a manner that does not exclude communities from participation in, deny communities the benefits of, nor subject communities to discrimination under such actions because of their race, color, or national origin.

According to CEQ guidance on EO 12898, "minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Low-income populations in an affected area should be identified using the annual statistical poverty thresholds from the Bureau of the Census."

As shown in Section 3.5-2, much less than half the residents of Albemarle County are minorities Therefore, the area does not qualify as an Environmental Justice community on racial or ethnic

criteria. Based on available income data, as provided in Section 3.5-4, it is also true that Albemarle County does not qualify as an Environmental Justice community on the basis of income.

EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, was signed on April 21, 1997. Because the scientific community has recognized that children may suffer disproportionately from environmental health and safety risks, the EO directs federal agencies to identify and assess such risks, and consequently to ensure that its policies, programs, activities, and standards address effects on children. "Environmental health and safety risks" are defined 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." Regulatory actions that are affected by this EO are those substantive actions that involve an environmental health risk or safety risk that an agency has reason to believe may disproportionately affect children.

Based on the age data provided in Table 3.5-3, Census Tract 102, the smallest survey area containing Rivanna Station, has more under-18 residents than the surrounding jurisdictions. The Albemarle County population of children under 18 is greater than Virginia as a whole by only 0.2%, and Census Tract 102 only includes 2.5% more under-18 residents. Rivanna Station is therefore not located in an area that supports an unusually high population of children under EO 13045.

3.6 Community Facilities and Services

3.6.1 Services

Safety and security issues at the INSCOM facilities at Rivanna Station are handled by the Albemarle County Police Department and Hollymeade Fire Rescue (Station 12). The Albemarle County Police Department was created in 1983 "*to assume primary responsibility for law enforcement in the area,*" It is located in the City of Charlottesville. Currently, 119 sworn officers, 23 civilian employees, and three animal control officers comprise the local law enforcement department (Albemarle County website, 2007). The Department is also assisted by eight Virginia State Troopers.

Hollymeade Fire Rescue provides services to a 94-square mile territory. Temporarily, the station operates out of the Charlottesville-Albemarle Airport until construction of a new facility located off Airport Road is complete in the fall of 2007. The station will be staffed 24 hours a day, seven days a week with both career and volunteer staff. The new fire and rescue resources provided by Station 12 will include an ambulance, engine, ladder, and water tanker.

The University of Virginia (UVA) Medical Center and Martha Jefferson Hospital have the ability to serve the medical needs of the employees of the facilities at Rivanna Station. Both medical facilities are located in the City of Charlottesville and are considered voluntary, non-profit, short-term acute care facilities. UVA Medical Center has a total of 591-staffed beds while Martha Jefferson Hospital has a total of 176-staffed beds (Charlottesville Area Fact Sheet, 2006). In addition to the wide variety of in-patient services provided by Martha Jefferson Hospital, an urgent care center is also open daily for minor illnesses and injuries.

The Albemarle County Public School System serves 12,500 students in 26 schools, with 16 elementary schools, five middle schools, three comprehensive high schools, one alternative high school, and one special needs school (Charlottesville Area Fact Sheet, 2006 and County of Albemarle Information Sheet, 2007). The Charlottesville-Albemarle Technical Education Center (CATEC) is a secondary and post-secondary vocational/technical school jointly operated by Albemarle County and the City of Charlottesville. Piedmont Virginia Community College and the UVA are also located within Albemarle County.

3.6.2 Recreational Facilities

Albemarle County offers nine parks to the public, providing approximately 2,000 acres of recreational areas (Charlottesville Area Fact Sheet, 2006). Leisure activities include picnicking, fishing, swimming, boating, biking, and canoeing. To promote use of these amenities, areas for boat launching and pier fishing are provided to the public. Currently, Albemarle County has 28.5 miles of trails which can be used for a walking, running, and hiking.

The Albemarle County Land Use Plan Map also shows a greenway parallel to the North Fork Rivanna River, which is adjacent to the INSCOM facilities at Rivanna Station. While greenways

are intended for recreational and non-motorized transportation purposes, they are also fashioned to promote wildlife, biodiversity, and scenic beauty.

Albemarle County recreation programs include dance and fitness classes, special events, a summer playground program, middle school sports program, tennis and swimming lessons, and soccer and baseball camps. Youth and adult athletic programs are offered throughout the County as well. Three beaches are also available to residents within Albemarle County at Chris Greene Lake, Walnut Creek, and Mint Springs Valley Park. Walnut Creek Park also has 15 miles of single-track mountain bike trails available to the public. In addition, Darden Town Park has a 2 acre, fenced dog park for dogs off leash.

In addition to the recreational opportunities provided by Albemarle County, major historical attractions are also prominent in the area.

- Ash-Lawn Highland, the home of President James Monroe, offers operas, musical theater, concerts, Christmas festivities, a wine festival, and Plantation Days.
- Court House Square, constructed in 1803, presently serves as the Albemarle County Courthouse.
- Michie Tavern, located on State Highway 53, has been restored and authentically furnished as a Museum of Historical Tavern Americana.
- Monticello, also known as the 'Little Mountain' home of Thomas Jefferson, has been completely restored and authentically furnished by the Thomas Jefferson Memorial Foundation.
- Montpelier, the home of President James Madison, is a museum offering guided tours, preservation work, interpretative programs, and archaeological experiences.

3.7 Noise

3.7.1 Noise Fundamentals

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as any sound that is undesirable

because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise may interfere with communication, produce awakenings from sleep or, in some cases, damage hearing. Noise is often generated by activities essential to a community's "quality of life", such as construction or vehicular traffic.

Sound varies by both intensity described in decibels (dB) and frequency described in Hertz (Hz). The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. The human ear responds differently to different frequencies. "A-weighing", described in a-weighted decibels (dBA), approximates this frequency response to express accurately the perception of sound by humans. Sounds encountered in daily life and their approximate level in dBA is provided in Table 3.7-1.

Table 3.7-1

Common Sound Levels

Outdoor	Sound Level [dBA]	Indoor
Snowmobile	100	Subway Train
Tractor	90	Garbage Disposal
Noisy Restaurant	85	Blender
Downtown (Large City)	80	Ringing Telephone
Freeway Traffic	70	TV Audio
Normal Conversation	60	Sewing Machine
Rainfall	50	Refrigerator
Quiet Residential Area	40	Library

Source: (Harris, 1998)

The dBA noise metric describes steady noise levels, although very few noises are, in fact, constant. Therefore, a noise metric, A-weighted Day-night Sound Level (ADNL) has been developed. Day-night Sound Level (DNL) is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10 p.m. to 7 a.m.). DNL is a useful descriptor for noise because: (1) it averages ongoing yet intermittent noise, and (2) it measures

total sound energy over a 24-hour period. In addition, Equivalent Sound Level (Leq) is often uses to describe the overall noise environment. Leq is the average sound level in dB.

3.7.2 Regulatory Requirements

The Noise Control Act of 1972 (PL 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. In 1974, the EPA provided information suggesting continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, and hospitals.

Albemarle County Code prohibits the creation of sound that causes a 15 dBA increase above the ambient sound level. In addition, it prohibits the creation of any excessive noise on any street adjacent to any school, institution of learning, court, or hospital that interferes with its function. Sounds generated from construction and demolition activities are exempt from the ordinance between 7:00 A.M. and 10:00 P.M. (Albemarle County Code 7-100 through 108).

3.7.3 Existing Conditions

Several existing sources of noise near the proposed site currently exist, including local road traffic, high-altitude aircraft overflights, and natural noises such as bird vocalizations. Existing noise levels (DNL and Leq(24)) were estimated for the proposed site and surrounding areas using the techniques specified in the "American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound. Part 3: Short-term measurements with an observer present"; Section 9.3.2 "Table look-up method to determine the long-term background sound level ", ANSI S 12.9-1993 (R2003)/Part 3 (Table 3.7-2).

Table 3.7-2

Estimated Existing Noise Levels (dBA) at Proposed Site

Leq(Daytime)	Leq(Nighttime)	Leq(24)	ADNL
51	45	48.3	53.0

Source: (ANSI, 2003)

3.8 Natural Resources

Rivanna Station is located in a wooded area with former pasture land, north of Charlottesville. Fort Belvoir actively manages and conserves natural resources within its boundaries, as well as at Rivanna Station.

3.8.1 Physiography and Soils

Physiography

Rivanna Station lies in the foothills portion of the Piedmont Physiographic Province. The Piedmont extends from the fall line on the east to the Blue Ridge Mountains in the center of the state. Hard, crystalline igneous and metamorphic formations dominate this region, with some areas of sedimentary rocks with saprolite deposits overlying the bedrock.

Land features at Rivanna Station range from rolling hills to relatively steep stream valleys. The elevation of Rivanna Station ranges from approximately 360 ft above msl along the North Fork Rivanna River to approximately 515 ft above msl at the in the northeastern portion of the site.

The NGIC building is located in the relatively flat central portion of the site. Steep hillsides to the west of the NGIC building slope down to North Fork Rivanna River and Herring Branch. Steep hillsides to the south of the NGIC building also slope down to the North Fork Rivanna River, while the existing parking area to the south of the NGIC slopes downward to the old farm pond on the property. The proposed JUIAF site is in the southern rolling hill portion of the site, which also slopes downward, northwest toward the farm pond. The land north of Boulders Road proposed for purchase consists of relatively steep slopes that border Herring Branch, which forms the northwestern property boundary.

Soils

The Natural Resources Conservation Service (NRCS) – formerly the Soil Conservation Service (SCS) – described and delineated the soil units in the project site as Albemarle fine sandy loam, Albemarle very stony fine sandy loam, Buncombe loamy sand, Catoctin very stony silt loam, Cullen loam, Elioak loam, Fluvanna silt loam, Glenelg loam, Hazel loam, Louisburg sandy loam, manor loam, and Meadowville loam (Figure 3-2: Soils and Stream Buffers). The letter in the

alphanumeric designation for the soil series indicates slope characteristics. The Hydrologic Unit indicates permeability and infiltration capacity, with A and B being relatively rapid, and C and D being relatively slow. Soils with a Hydrologic Unit Code of A or B are suitable for LID practices as a means for managing stormwater; those soils with a Hydrologic Unit Code of C or D are not suitable.

Albemarle fine sandy loams (soil series 2B, 2C, and 2D on Figure 3-5) and Albemarle very stony fine sandy loam (soil series 3D) are gently sloping to steep, shallow, well drained soils. These soils are classified as Hydrologic Group B and their permeability is moderate. These soils are not flooded, ponded, or hydric.

Buncombe loamy sand (soil series 10) is a nearly level to gently sloping excessively drained soil. This is classified as Hydrologic Group A and its permeability is rapid. This soil is frequently flooded and not ponded or hydric.

Catoctin very stony silt loam (soil series 13 C and D) is a strongly sloping to steep, well drained soil. It is classified as Hydrologic Group C and its permeability is moderately rapid. This soil is not flooded, ponded or hydric.

Cullen loam (soil series 19C) is a strongly sloping to moderately steep, well drained soil. This soil is classified as hydrologic group C, and its permeability is moderate. Cullen loam is not flooded, ponded or hydric.

Elioak loam (soil series 27B and C) is a gently to moderately steep, well drained soil. This is classified as hydrologic group C and its permeability is moderately slow. This soil is not flooded, ponded or hydric.

Fluvanna silt loam (soil series 32C) is strongly sloping to moderately steep, well drained soil. This soil is classified as hydrologic group C and its permeability is slow. This soil is not flooded, ponded, or hydric.

Glenelg loam (soil series 34D and E) is a moderately steep to steep, well drained soil. This is classified as hydrologic group B and its permeability is moderate. This soil is not flooded, ponded or hydric.

Hazel loam (soil series 27B) is a steep, excessively drained soil. This is classified as hydrologic group C and its permeability is moderately rapid. This soil is not flooded, ponded or hydric.

Louisburg sandy loam (soil series 47E) is a steep, well drained soil. This is classified as hydrologic group B and its permeability is rapid. This soil is not flooded, ponded or hydric.

Manor loam is a steep, well drained soil. This is classified as hydrologic group B and its permeability is moderate. This soil is not flooded, ponded or hydric.

Meadowville loam (soil series 50E) is a gently sloping to moderately sloping, well drained soil. This is classified as hydrologic group B and its permeability is moderate. This soil is not flooded, ponded or hydric.

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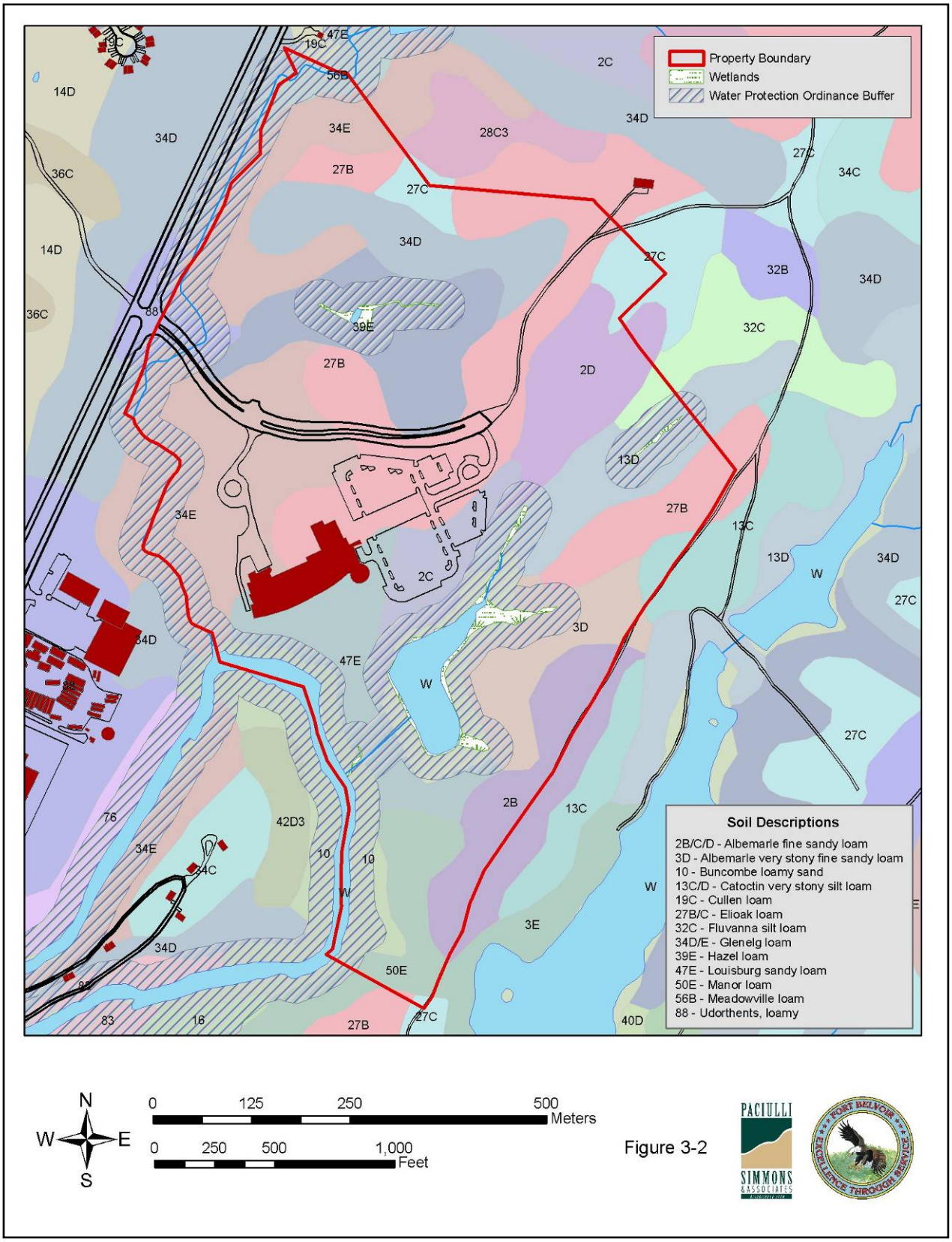
Property Boundary
Wetlands
Water Protection Ordinance Buffer
Soil Descriptions
2B/C/D - Albemarle fine sandy loam
3D - Albemarle very stony fine sandy loam
10 - Buncombe loamy sand
13C/D - Catoctin very stony silt loam
19C - Cullen loam
27B/C - Elioak loam
32C - Fluvanna silt loam
34D/E - Glenelg loam
39E - Hazel loam
47E - Louisburg sandy loam
50E - Manor loam
56B - Meadowville loam
88 - Udorthents, loamy
N
W
E
S
0 125 250 500 Meters
0 250 500 1,000 Feet

Figure 3-2

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3.8.2 Water Resources

Groundwater

All of the Albemarle County's major public water supplies are surface supplies, which approximately half of the County's population uses for consumptive uses. The other half uses groundwater via private, individual wells and springs or small community systems (Albemarle County Comprehensive Plan, 1999).

Albemarle County consists primarily of metamorphic and igneous rocks overlain by a "regolith" layer composed of soil, saprolite or weathered bedrock, and alluvium from streams. Groundwater is stored in the pore spaces of the regolith and in fractures of the underlying bedrock. Fractures are the usual source of well water, since most wells are cased to the depth of bedrock to prevent surface contamination. Fractures decrease with depth, and most occur within one hundred feet of the top of the bedrock. The greater the number of fractures in the rock aquifer penetrated by the well, the greater the well yield.

Black and Veatch completed the Urban Raw Water Management Study in November 1994, for the RWSA. An addendum to the report outlined the possibility, based on computer models, of augmenting the safe yield of the North Fork water system by using supplemental releases of water from Chris Greene Lake. According to the study, the North Fork system could increase its safe yield from 1 million gallons per day to approximately 2 million gallons per day, which is the current treatment capacity of the North Fork plant (Albemarle County Comprehensive Plan, 1999).

Surface Water

The North Fork Rivanna River forms a portion of the southwestern site boundary. The Herring Branch flows along the western site boundary and discharges to the North Fork Rivanna River. Surface water from the portion of the site located north of Boulders Road, is conveyed by sheet flow to small tributaries and Herring Branch. An existing stormwater management pond (SWM), located northwest of the farm pond is currently used for stormwater retention for runoff from the parking lots is located in the southern central portion of the site. Sheet flow from the existing NGIC parking lots currently flows east or southeast into vegetated swales, and into the

stormwater management pond, which discharges into the North Fork Rivanna River. Sheet flow from the undeveloped southeastern portion of the site flows to the northwest towards the farm pond. Overall drainage is ultimately to the southwest, into the North Fork Rivanna River.

3.8.3 Environmentally Sensitive Areas

Environmentally sensitive areas are defined as those areas where development would adversely affect the region surrounding that area, or where the engineering for development would incur excessive costs. Environmentally sensitive areas include wetlands, floodplains, and areas with steep topography, poor soils, endangered species habitat, and cultural resources (US Army Garrison Fort Belvoir, 2001b). The latter two categories are addressed in Subchapters 3.8.5 and 3.9, respectively.

North Fork Rivanna River is habitat for the federal and state endangered James spinymussel (*Pleurobema collina*), a freshwater mussel, the federal species of concern and state threatened Atlantic pigtoe (*Fusconaia masoni*), a freshwater mussel, and there are federally listed species in Albemarle and adjacent counties. These species are also addressed in Subchapter 3.8.5.

The Corps of Engineers (COE) and the VDEQ both regulate waterways and wetlands. Section 404 of the Clean Water Act (CWA) directed the COE to require permits for the discharge of dredged and fill material into “waters of the US," a term that includes rivers, lakes, and most streams and wetlands. Any action requiring a Section 404 CWA permit also requires a Section 401 water quality certification from the state agency with authority over water quality issues, which in Virginia is the VDEQ. The Commonwealth of Virginia adopted legislation in 1997 that expanded their authority beyond commenting on water quality issues for the Section 401 certification program into a state wetland regulatory program, the Water Protection Permit (VWP) program, and the Commonwealth now requires permits for any project that would alter a waterway or wetland. Whereas the COE does not typically regulate isolated wetlands, the VDEQ does. A wetland survey was completed by Williamsburg Environmental Group (WEG) in November 2003 and a jurisdictional determination was obtained in February 2004 for the site. The identified wetlands are depicted on Figure 3-3, Wetlands and Stream Buffers.

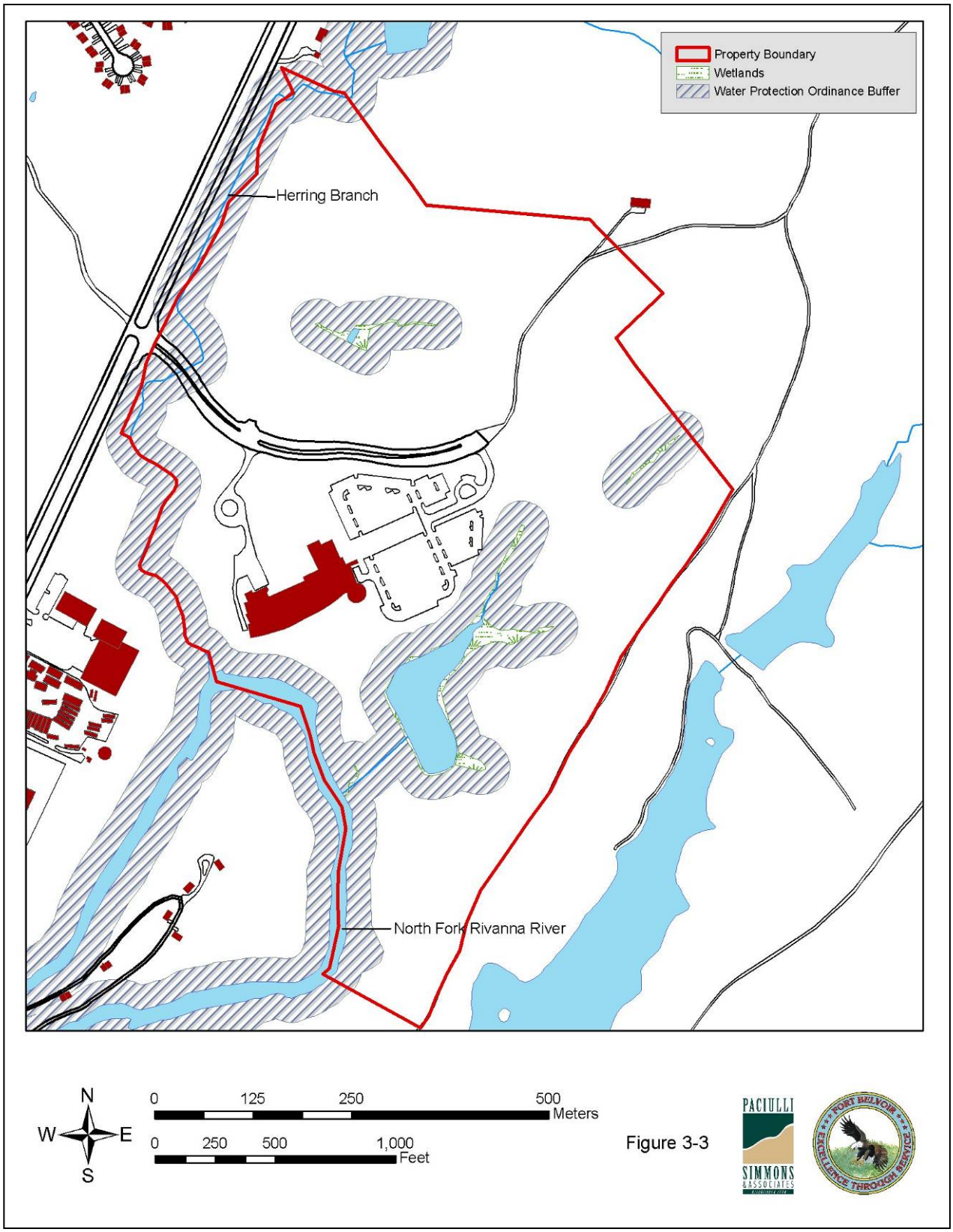
Property Boundary
Wetlands
Water Protection Ordinance Buffer
Herring Branch
North Fork Rivanna River
N
W
E
S
0 125 250 500 Meters
0 250 500 1,000 Feet

Figure 3-3

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Chapter 17, Water Protection, of the Albemarle County Code designates stream buffers, including floodplains, as environmentally sensitive areas that may be constrained for construction and are compatible only with very low-density or no development (Albemarle County Code, 2007). In accordance with the Albemarle County Code, development within stream buffers is restricted to water dependent activities, maintenance of public activities, passive recreation, water wells, and historic preservation. The Albemarle County Code states that stream buffer shall be no less than 100 feet wide on each side of such perennial streams and contiguous nontidal wetlands, measured horizontally from the edge of the nontidal wetlands, or the top of the stream bank if no wetlands exist.

The proposed site is for the most part outside the limits of the stream buffers (Figure 3-5). The existing pond, south of the NGIC building is within the stream buffer, and there are some small wetlands near the proposed JUIAF, VCC, and RDF sites.

3.8.4 Vegetation and Wildlife

Rivanna Station possesses a range of habitats, from fairly extensive areas of undisturbed mature forest to significant areas of grassy habitat succeeding to old-field, with transition areas between them.

Rivanna Station includes natural vegetation of a mix of forested areas, open grasslands, and built-up areas. The forest species include tulip poplar (*Liriodendron tulipifera*), American beech (*Fagus grandifolia*), northern red oak (*Quercus rubra*) and white oak (*Quercus alba*) with red maple (*Acer rubrum*) and sycamore (*Platanus occidentalis*) found in the wetlands and along the floodplain. The existing NGIC facility includes developed areas, improved grounds, and semi-improved grounds. Dominant vegetation in the developed area includes mixed turf grasses and landscape trees and shrubs along the site periphery, in parking lot islands, and in association with existing buildings.

3.8.5 Threatened and Endangered Species

Under the Endangered Species Act (ESA) of 1973, plant and animal species in danger of extinction throughout all or a part of their range are listed as “endangered.” Species that are

likely to become endangered within the foreseeable future throughout all or a significant part of their range are listed as "threatened." Endangered and threatened listings impart protective status to the listed species and their habitats. Additional designations under the ESA are "proposed endangered" and "proposed threatened" for species awaiting additional data to determine the need for listing; and "candidate" where the data support a species listing, but the listing procedure has been delayed.

States also list and protect "endangered" and "threatened" species vulnerable to extinctions at the state level. States generally have Natural Heritage Programs that maintain listings and rarity (i.e., conservation) rankings of rare plant and animal species, and ecological communities. Unlike endangered and threatened listings, rare species listings and their rankings are not legal designations, and do not provide any protective status. They are used to prioritize resources for conservation. Virginia's Department of Conservation and Recreation, Division of Natural Heritage (VDCR-DNH) manages the Virginia National Heritage Program (VNHP).

In addition to maintaining the endangered and threatened species lists, VDCR-DNH rates individual species and communities with resource conservation rankings from S1 (extremely rare) to S5 (very common). VNHP rates specific sites of these species and communities with site conservation rankings of B1 (outstanding significance) to B5 (general biodiversity significance).

Coordination with the VDCR-DNH (letter dated September 12, 2007) has indicated that the Atlantic pigtoe (*Fusconaia masoni*) has been documented in the North Fork Rivanna River adjacent to the project site. The Atlantic pigtoe is a medium-sized freshwater mussel reaching a length of 60 mm. The Atlantic pigtoe prefers clear, swift waters with gravel or sand and gravel substrates and is limited to the headwater areas of drainages. The VDCR-DNH letter also states that the proposed activity will not affect any documented state-listed plants or insects.

Coordination with U.S. Fish and Wildlife Service (USFWS) (letter dated September 4, 2007) has indicated that federally listed, proposed, and candidate species of James spinymussel (*Pleurobema collina*) and the Indiana bat (*Myotis sodalist*) have been identified in the county or adjacent counties. USFWS also identified the following "species of concern" in the county: Bald

eagle (*haliaeetus leucocephalus*), Atlantic pigtoe (*Fusconaia masoni*), Appalachian grizzled skipper (*Pyrgus wyandot*), sword-leaved phlox (*Phlox buckleyi*), and Virginia mallow (*Sida hermaphrodita*). USFWS recommends surveys for the James spinymussel and the Indiana bat, if appropriate habitat is present. Based on the potential for suitable habitat for the Appalachian grizzled skipper identified in previous EAs, Fort Belvoir recommends completing a survey to identify current or potential future habitat for the Appalachian grizzled skipper.

Coordination with the Virginia Department of Game and Inland Fisheries (VGIF) (letter dated September 26, 2007) has indicated that the federally and state endangered species of the James spinymussel (*Pleurobema collina*) and the federal species of concern and state threatened Atlantic pigtoe (*Fusconaia masoni*) have been documented approximately 0.5 mile and 1.75 miles, from the project site. VGIF indicated that field surveys may be necessary to determine the presence or absence of the freshwater mussels.

3.9 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA), as amended, requires federal agencies to integrate consideration of historic preservation issues into the early stages of their planning projects. Under Section 106, the head of any federal agency having direct or indirect jurisdiction over a proposed federal or federally financed undertaking is required to account for the effects of this action on any district, site, building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places (NRHP). Eligibility determinations are based on criteria for historic significance contained in 36 CFR 60.4.

The Virginia Department of Historic Resources (DHR) is the designated State Historic Preservation Office (SHPO), in charge of administering Section 106 in the Commonwealth of Virginia. The SHPO must be consulted about any potential adverse effects from a federal action to protected architectural or archaeological resources. If adverse effects are expected, appropriate mitigation measures must be developed, also in cooperation with the SHPO.

The first step in the Section 106 review process is to determine whether any protected cultural resources that might potentially be affected by the proposed action exist in or near the project area. For this project, only resources fully or partially located on or within the NGIC and JUIAF project boundary are likely to be potentially affected by the proposed action. Therefore, the area of potential effect (APE) for this proposed action consists of the proposed development area within Rivanna Station.

3.9.1 Architectural Resources

There are no National Register-listed or eligible architectural resources on the property. The existing NGIC building is of recent vintage (2001) and does not qualify for listing under the criteria in 36 CFR 60.4.

3.9.2 Archaeological Resources

Rivanna Station and surrounding area, has been surveyed for purposes of archaeological resource identification. A total of 11 archaeological sites have been identified within one mile of Rivanna Station. Two archaeological sites and one isolated find are known to be present on the Rivanna Station Property: 44AB0514, 44AB0528 and Isolated Find 495-2.

44AB0514, located on a small ridge to the northeast of the pond, appears to be a domestic trash scatter dating to the late nineteenth to early twentieth centuries. The site was identified in the Phase I Cultural Resources Survey of the Proposed Expansion South of Boulder Way, NGIC Facility, Albemarle County, Virginia, dated March 2004. The initial survey determined that due to modern impacts to the site and the lack of site integrity, 44AB0514 was not eligible for listing in the National Register of Historic Places (NHRP). Fort Belvoir requested the Virginia SHPO's concurrence on this finding in a letter dated May 3, 2007. On June 15, 2007, the SHPO concurred with this finding. Copies of both letters are included in Appendix B.

44AB0528, located within the project area north of Boulder Way, is a cemetery dating to the late nineteenth to early twentieth centuries. The site is currently forested. The site was identified in the Phase I Cultural Resources Survey of the Proposed Expansion North of Boulder Way, NGIC Facility, Albemarle County, Virginia, dated January 2007. The initial survey identified: six

graves with both headstones and footstones recording the names of the individual; seven graves marked with fieldstones; and one grave appeared with no formal markings, identified only by a depression. A review of local history did not reveal any information related to this cemetery, and it does not appear to be eligible for listing in the NHRP.

Fort Belvoir requested the Virginia SHPO's concurrence on this finding in a letter dated May 3, 2007. On June 15, 2007, the SHPO concurred with this finding. Copies of both letters are included in Appendix B.

Isolated Find 495-2 was a possible Hardaway-Dalton type projectile point that was discovered during shovel testing south of the pond. No other artifacts were recovered during shovel testing. Since this is an isolated find and does not meet the minimum criteria established by VDHR, it may not be considered for inclusion on the NRHP, and no further work was recommended for the area.

3.10 Hazardous Substances

Hazardous waste management at Rivanna Station is conducted in compliance with RCRA. There are no hazardous waste accumulation sites within the immediate vicinity of the proposed site, therefore the site is considered Category I.

Rivanna Station participates in the "Greening of Government" program (EO 13101, Chapter 7) that promotes the purchasing of products to reduce solid and hazardous waste through implementing a centralized system for tracking procurement, distribution, and management of toxic or hazardous material. In addition, the cleaning and maintenance departments have replaced toxic and hazardous materials with environmentally-friendly chemicals. The Emergency Planning and Community Right-to-Know Act (EPCRA) responsibility for filing annual hazardous material and toxic chemical reports is through Fort Belvoir ENRD (Chapter 7).

Rivanna Station has one 10,000-gallon diesel UST, which is located northwest of the current NGIC building. The 10,000-gallon diesel UST is constructed of double walled fiberglass and

was installed on June 6, 2001. The UST is equipped with a Veeder-Root leak detection system. The diesel fuel is pumped from the 10,000-gallon UST to two 100-gallon ASTs, which serve as day-tanks, and are located adjacent to the emergency generator.

Based on a review of federal and state environmental databases, the proposed site does not appear to have been subjected to disposal of any hazardous waste. There are no known hazardous waste contaminated sites in close proximity to the proposed site (USEPA and VDEQ websites, September 2007).