



**Environmental Assessment for
Establishing Mine Resistant Ambush Protected (MRAP)
Vehicle Storage and Repair Facilities at
Joint Base Charleston/Army Strategic Logistics Activity
Charleston, South Carolina
(DRAFT)**

EXECUTIVE SUMMARY

ES-1 BACKGROUND

In July 2011, the U.S. Army Materiel Command (AMC) finalized *Operation Order 11-141 Implementation of Decision Point 147 MRAP Allocation Plan of the Army Campaign Plan* to determine distribution of mine resistant ambush protected (MRAP) vehicles. That order served as approval for AMC Major Subordinate Commands to develop plans to receive, store, and maintain the MRAP vehicles for Army Pre-Positioned Stocks and Pre-Deployment Training Equipment.

AMC calls for the direct movement of approximately 3,585 MRAP vehicles from Red River Army Depot at Texarkana, Arkansas, to Joint Base Charleston (JBCHS), South Carolina, specifically, Army Strategic and Logistics Activity Charleston (ASLAC, within JBCHS), for maintenance and storage. On the basis of planning documents, it was determined that construction and operation of new MRAP vehicle maintenance and storage facilities at ASLAC was the only viable options that meets the requirements of the operation order. Existing facilities were either not available or not suitable for use.

To meet the planning requirements of the operation order at ASLAC and the need to construct and operate new facilities for the maintenance and storage mission, this Environmental Assessment (EA) was prepared on behalf of the US Air Force Mobility Command. The EA evaluates the potential effects on the natural and human environment from activities associated with implementing the proposed action and alternatives at the installation.

This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), Council of Environmental Quality (CEQ) and Air Force Environmental Impact Analysis Process, as promulgated in Title 32 of the Code of Federal Regulations (CFR) Part 989.

ES-2 PROPOSED ACTION

Per the operation order, ASLAC will need to store and maintain approximately 3,585 MRAP vehicles of multiple variants of which 514 would need to be ready for movement within 96 hours. The Army proposes to construct and operate enclosed MRAP vehicle storage space, a vehicle maintenance facility, an armory, and supporting facilities. The enclosed vehicle storage space would consist of 12 dehumidified metal buildings approximately 133,000 square feet (SF) in size. The vehicle maintenance facility would be a 53,544-SF, 38-bay, metal building; the armory for controlled items (such as weapons and sensitive equipment) would be a 9,000-SF, hardened-type concrete structure. Supporting facilities would include utilities and connections, lighting, parking, walkways, curb and gutter, and storm drainage. The storage buildings and the vehicle maintenance facility would be of permanent construction with reinforced concrete foundations; concrete floor slabs; structural steel frames; plumbing; heating, ventilation, and air conditioning (HVAC) systems; and mechanical, security, and electrical systems. The armory will

be constructed in a like manner, with the inclusion of concrete walls and ceiling. Each building would include sustainable design and development consistent with the 2005 Energy Policy Act.

The maintenance requirement for each of the 3,585 MRAP vehicles would be once every 4 years. Maintenance would be conducted in accordance with established protocol and would include cleaning, inspecting, calibration, preserving, lubricating, adjusting, testing and replacing parts, changing/checking engine fluids and fuel, and repairs. Once each vehicle is serviced, it would be returned to storage until the next servicing interval.

ES-3 PURPOSE AND NEED

The purpose of the proposed action is to provide the necessary facilities at ASLAC to support the operation order requirement to maintain and store MRAP vehicles being returned from theater for Army Pre-Positioned Stocks. The need for the proposed action (constructing new maintenance and storage facilities and conducting vehicle maintenance) is to provide long-term storage for an MRAP vehicle fleet that is properly allocated, configured, and positioned to support the full range of future Army contingency operations. Appropriate maintenance and storage facilities need to be constructed to satisfy the requirements of the mission.

ES-4 PREFERRED ALTERNATIVE AND NO-ACTION ALTERNATIVE

Site selection at ASLAC was coordinated with JBCHS. The Preferred Alternative and a No-Action Alternative are analyzed in detail in this EA. Other potential Alternative sites were considered but were eliminated during preliminary screening.

ES-4.1 ALTERNATIVE 1: NO-ACTION ALTERNATIVE

The No-Action Alternative is included as required by The Council on Environmental Quality (CEQ) regulations to identify the baseline conditions against which the potential impacts of implementing the alternatives are evaluated. The No-Action Alternative must be described because it represents the benchmark condition of the environment if the proposed action is not implemented. Under the No-Action Alternative, ASLAC would not receive the approximately 3,585 MRAP vehicles; the proposed construction and operation of maintenance and storage facilities and the maintenance and storage functions would not occur. The MRAP vehicles would be distributed to other locations in the United States, overseas or afloat. Implementing the No-Action Alternative would not meet the purpose of and need for the proposed action, but it is analyzed in detail in this EA as required by CEQ.

ES-4.2 ALTERNATIVE 2: PREFERRED ALTERNATIVE

The Preferred Alternative consists of constructing and operating maintenance and storage facilities at ASLAC for MRAP vehicles and maintenance and storage of vehicles on the site identified as Site 5. Site 5 is an undeveloped, wooded parcel on approximately 95 acres in the northern portion of ASLAC, just outside the ASLAC fence. Site 5 is the Preferred Alternative because of its proximity to a vehicle test track, vehicle load/offload point, and armory. Site 5 is isolated from existing missions, thus minimizing congestion and reducing construction effects on

the ongoing maintenance functions. Site 5 would require minimal road travel of MRAP vehicles to and from the load/offload point or to and from the test track.

ES-5 CONSEQUENCES

The EA evaluated potential effects on land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomic, traffic and transportation, utilities, and hazardous and toxic substances. The predicted effects on evaluated resource areas at ASLAC are briefly described below in Table ES-1. The table provides a summary and comparison of the effects of the Preferred Alternative versus the No-Action Alternative.

Table ES.1: ASLAC Summary of Potential Environmental and Socioeconomic Consequences		
Resource	Preferred Alternative	No-Action Alternative
Land Use	No effect	No effect
Aesthetics and Visual Resources	Short-term insignificant adverse Long-term insignificant adverse	No effect
Visual Resources	Short-term insignificant adverse Long-term insignificant adverse	No effect
Air Quality	Short-term insignificant adverse Long-term insignificant adverse	No effect
Noise	Short-term insignificant adverse Long-term insignificant adverse	No effect
Geology/Soils		
Geology/Topography	No effect	No effect
Soils	No effect	No effect
Water Resources		
Groundwater	Short-term insignificant adverse	No effect
Surface water	Short-term insignificant adverse	No effect
Wetlands	Long-term insignificant adverse (Mitigated)	No effect
Floodplains	No effect	No effect
Coastal Zone Management	No effect	No effect
Biological resources		
Vegetation	Long-term insignificant adverse	No effect
Wildlife	Long-term insignificant adverse	No effect
Threatened and Endangered Species	No effect	No effect
Cultural Resources	No effect	No effect
Socioeconomics		
Regional Economic Activity	Short-term insignificant beneficial	No effect
Environmental Justice	No effect	No effect
Protection of Children	No effect	No effect
Transportation	Short-term insignificant adverse	No effect
Utilities	Short-term insignificant adverse Long-term insignificant adverse	No effect
Hazardous and Toxic Substances	Long-term insignificant adverse	No effect

The Preferred Alternative at ASLAC would be expected to result in short-term insignificant adverse effects on groundwater and surface water, and long-term insignificant adverse effects on wetlands. No adverse effects on cultural resources would be expected at the Preferred Alternative site at ASLAC.

ES-6 CUMULATIVE EFFECTS

If the proposed is undertaken at either site, it will result in the temporary and permanent impacts shown above. Temporary impacts include the potential of offsite sedimentation and increased traffic during construction phase. Permanent impacts include the potential loss of terrestrial and aquatic habitats, alterations to the site's hydrology, and the constant threat of pollution releases to the environment due to routine activities. The majority of these impacts are considered insignificant, however, and their potential effects can be reduced through appropriate mitigation and the implementation of applicable best management practices.

ES-7 MITIGATION

Mitigation for any jurisdictional wetland loss at either ASLAC site would be required to address adverse impacts to aquatic resources. Mitigation for wetland loss would have to be fully compensated through implementation of a wetland mitigation plan. The USACE in conjunction with JBCHS/ASLAC, would determine appropriate mitigation for the impact in compliance with the Charleston District's Mitigation SOP and the Corps 2008 Mitigation Rule. The mitigation could take the form of purchasing credits in a wetland mitigation bank or through the restoration, creation, or enhancement of wetlands, either (preferably) on-site or at a selected off-site location agreed to by the USACE. If necessary, an application for a section 404 permit will be coordinated by the USACE Charleston District for the selected site. If the Alternate Site 4.5 is selected, an archaeological survey of the site would be required to determine if any archaeological resources are present.

ES-8 CONCLUSIONS

Implementing the proposed action at the Preferred Site at ASLAC would not be expected to have any significant effects on the quality of the natural or human environment.

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1 PURPOSE AND NEED

1.1 Introduction

In July 2011, the U.S. Army Materiel Command (AMC) finalized *Operation Order 11-141 Implementation of Decision Point 147 MRAP Allocation Plan of the Army Campaign Plan* to determine distribution of approximately 16,277 mine resistant ambush protected (MRAP) vehicles in Kuwait to multiple locations in the United States, overseas, and afloat. That order served as authorization for AMC Major Subordinate Commands to develop plans to receive, store, and maintain the MRAP family of vehicles for Army Pre-Positioned Stocks and Pre-Deployment Training Equipment. AMC calls for the direct movement of approximately 3,585 of the 16,277 MRAP vehicles from Red River Army Depot or other locations to Joint Base Charleston (JBCHS), South Carolina, specifically, Army Strategic and Logistics Activity Charleston (ASLAC, within JBCHS), for maintenance and storage. A planning study examined multiple facilities that could fulfill this need and ASLAC at JBCHS was chosen as the proposed site (Colorado Datascares, LLD and the U.S. Army Engineering and Support Center, 2012).

MRAP vehicles are armored vehicles designed with a blast-resistant, V-bottomed underbody that increases crew survivability from mine blasts and fragmentary, direct-fire weapons; and they increase war fighters' mobility in military operations. Capable of carrying up to ten personnel—including a driver, commander, and gunner—they are used for mounted patrol, reconnaissance, communications, command and control, ambulance, vehicle recovery, and in interaction with local populations. ASLAC is to receive approximately 3,585 MRAP vehicles.

1.1 1.2 Background

In response to the operation order, ASLAC held a planning charette and has developed planning documents such as Department of Defense (DoD) Form 1391 and requirements analysis. Those planning documents are prepared to quantify the requirements for permanent facilities needed to receive, store, and maintain MRAP vehicles for Army Pre-Positioned Stocks. On the basis of those planning documents, it was determined that construction and operation of new MRAP vehicle maintenance and storage facilities at ASLAC was the only viable option which meets the requirements of the operation order. Facility criteria were developed by Colorado DataScapes, LLC and the U.S. Army Engineering and Support Center (Colorado DataScapes, LLC and the U.S. Army Engineering and Support Center, 2012). These criteria included the following facilities: vehicle test track, petroleum/lubricant/hazardous wastes storage facility, vehicle maintenance facility, armory, controlled humidity warehouse and depot, open storage areas, and staging/marshalling areas. Existing facilities were either not available or suitable for use. The ASLAC facility is proximate to rail and port facilities, has an existing track available for MRAP use, and has the available land to accommodate the proposed expansion for maintenance and

storage facilities. To facilitate environmental planning for the requirements of the operation order at ASLAC and the need to construct and operate new facilities for the maintenance and storage mission this Environmental Assessment (EA) was prepared. This EA evaluates the environmental impacts of the construction and operation of new maintenance and storage facilities at ASLAC and the maintenance and storage of the MRAP vehicles.

1.2 1.3 Purpose and Need for Action

The purpose of the proposed action is to provide the necessary facilities at ASLAC to support the operation order requirement to maintain and store MRAP vehicles being returned from theater for Army Pre-Positioned Stocks. ASLAC was one of two sites selected for this mission because it already undertakes similar maintenance and storage functions, and has multi-modal mobility capabilities for readily receiving or deploying military vehicles and equipment.

The need for the proposed action—which is constructing multiple new maintenance and storage facilities and conducting vehicle maintenance—is to provide long-term storage for an MRAP vehicle fleet that is properly allocated, configured, positioned to support the full range of future Army contingency operations, and provide a limited number (approximately 514 vehicles) of MRAP vehicles from selected locations that are ready and available for movement with 96 hours. Planning charettes conducted December 12–14, 2011, at JBCHS validated that facilities capable of meeting this need are not currently available at any existing DOD facility, and that maintenance and storage facilities need to be constructed to satisfy the requirements of the mission. It was determined that the ASLAC facility was closest to fulfilling this mission due to the fact that ASLAC currently undertaking similar missions.

1.4 SCOPE OF ANALYSIS

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) and implementing regulations issued by the Council on Environmental Quality (CEQ) (Title 40 of 36 the Code of Federal Regulations [CFR] Parts 1500–1508) and the Army (32 CFR Part 651) and Air Force (32-CFR 989). This EA considers ASLAC for establishing MRAP vehicle storage and maintenance facilities for AMC. This EA examines selected resource areas for potential environmental impacts that could result from implementing the proposed action and alternatives at ASLAC. The resource areas evaluated in this EA are land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics, traffic and transportation, utilities, and hazardous and toxic substances. This EA compares the actual or anticipated impacts for each alternative considered at ASLAC.

In accordance with applicable regulations and policies, ASLAC sent scoping letters (thus initiating the Air Force Interagency and Intergovernmental Coordination for Environmental

Planning (ICEP) to potentially interested local, state, and federal stakeholders, describing the Proposed Action and requested assistance in identifying potential issues that should be evaluated in the EA. In addition, project consultation was initiated with federally recognized American Indian Tribes recommend by the SC SHPO. Copies of all consultation letters and responses are found in Appendix C.

An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archaeologists, historians, and military technicians has analyzed the proposed action and No-Action alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the proposed action at ASLAC. The proposed action for the installation and all alternatives are described in Section 2. Section 3 describes baseline conditions, the expected effects of the proposed action, and baseline study recommendations for ASLAC. The baseline conditions and the expected effects of the proposed action are described in Section 4. Section 5 summarizes and compares the actual or anticipated impacts of the Preferred Alternative.

2 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Per Operation Order 11-141, ASLAC will need to store and maintain approximately 3,585 MRAP vehicles of which 514 would need to be ready for movement within 96 hours. Proposed construction and operational requirements are provided below.

2.1 Construction

To meet mission requirements, the Army proposes to construct and operate enclosed MRAP vehicle storage space, a vehicle maintenance facility, an armory, and supporting facilities. Table 2.1 provides information on the size of those facilities. The enclosed vehicle storage space would consist of 12 dehumidified metal buildings (Figure 2-1). Each building would be approximately 133,000 square feet (SF). The vehicle maintenance facility would be a 53,544 SF, 38-bay, metal building; the armory for controlled items such as weapons or sensitive equipment would be a 9,000 SF, hardened-type concrete structure. Supporting facilities would include utilities and connections, lighting, parking, walkways, curb and gutter, and storm drainage. The storage buildings and the vehicle maintenance facility would be of permanent construction with reinforced concrete foundations; concrete floor slabs; structural steel frames; plumbing; heating, ventilation, and air conditioning (HVAC) systems; and mechanical, security, and electrical systems. The armory would have similar characteristics, but it would be a hardened structure with concrete walls and ceiling. Each building would include sustainable design and development and Energy Policy Act of 2005 features. Additional actions taken to construct the facilities would include land clearing, fencing, and general site improvements. Force protection (physical security) measures would be incorporated into the design as needed.

Facility	Approximate Size (Square Feet)
Enclosed MRAP Storage (12 Buildings)	1,600,000
Vehicle Maintenance Facility	53,544
Other exterior impervious surfaces (Aprons, parking, walkway, curbs and gutters)	9,000

2.2 Operations

MRAP vehicles arriving at ASLAC would be shipped over several months by train, truck, and ship. The MRAP vehicles arriving by ship would likely be driven from the port along established routes (Figure 2-3) approximately 10 miles to ASLAC. Short term storage (annually phased from FY14 to FY18) of MRAPs would occur at the ASLAC Compound and Pier C (Figures 2-3 and 2-4) until construction is complete. (The storage facilities at Pier C are existing parking lots.) Any vehicles temporarily staged outdoors at an ASLAC location will be fitted with covers. Vehicles arriving by rail would be unloaded at a load/offload point in Lot 5N (Figure 2-3), which is near a military vehicle test track. The vehicles would then be driven to the selected site. Trucks delivering vehicles would use an existing route within ASLAC that directs truck operators to a

receiving office in Building 317. From Building 317 the trucks would continue to the load/offload point. Next, the MRAP vehicles would be unloaded and driven to the selected site.

Once the MRAP vehicles are received, they will be inspected, processed, inventoried, and stored in accordance with technical manual (TM) 38-470, *Storage and Maintenance of Army Pre-Positioned Stock Material*, and Army Regulation 740-3, *Care of Supplies in Storage COSIS*).

Since the MRAP vehicles will be stored in a dehumidified environment, the maintenance requirement for each of the approximately 3,585 MRAP vehicles would be once every 4 years with the annual rotation being approximately 900 MRAP vehicles.

Before servicing, each MRAP vehicle would be driven on the vehicle test track to bring the vehicle up to operating temperature. Maintenance of each MRAP vehicle would be conducted in accordance with established TM protocol and would include cleaning, inspecting, calibration, preserving, lubricating, adjusting, testing and replacing parts, changing/checking engine fluids and fuel, and repairs, and painting. Once each vehicle is serviced, it would be returned to storage until the next servicing interval.

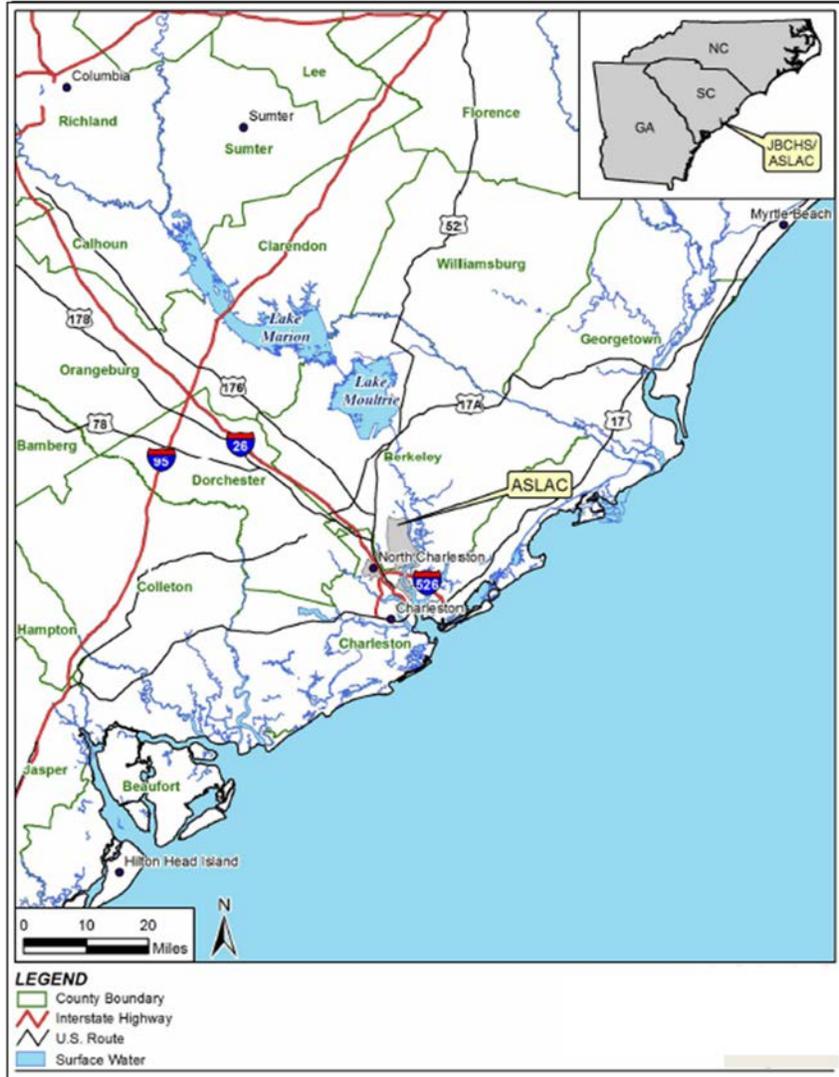


Figure 2-1 ASLAC Location Map

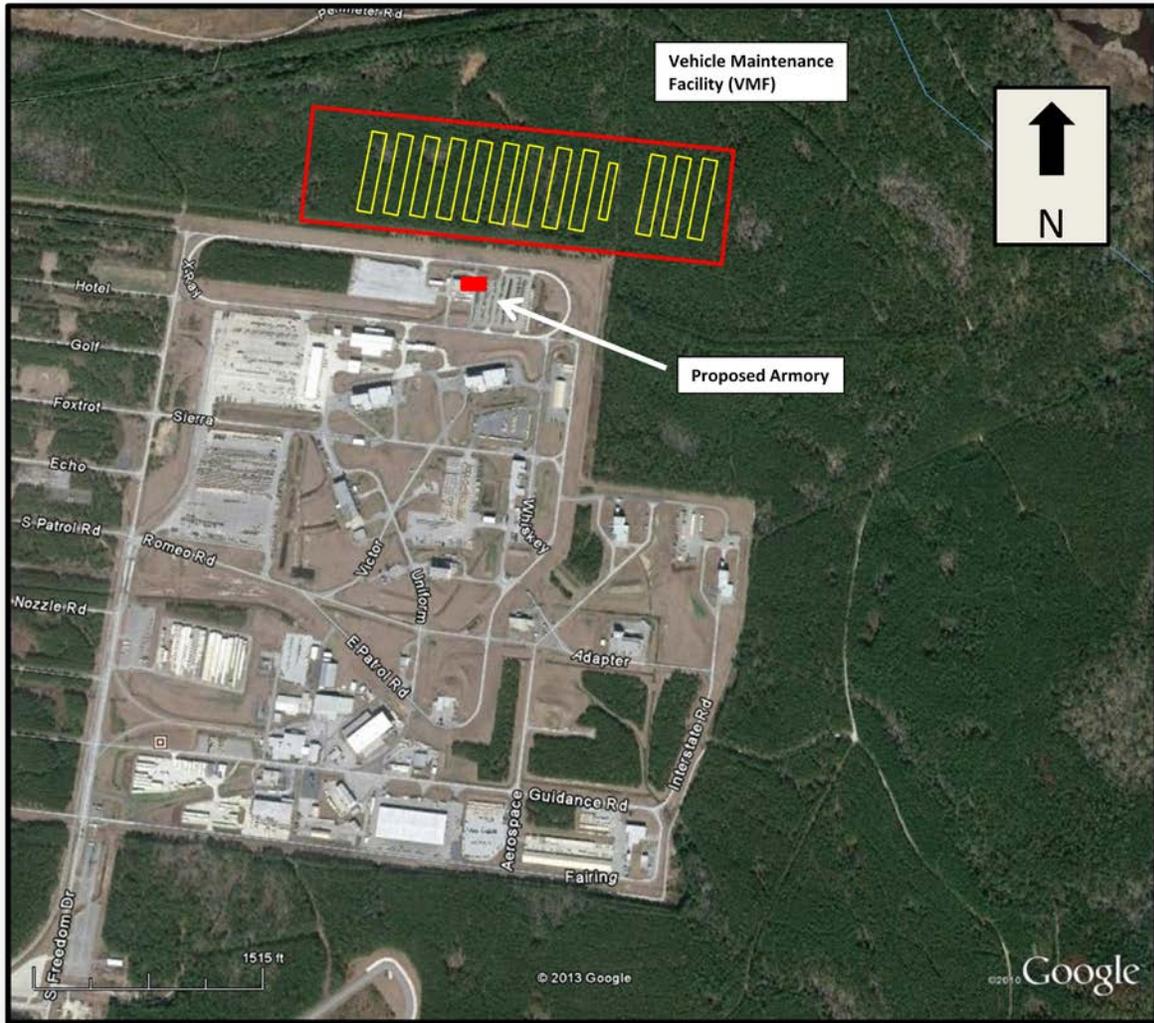


Figure 2-2 ASLAC Site Existing Facilities and Proposed Facilities Shown

In addition to the construction associated with the proposed action, road improvements along POMFLANT Road (Figure 2-4) within JBCHS have been made or are underway. A bridge on POMFLANT Road has been evaluated and determined to be structurally sufficient to handle the weight of the MRAP vehicles. Asphalt sections of the existing test track would need to be replaced with concrete.

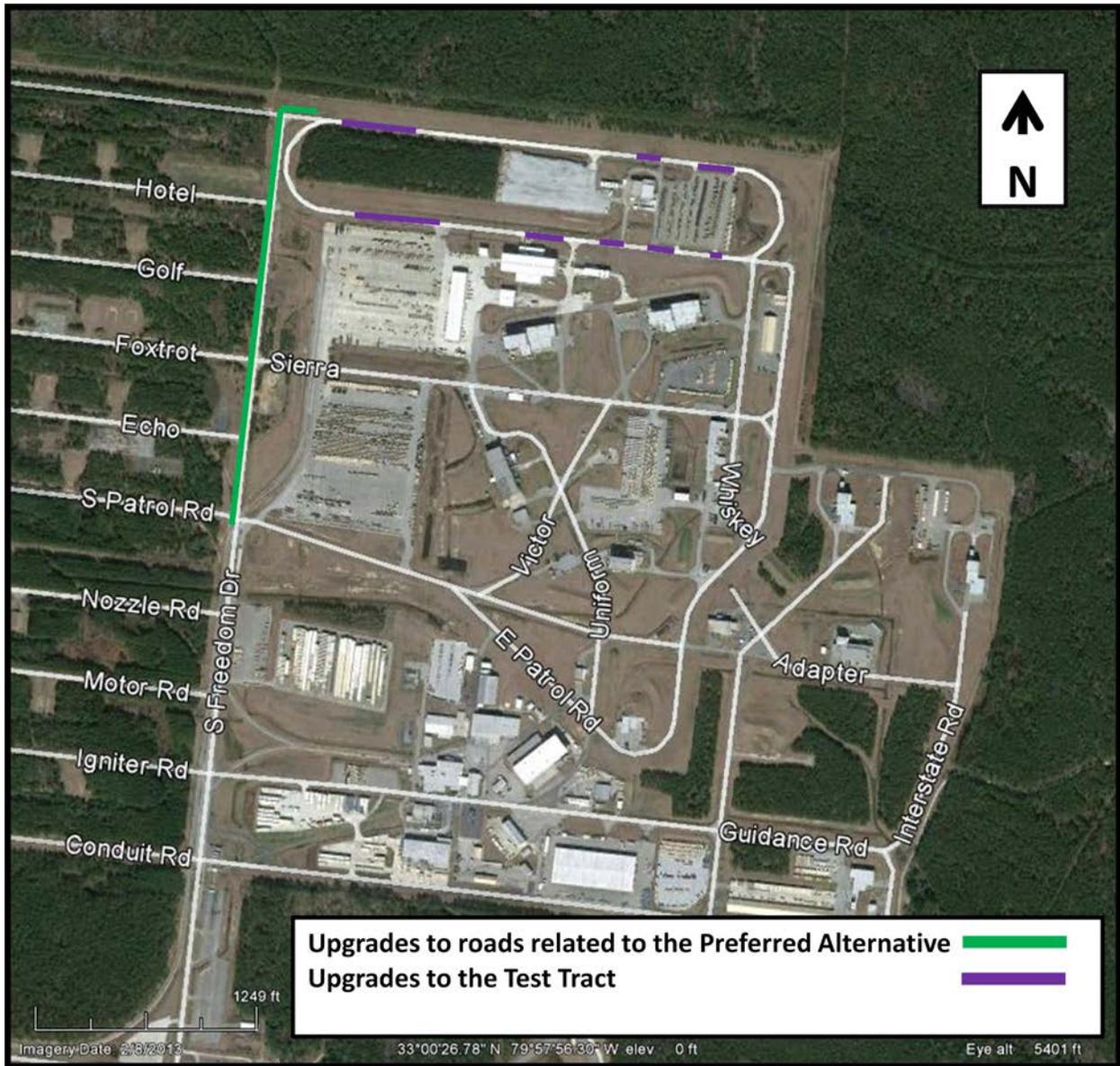


Figure 2-3 Road Improvements Resulting from the Preferred Alternative

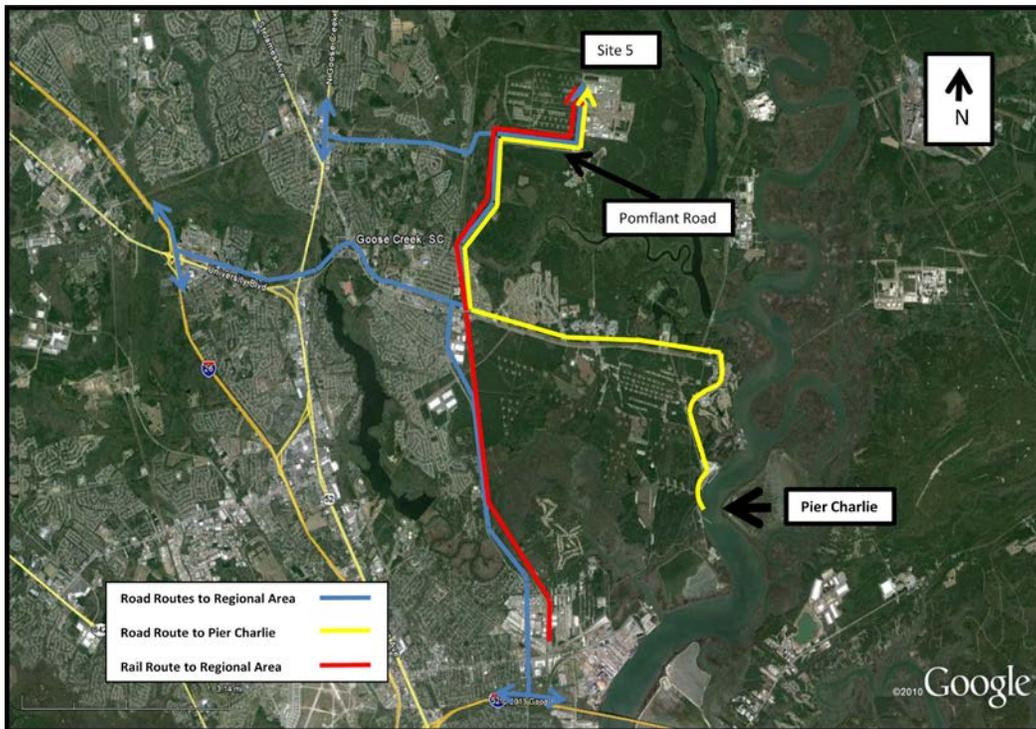


Figure 2-4 Transportation Routes for Delivery of MRAPs

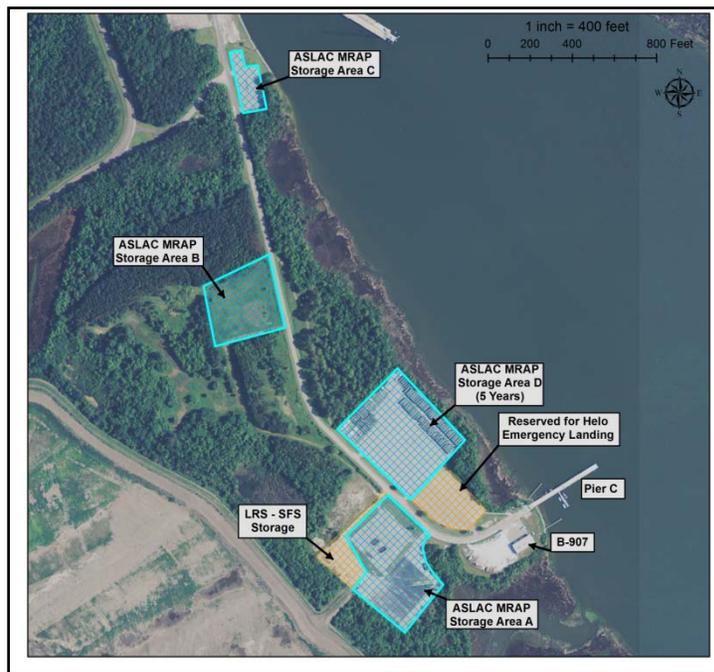


Figure 2-5 Pier C short term storage.

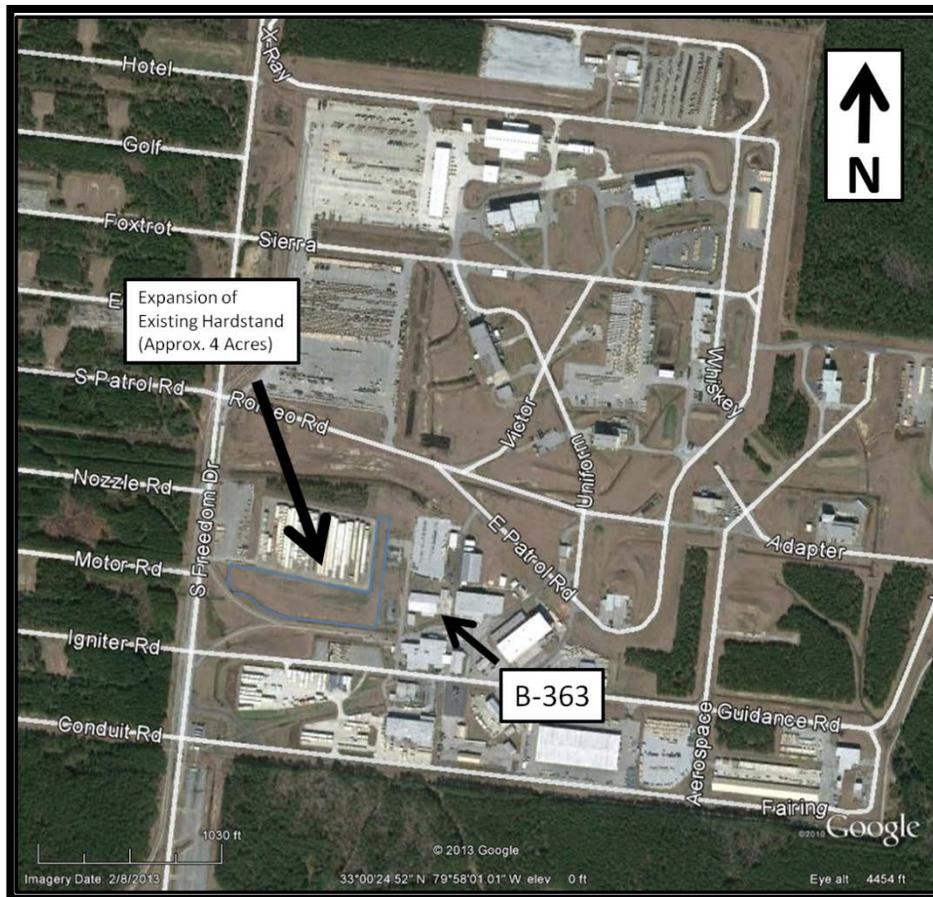


Figure 2-6 Short term storage at ALSAC

2.3 Alternatives

Potential site selection at ALSAC was coordinated with and approved by JBCHS. Initial screening eliminated several alternatives from analysis in this EA. The Preferred Alternative and the No-Action Alternative are carried forward for detailed analysis in this EA. Each selected alternative and those considered but eliminated from further consideration are described below. Figure 2-2 shows the locations of the Preferred Alternative.

Site Selection Criteria

As stated in the previous chapter, the ALSAC facility met the majority of these mission requirements. In order to screen alternatives, the following ALSAC specific selection criteria were developed based upon the mission requirements: 1) proximity to test tract, 2) proximity to offload site (Lot N5), and 3) minimization of impacts to existing ALSAC or JBCHS missions.

Based on these requirements, guidance from project stakeholders, and the results from a planning charette, it was determined that Site 5 (See Figure 2-2) would best fit the project's needs.

Preferred Alternative

The Preferred Alternative consists of constructing and operating maintenance and storage facilities at ASLAC for MRAP vehicles and maintenance and storage of vehicles on the site identified as Site 5. Site 5 is north of and adjacent to the ASLAC test track in the northern portion of ASLAC. The site, which is just outside the ASLAC fence line, is rectangular and covers about 95 acres. The area is an undeveloped, heavily wooded parcel that gently slopes to flat with some low areas that contains up to .06 acres of wetlands. A high-pressure natural gas line bisects the eastern section of the site, and the westernmost end of the site is in an explosive safety quality distance (ESQD) area which establishes a safeguard to personnel against possible fires or explosions.

The ESQD area was defined when the land southwest of Site 5 was used to store munitions in earthen bunkers. The ESQD areas were established to safeguard personnel against possible fires or explosions. No permanent inhabited structures are allowed within the ESQD. This EA evaluates the entire 95-acre parcel as shown in Figure 2-2. Immediately to the west and northwest is undeveloped, heavily wooded land. A large, linear-borrow pit, utility corridor and JBCHS perimeter road are to the northwest and north. The relic borrow pit area has become a surface water feature that appears to discharge into Back Creek. To the east is heavily wooded land with fire breaks and some unimproved roads. This alternative is located north of and adjacent to the existing facilities, including is a test track, armory, and Lot 5N. (Lot 5N is where vehicles are loaded or unloaded from truck or train.)

Site 5 is the Preferred Alternative because of its proximity to the vehicle test track, vehicle load/offload point, and armory. Site 5 would be isolated from existing mission requirements, minimizing congestion and reducing construction effects on the ongoing maintenance functions. The Preferred Site would be constructed in phases across the site (Figure 2-7). Phase I would include improvements to the approach road (Pomflant), the perimeter security fence, 3 of the 12 storage warehouses, and utility connections to the site. Phase II would include 2 of the 12 warehouses, the new armory, and upgrades to the existing test track. Phase III would include constructing 4 of the 12 warehouses and the concrete apron which surrounds all the built out facilities. Phase IV includes constructing the last 3 of the total 12 warehouses (facility sizes are shown in Table 2-1. Construction phases are anticipated to start in March of 2018 and be completed in March 2019.

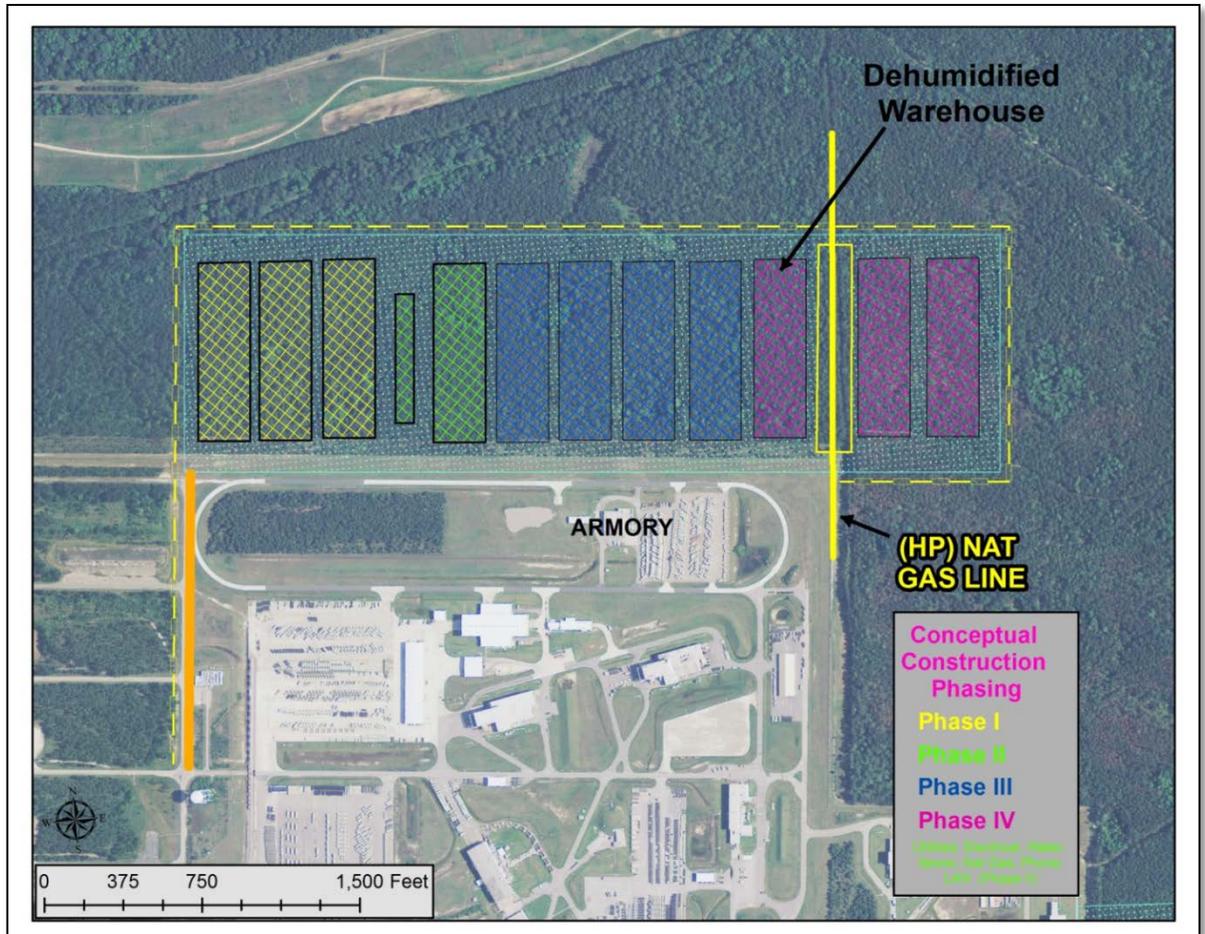


Figure 2-7 Phasing Locations at Preferred Alternative Site

No-Action Alternative

The No-Action Alternative is included as required by CEQ regulations to identify the baseline conditions against which the potential impacts of implementing the alternatives are evaluated. Under the No-Action Alternative, the mission requirements will not be met as the current facilities cannot support the proposed action. ASLAC would not receive the approximately 3,585 MRAP vehicles; the proposed construction and operation of maintenance and storage facilities and the maintenance and storage functions would not occur. The MRAP vehicles would be distributed to other locations in the United States, overseas or afloat, negatively impacting missions.

Alternatives Considered buy Eliminated from Further Consideration

In addition to the Preferred Alternative, JBCHS and ASLAC considered three other sites as potential alternatives, however; they were eliminated from further consideration for the reasons

described below. Because those sites do not meet the selection standards and, therefore, are not reasonable, they are not evaluated in this EA.

Site 1 is a former federal Law Enforcement Training Center area. JBCHS has other uses for the site and will not approve it for the MRAP vehicle maintenance and storage mission. Using this site would interfere with other planned JBCHS missions.

Site 2 is within an ESQD arc. Areas within ESQD arcs cannot be occupied by non-ordnance personnel or activities. JBCHS will not approve the site for the MRAP vehicle maintenance and storage mission. Using this site would interfere with existing JBCHS missions.

Site 3 is within a fragmentation arc from an ordnance disposal site. JBCHS does not want occupants within the arc and will not approve the site for the MRAP vehicle maintenance and storage mission. Using this site would interfere with existing JBCHS missions.

Site 4 is in the southeastern corner of ASLAC and is bisected by the ASLAC perimeter fence. Site 4 is an L-shaped site of about 67 acres. Approximately half of the site is within the installation fence line, and the other half is east of the fence. At initial glance, Site 4 may be considered a reasonable alternative; however, it was not carried forward in this analysis because of its general location and proximity to the required facilities (test tract, armory, loading points). MRAP vehicles arriving or being deployed would need to travel across the facility from or to the vehicle load/offload point using existing road routes with multiple intersections and turns. The same would apply for vehicles needing to use the test track or proposed armory adjacent to Lot 5N. Using those routes would cause increased congestion and safety issues and consequently adversely impact current ASLAC missions. Removing road segments, realigning extensive drainage features, removing the earthen berm, extensive road improvements, and other measures to make Site 4 as preferable as the Preferred Alternative could increase project cost.

3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 Land Use

In 2010 through Base Realignment and Closure (BRAC) actions Charleston Air Force and Naval Weapons Station (NWS) Charleston were combined to form JBCHS. Before realignment, ASLAC was a tenant of NWS and after the realignment, it became a JBCHS tenant. The former lies approximately 15 miles north of Charleston, South Carolina (see Figure 2-1). The NWS area consists of approximately 16,327 acres of land in four land tracts—Southside, Northside, Southside Annex, and the Marrington tracts. ASLAC is in the Northside tract, which is north of Foster Creek.

The Northside tract, which consisted of approximately 5,219 acres, was operated by the U.S. Army in the 1940s to support operations at the Charleston Army Depot. The Navy acquired the area in 1954 to construct facilities to support nuclear missile development and storage. In the 1960s, the support and storage facility area became known as the Polaris Missile Facility Atlantic Fleet (POMFLANT) where the area's primary function was for the maintenance and support of Trident missiles. POMFLANT was decommissioned in 1995, and the fleet ballistic missile operations were moved to Georgia. After POMFLANT's decommissioning, the U.S. Army renovated and occupied several of the buildings and has constructed new buildings to support USA Field Support Battalion-Afloat Maintenance Facility (which has since become ASLAC). Other land in the Northside has been used since 1996 as a field training area for federal law enforcement officers and is occupied by the Federal Law Enforcement Training Center (an agency within the Department of Homeland Security). It includes a small-arms firing range and a vehicle training track.

ASLAC continues to provide oversight, management, and support related to Army Prepositioned Stocks Afloat or the APS-3 mission. Part of this mission involves inspecting, testing, servicing, and repairing military equipment that arrives at ASLAC as part of APS-3. Future development within ASLAC include several MILCON projects such construction of a Multipurpose Maintenance and Tactical Paint Facility, a shipping receiving storage facility, controlled humidity warehouses, medical supply and maintenance warehouse, and a logistics support facility.

Affected Environment – Site 5 (Preferred Alternative)

Site 5 is north of and adjacent to the ASLAC test track in the northern portion of ASLAC. The site is just outside the ASLAC fence line but within the JBCHS boundary and is about 95 acres of undeveloped, heavily wooded land. Immediately to the west and northwest is also undeveloped, heavily wooded land. A large, linear-borrow pit, utility corridor and JBCHS

perimeter road are to the northwest and north. The borrow pit has become a surface water feature that discharges into Back Creek. To the east is heavily wooded land with fire breaks and some unimproved roads. South of the eastern extent of the site is also heavily wooded beyond the ASLAC perimeter fence. Directly south, within the ASLAC perimeter fence is the ASLAC test track, an armory, maintenance facilities, and Lot 5N where military vehicles are staged before or after being serviced for military readiness and other mission support facilities. A high-pressure natural gas line bisects the eastern section of the site, and the westernmost end of the site is in an ESQD area. The ESQD was defined when the land southwest of Site 5 was used to store munitions in earthen bunkers.

Environmental Consequences

No effects on land use would be expected from implementing the proposed action at Site 5. The conversion of approximately 95 acres of undeveloped land to industrial use is consistent with the management plan as stated in the Integrated Natural Resource Management Plan and is negligible when compared to the overall amount of land on JBCHS (9,091 acres). Currently the site is managed for timber production and wildlife management; however, there are no provisions that prevent its conversion to other uses to meet mission requirements (SOUTHNAVFACENGCOM 2003). No significant impacts would occur.

No Action Alternative

No effects on land use would be expected. The proposed action would not be implemented under the No Action Alternative. There would be no construction, and the proposed sites would remain as they are under baseline conditions.

3.2 Aesthetics and Visual Resources

Aesthetics and visual resources are the natural and man-made features on the installation landscape. They include cultural and historical landmarks, landforms of particular beauty or significance, water surfaces, and vegetation. Together, those features form the viewer's overall impression of the area or its landscape.

Affected Environment – Site 5 (Preferred Alternative)

Site 5 is an undeveloped, wooded parcel that is bordered by undeveloped wooded land to the north, east, and west. To the south is the developed area of ASLAC. Site 5 would be visible only from existing ASLAC operations to the south.

Environmental Consequences

Short-term and long-term adverse effects on aesthetics and visual resources would be expected. Short-term adverse effects would result from construction activities, which are inherently aesthetically displeasing. Construction of the MRAP vehicle maintenance facility would last a short time and be localized to the proposed site. In the long term, the view of the parcel would no longer be a natural, wooded setting, but the northern, eastern, and western parcel boundaries would remain wooded, providing a buffer between the parcel and the JBCHS boundary. The site would be visible only from existing ASLAC operations; no off-post vantage points would offer views of the site. No significant impacts would occur.

No Action Alternative

Under the No Action Alternative, no effects on aesthetics and visual resources would be expected because baseline conditions would remain the same.

3.3 Air Quality

Affected Environment – Site 5 (Preferred Alternative)

EPA Region 4 and the South Carolina Department of Health and Environmental Control (SCDHEC) regulate air quality in South Carolina. The Clean Air Act (CAA) (42 U.S.C. 7401-7671q), as amended, gives EPA the responsibility to establish the primary and secondary National Ambient Air Quality (NAAQS) (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: fine particulate matter (PM₁₀), very fine particulate matter (PM_{2.5}), sulfur dioxide (SO₂), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O₃), and lead. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects; long-term standards (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; South Carolina accepts the federal standards (SCDHEC 2011).

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. Berkeley County, South Carolina, is entirely within the Charleston Intrastate AQCR (AQCR 199). EPA has designated Berkeley, Dorchester, and Charleston Counties as in attainment for all criteria pollutants (USEPA 2012a) (Indeed, the majority of South Carolina, with the exception of Cherokee County in the upstate, is considered in attainment.). Because the project is in an attainment area, the air conformity regulations do not apply. The projects emissions of criteria pollutants and the applicability thresholds under the general conformity

rules were carried forward for more detailed analysis to determine the level of impact under NEPA.

Existing ambient air quality conditions can be estimated from measurements conducted at air quality monitoring stations near Site 5. Table 3.1 shows the maximum monitored concentrations of criteria pollutants near Berkeley County, South Carolina and the total air emissions for the immediate three county area (Berkeley, Charleston, and Dorchester). The measurements provide a worst-case view of the air quality in the county (USEPA 2012b). The only standard exceedence is for PM₁₀. This sample was taken from the Jenkins Avenue Fire Station Monitoring location, located in North Charleston, approximately 8.5 miles south of the proposed project site (SCDHEC 2013). Considering that this sampling location is located in the mix of an urban-industrial complex, it is doubtful that any JBCHS activity is responsible for this PM₁₀ value.

JBCHS maintains a Synthetic Minor Permit to Operate Number SC0043205, which expires May 2014 (USEPA 2012c). The previous NWS, (now JBCHS and includes ASLAC), operates under a single Conditional Major Air Permit (No. CM-0420-0014), that expires in December 2013. These permits requirements include annual periodic inventory for all significant stationary sources of air emissions and covers monitoring, recordkeeping, and reporting requirements. The major air emissions sources covered under these permits include boilers, water heaters, diesel generators, and paint booths. The control devices listed include fabric filters, wall filtration, and demisters (GTA 2009).

The U.S. Environmental Protection Agency (EPA) provides rigorous safeguards to prevent deterioration of the air quality in Class I areas as specified in 40 CFR 81.421(e). The Prevention of Significant Deterioration (PSD) program designates EPA Mandatory Class I areas as all international parks, all national wilderness areas, and national memorial parks that exceed 5,000 acres, and all national parks that exceed 6,000 acres in existence on August 7, 1977. The Cape Roman Wildlife Refuge is the only nearby Class I area and is approximately 20 miles from Preferred Alternative.

Cape Romain National Wildlife Refuge (NWR)

The Cape Romain NWR is a Class I area about 20 miles northeast of Charleston. The majority of the Refuge area is offshore extending from Bull Island 20 miles northeast to Cape Romain. The Refuge is bordered on the west by the Intracoastal Waterway. Inland are large tracts of forests with scattered residences. Several miles inland, a primary coastal route, US Highway 17, parallels the coast, with some development along the section of highway that is closest to the Refuge.

Table 3.1 Local Ambient Air Quality Monitoring Stations near Berkeley County			
Pollutant	EPA Air Quality Standards	Monitored Data near Berkeley County	Charleston, Berkeley, Dorchester Annual Emissions ^h (tons/yr)
CO			215,804.15
1-Hour Maximum ^c (ppm)	35	1	
8-Hour Maximum ^c (ppm)	9	0	
NO ₂			45482.99
1-Hour (ppb)	100	40	
O ₃			
8-Hour Maximum ^d (ppm)	0.075	0.066	
SO ₂			59162.20
1-Hour Maximum ^e (ppb)	75	21	
8-Hour Maximum ^e (ppb)	140	10	
PM _{2.5}			12,607.16
24-Hour Maximum ^e (ug/m ³)	35	23	
Annual Arithmetic Mean ^f (ug/m ³)	15.0	12.2	
Annual Arithmetic Mean ^f (ug/m ³)	15.0	12.2	
PM ₁₀			27,773.76
24-Hour Maximum ^e (ug/m ³)	150	245	
Notes: ppm=parts per million ug/m ³ = micrograms per cubic meter NO _x = Nitrogen oxide a. Source 40 CFR 51.0.12 b. Source USEPA 2012b		c. Not to be exceeded more than once per year. d. The 3-year average of the fourth highest daily maximum 8-hour average O ₃ concentrations over each year must not exceed 0.075 ppm. e. The 3-year average of the 98 th percentile of 24-hour concentrations at each population-oriented monitor must not exceed 35 ug/m ³ . f. The 3-year average of the weighted annual mean PM _{2.5} concentrations must not exceed 15.0 ug/m ³ . h. USEPA 2008 National Environmental Inventory	

The Cape Romain monitoring site is located in Charleston County at the Cape Romain National Wildlife Refuge (NWR) near Moore’s Landing. The Cape Romain site has samplers for PM 2.5 speciation and continuous monitors for carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, black carbon, meteorological parameters and PM 2.5. The sample inlets are 18 meters from the nearest road. The Cape Roman site is collocated with the Interagency Monitoring of Protected Visual Environments (IMPROVE) sampling site and nearby monitoring performed by other agencies includes precipitation chemistry and mercury deposition. 2012 ambient air quality data for Cape Romain is shown in Table 3.2.

Ozone (ppm)	0.065
SO ₂ Annual (ppb)	0.59
SO ₂ 24 Hour (ppb)	4.1
SO ₂ 1 Hour (ppb)	12
NO ₂ Annual (ppb)	2
NO ₂ 1 Hour (ppb)	11
CO ₂ 8 Hour (ppb)	0.3

Climate and Greenhouse Gases.

Berkeley County has an average high and low temperature in January of 58.9 degrees Fahrenheit (°F), (14.9 degrees Celsius [°C]) and 36.9 °F (2.7°C) respectively, and an average high and low temperature in July of 91°F (32.7°C) and 72°F (22°C), respectively. Berkeley County also has an average annual precipitation of 51.5 inches per year.

The wettest month is July with an average rainfall of 6.9 inches (Idcide, 2011a). Greenhouse gases (GHGs) are components of the atmosphere that trap heat relatively near the surface of the earth and, therefore, contribute to the greenhouse effect and climate change. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as burning fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide (CO₂), methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere. Whether rainfall will increase or decrease is difficult to project for specific regions (USEPA 2011; IPCC 2007).

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* outlines policies intended to ensure that federal agencies evaluate climate-change risks and vulnerabilities, and to manage the short- and long-term effects of climate change on their operations and mission.

The EO specifically requires the Army to measure, report, and reduce their GHG emissions from both their direct and indirect activities. The DoD has committed to reduce GHG emissions from non-combat activities 34 percent by 2020 (DoD 2010). In addition, the CEQ recently released draft guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA analyses. The draft guidance includes a presumptive effects threshold of 27,563 tons per year (25,000 metric tons per year) of CO₂ equivalent emissions from a federal action (CEQ 2010).

Environmental Consequences

Anticipated short- and long-term adverse environmental impacts are not expected to be significant. Implementing the Preferred Alternative could affect air quality through airborne dust and other pollutants generated during construction, vehicle operation on unpaved roadways, and by introducing new stationary sources of pollutants, such as heating boilers. Air quality impacts would be considered significant unless the emissions would be greater than the General Conformity Rule applicability threshold; exceed the GHG threshold in the draft CEQ guidance; or contribute to a violation of any federal, state, or local air regulation. No significant impacts would occur.

Construction

Construction emissions were estimated for fugitive dust, on- and off road diesel equipment and vehicles, worker trips, architectural coatings, and paving off-gasses. The estimated emissions from the Preferred Alternative would be below the General Conformity Rule applicability thresholds (Table 3.3). No significant impacts would occur.

For a comparison, JSCHS' 2012 emissions inventory and their permit limits are also shown. At present, JBCHS operates with emissions less than 75% of their permit limits for criteria pollutants, and less than 16% of their permit limits for Hazardous Air Pollutants. During the construction of MRAP facilities, there is the possibility of exceeding the NO_x emissions, however this is temporary, construction activities will not be going 24 hours per day and seven days a week, and will be alleviated once construction is stopped. That chart also shows that the total emissions from maintenance, MRAP run-up's and idling, and fuel storage would be very small and would not have a substantial influence on the emission estimates and should not significantly impact JBCHS' permit status.

The SCDHEC outlines precautions that would be required when constructing the new facilities, such as controlling fugitive dust and open burning. All persons responsible for any operation that could result in fugitive dust would take reasonable precautions to prevent such dust from becoming airborne. Reasonable precautions might include using water to control dust from

Table 3.3 ASLAC Annual Air Emissions Compared to Applicability Thresholds								
Activity	Emissions (Tons/year)						<i>De minimis</i> Threshold	Would Emissions Equal/Exceed <i>De Minimis</i> Levels
	CO	NO _x	VOC	So _x	PM ₁₀	PM _{2.5}		
Construction		61.5	11.9	0.1	29.0	5.2	100	No
Operations	2.8	13.3	1.4	0.1	1.1	1.1		
JBCHS Emissions Jan 2102-Dec. 2012	23.35	.98	21.09					
JBCHS Permit Limits	100	100	100	100	100	100		

building construction, road grading, or land clearing. In addition, best management practices (BMPs) would be required and implemented for activities associated with the Preferred Alternative. The construction would be:

- Volatile organic compounds (SCAPCR 61-62.5-5)
- Control of fugitive particulate matter (SCAPCR 61-62.6)
- Prohibition of open burning (SCAPCR 61-62.2)
- Emissions from fuel burning operations (SCAPCR 61-62.5-1)

Emissions from MRAP Transport.

MRAPS will be transported by rail and truck to the new storage facility. In particular, 3,585 MRAPS will be transported by train from the Red River Army Depot in Texarkana, AR to ASLAC. Two or three MRAPS are usually transported by rail car; with 80 rail cars usually comprise a train (John Scheller, CSX, personal communication). At 240 MRAPs per shipment, it will take 15 train shipments to transport the entire MRAP fleet from Red River to JBCHS. Tables 3.4 and 3.5 shows the emissions calculations for individual trip and total emissions output for entire fleet movement by rail from Red River Army Depot and for transporting MRAPs by truck from railroad to staging areas.

	Emission Factors (g/gal)*	Gallons of Fuel/Trip	Emissions/Trip (g/tons)	Total Emissions (15 Trips)
HC	10	1,654.41	16,544.1 g (0.018 tons)	248,161.5 g (0.27 tons)
CO	26.6	1,654.41	44,007.31 g (0.049 tons)	660,109.6 g (0.73 tons)
NO _x	270	1,654.41	446,690.7 g (0.49 tons)	6,700,361 g (7.39 tons)
PM	6.7	1,654.41	11,084.55 g (0.012 tons)	166,268.2 g (0.12 tons)

*Source: EPA 1997

Pollutant	Emission Factor (lbs/hp-hr)	Emission Rate (lbs/hr) [c x hp Rating]	Emissions (tons/yr) [d x hr/2000]
Particulate Material - PM ₁₀	0.0007	0.420	3.7653
Sulfur Dioxide - SO ₂	0.0004045	0.243	2.1758
Nitrogen Oxides - NO _x	0.024	14.400	129.0960
Volatile Organic Compounds - VOC	0.000705	0.423	3.7922
Carbon Monoxide - CO	0.0055	3.300	29.5845

*Source: Utah Department of Environmental Quality

During the transport of the MRAPS, the emissions of NO_x will be greatly increase, however, this increase is sporadic and temporary and will be alleviated when the transport of MRAPs cease. No significant impacts would occur.

Operations

Operational emissions associated with the Preferred Alternative would have two components: vehicle maintenance and delivery, and facility operations. Vehicle maintenance and delivery is temporary, and emissions would cease when delivery is completed. The periodic vehicle maintenance schedule involves maintenance of 900 of the 3,585 MRAP vehicles per year.

All vehicles have a 4-year maintenance schedule. Notably, MRAP vehicle variants meet EPA's definition of a combat vehicle; therefore, they are exempt from both on-highway and non-road diesel engine emission standards (40 CFR 85.1703 and 89.908). Although exempt, each of the engines is certified to a non-current EPA or European Union emission standard. MRAP vehicle variants and technical specifications are presented in Appendix C.

The facility's operational emissions would be primarily from dehumidification systems and furnaces or boilers for heating (Table 3.6). It was assumed that heating the storage facilities would be to 45 °F to avoid freezing in the winter, and a 100-kW backup generator would be used at the facility either initially, or in the future. Small changes in the facilities' siting, the ultimate design, and moderate changes in the quantity and types of equipment used would not have a

substantial influence on the emission estimates and would not change the determination under the general conformity rule or level of effects under NEPA.

The table below compares the emissions from JBCHS and the proposed project with the emissions from the three area counties (Charleston, Dorchester, and Berkley) adjacent to the proposed project area.

The total annual CO emissions JBCHS and the ASLAC project represent about 0.04 percent of the 2011 CO emissions for three county area. PM₁₀ emissions for from JBCHS and the ASLAC project account for about 0.04 percent of the three County region. NO_x emissions represent less than 0.6 percent of the three county nitrogen oxide ozone precursors. SO_x emissions from JBCHS and the ASLAC project account for 0.07 percent of emissions for the three county area. Particulate matter resulting from the ASLAC project account for 0.2 percent (PM_{2.5}) and 0.03 percent (PM₁₀) respectively of total PM emissions for the three counties.

The majority of emissions resulting from the proposed project come during the transport and construction phase. This increase in emissions is temporary, intermittent and will be alleviated once construction is finished. No significant impacts would occur.

Table 3.6 Summary of Emissions at JBCHS, Proposed Action Emissions, and Local County Emissions					
Source	CO	NO	SO2	PM 2.5	PM 10
Existing JBCHS Emissions (tons/yr)	23.35	74.98	38.93	53.43	50.29
ASLAC Construction (tons/yr)	35.8	61.5	0.1	29	5.2
Rail Transport (tons/yr)t	0.73	7.39	0	0	0.12
Truck Transport	29.58	129.1	2.178	0	3.76
O & M (tons/yr)	2.8	13.3	0.1	1.1	1.1
Total ASLAC Project Contribution (tons/yr)	68.91	211.29	2.378	30.1	10.18
Total Emissions for Berkeley, Charleston, and Dorchester County (tons/yr)	251,804.15	45,482.99	59,162.20	12,607.16	27,733.76
JBCHS Percent Contribution	0.00927308	0.164853	0.065802	NA	NA
ALSAC & JBCHS Percent Contribution	0.03663959	0.6294	0.069822	0.23875322	0.036706

Regulatory Review

The CAA, as amended in 1990, mandates that state agencies adopt State Implementation Plans (SIPs) that target the elimination or reduction of the severity and number of violations of the NAAQS. SIPs set forth policies to expeditiously achieve and maintain NAAQS attainment. Since 1990, South Carolina has developed a core of EPA-approved air quality regulations. The approvals signified the development of the general requirements of the SIP. The South Carolina program for regulation of air emissions affects industrial sources, commercial facilities, and residential development activities. Regulation occurs primarily through a process of reviewing engineering documents and other technical information, applying emission standards and regulations in the issuance of permits, performing field inspections, and helping industries determine their compliance status with applicable requirements.

As part of the requirements, the SCDHEC Bureau of Air Quality Control (SCDHEC-BAQC) oversees programs for permitting the construction and operation of new or modified stationary source air emissions in South Carolina. SCDHEC BAQC air permitting is required for many industries and facilities that emit regulated pollutants. These requirements include Title V permitting of major sources, New Source Review, PSD, New Source Performance Standards for selected categories of industrial sources, and the National Emission Standards for Hazardous Air Pollutants. Air permitting regulations do not apply to mobile sources, such as trucks or MRAP vehicles. The applicability of these regulations to the project is outlined in Table 3.7.

Prevention of Significant Deterioration (PSD)	Potential emissions would not exceed 250-tons per year (tpy) PSD threshold. Therefore, the project would not be subject to PSD review.
Title V Permitting Requirements	The facilities potential to emit would be below the Title V major source threshold and would not require a Title V permit or significant permit modification
Nation Emission Standards for Hazardous Air Pollutants (NESHAP)	Potential HAP emissions would not exceed NESAHP thresholds. Therefore, the use of Maximum Available Control Technology (MACT) would not be required.
Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule	Potential emissions do not exceed the 25,000 tpy threshold and would not require a Title V permit or significant permit modification.

Greenhouse Gases and Climate Change.

Gases that trap heat in the atmosphere are called greenhouse gases (GHG). The four main GHG identified by US EPA (website <http://epa.gov/climatechange/ghgemissions/gases/co2.html>) are:

Carbon dioxide (CO₂) enters the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste, trees and wood products, and also as a result of

certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous oxide (N₂O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated gases: Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone depleting substances (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases").

Carbon dioxide (CO₂) is the primary greenhouse gas emitted through human activities (USEPA website at <http://epa.gov/climatechange/ghgemissions/gases/co2.html>). In 2010, CO₂ accounted for about 84% of all U.S. greenhouse gas emissions from human activities. Carbon dioxide is naturally present in the atmosphere as part of the Earth's carbon cycle (the natural circulation of carbon among the atmosphere, oceans, soil, plants, and animals). Human activities are altering the carbon cycle--both by adding more CO₂ to the atmosphere and by influencing the ability of natural sinks, like forests, to remove CO₂ from the atmosphere. While CO₂ emissions come from a variety of natural sources, human-related emissions are responsible for the increase that has occurred in the atmosphere since the industrial revolution.

The main human activity that emits CO₂ is the combustion of fossil fuels (coal, natural gas, and oil) for energy and transportation, although certain industrial processes and land-use changes also emit CO₂.

When compared to the annual GHG emissions for the United States (6,821.8 x 10⁶ tons per year) the GHG emissions associated with the Proposed Action listed in Table 3.25 accounts for less than 9 one thousandth of a percent of the total CO₂ emissions generated by the United States in 2010. Emissions of GHGs from the Proposed Action alone would not cause warming that would lead to climate changes. However, these emissions would increase 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.

Cape Romain Nation Wildlife Refuge

The National Park Service (NPS) and the U.S. Fish and Wildlife Service (FWS) have developed criteria for evaluating the contribution of additional nitrogen (N) or Sulfur (S) to deposition within Class I areas. In particular, Depositional Analysis Thresholds (DATs) have been developed for Class I areas in response to requests by permitting authorities and permit applicants to continue to develop consistent, predictable permit review processes, and to expedite the permit review process. The NPS and FWS have determined that a total increase in deposition greater than fifty percent of natural background deposition would trigger management concerns. For eastern Class I areas, the background levels are 0.50 kg/ha/yr for nitrogen and 0.50 kg/ha/yr for sulfur. The DATs, which are approximately 2% of the background levels, identify the additional amount of deposition below which does not trigger a management concern. The DATs are basically a screening level, and do not necessarily indicate the amount that constitutes an adverse impact to the environment. For eastern Class I areas, the DAT is .01 kg/ha/yr for nitrogen and 0.01 kg/ha/yr for sulfur.

Cape Romain is a 66,287 acre (26,825 hectares) reserve. The Table 3.8 below shows the worst case supposition of all the ASLAC-MRAP project emissions depositing within the reserve.

Table 3.8 Maximum Deposition on ASLAC MRAP Project Emissions onto Cape Romain		
	Emissions (tons/yr)	Maximum Deposition (kg/ha/yr)
NO _x Construction	197.99	6.69
NO _x O & M	13.3	0.45
SO _x Construction	2.078	0.07
SO _x O &M	.1	0.003

The table above shows the deposition onto Cape Romain National Wildlife Refuge if all the emissions from Proposed Project would be deposited onto the refuge. This however is extremely unlikely owing to the distance between the ASLAC site and the Refuge. In addition, Table 3.9 below shows the 2011 emissions from the major permittees within the three counties. When compared to these emissions, the impact from the ASLAC project is not significant. No significant impacts would occur.

**Table 3.9 Charleston, Berkeley, and Dorchester County Major Facility Emissions for 2011
(Emissions Expressed in tons/yr) ***

Facility Name and Permit Number	CO	CO2	NO2	PM10	PM2.5	SO2	VOC
SCE&G WILLIAMS 0420-0006	264.102	2,677,525	1543.423	557.7192	332.6337	606.9377	31.69685
SANTEE COOPER CROSS GENERATING STATION 0420-0030	10480.16	15,435,446	5426.12	1165.664	1019.648	9163.79	91.0035
KAPSTONE CHARLESTON KRAFT LLC 0560-0008	5075.408	2110.6	951.687	357.9359	316.1577	1080.466	634.3941
MEADWESTVACO SC LLC SPECIALTY CHEMICALS 0560-0164	22.09459	17314.32	20.4174	11.32651	0.9627072	3.178712	102.7174
COGEN SOUTH 0560-0244	410.2844	1071144	2019.958	140.0183	122.0326	801.2042	41.80867
SCE&G CANADYS 0740-0002	973.7091	1528405	2656.474	2282.38	1807.434	15631.6	20.44774
GIANT CEMENT CO 0900-0002	1111.366	541477.6	472.7924	244.0565	152.2132	330.1557	39.57479
* Air emission data was provided by Chad Wilbanks, Emissions Inventory, Bureau of Air Quality, South Carolina Department of Health and Environmental Control							

No Action Alternative

By implementing the No Action Alternative, no effect on ambient air-quality would be expected. No construction would be undertaken, and no MRAP vehicle storage or maintenance would take place. Ambient air-quality conditions would remain as described in Section 3.17. No significant impacts would occur.

3.4 Noise

Affected Environment – Site 5 (Preferred Alternative)

Sound is a physical phenomenon consisting of 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 is often generated by activities essential to a community’s quality of life, such as construction or vehicular traffic. Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz (Hz) are used to quantify sound frequency. The human ear responds differently to different frequencies. A-weighting, measured in A-weighted decibels (dab), approximates a frequency response expressing the perception of sound by humans. Sounds encountered in daily life and their dab levels are provided in Table 3.10. The dBA noise metric describes steady noise levels, although very few

noises are, in fact, constant. Therefore, A-Weighted Day-Night Sound Level 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 used to describe the overall noise environment. (Leq is the average sound level in dB.)

The Noise Control Act of 1972 (PL 92-574) directs federal agencies to comply with applicable federal, state, and local noise control regulations. In 1974 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, churches, and hospitals.

Table 3.10 Common Sounds and Their Levels		
Outdoor	Sound Level (dBA)	Indoor
Motorcycle	100	Subway Train
Tractor	90	Garbage Disposal
Noisy Restaurant	85	Blender
Downtown (large city)	80	Ringling Telephone
Freeway Traffic	70	TV Audio
Normal Conversation	60	Sewing Machine
Rainfall	50	Refrigerator
Quiet Residential Area	40	Library
Source: Harris 1998		

Maximum noise limits are outlined in section 38-1 of the Berkeley County Code (Table 3.11). Construction and demolition activities are exempt from the limits outlined for daytime hours. For construction and demolition activities, a person may not cause or permit noise levels that exceed 69 dBA at nighttime (10 p.m. to 6 a.m.) (Berkeley County Code, section 38-1. Noise). South Carolina does not have a statewide noise ordinance.

Table 3.11 Berkeley County Maximum Noise Limits		
Location of Noise Source	Hours of the Day	Maximum Level (dBA)
Residential	6:00 a.m. to 10:00 p.m.	70 dBA
	10:00 p.m. to 6:00 a.m.	65 dBA
Nonresidential	6:00 a.m. to 10:00 p.m.	75 dBA
	10:00 p.m. to 6:00 a.m.	69 dBA
Berkeley County Code. 38-1		

Aircraft over flights; railroad activities; loading, unloading and maintenance activities; and military vehicle operations dominate the noise environment at and around Site 5. Other sources

of noise include HVAC system operation, lawn maintenance, street maintenance, and construction activities. The closest noise-sensitive receptor is Medway Plantation, a National Historic Preservation Act listed site approximately one mile north of Site 5. At that location, DNL is expected to be less than 47 dBA, and Leq would be approximately 43 dBA in the day and 37 dBA at night (ANSI 2003). In addition, there is common wildlife throughout the immediate area.

Environmental Consequences

Short- and long-term adverse effects would be expected. Short-term increases in noise would result from constructing the MRAP vehicle facilities. Long-term increase would result from run-up and maintenance activities.

Table 3.12 presents typical noise levels (dBA at 50 feet) that EPA estimates for the main phases of outdoor construction. Individual pieces of construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels can be relatively high in the daytime at locations within several hundred feet of active construction sites.

While DoD is exempt from Berkeley County noise regulation, it is not anticipated that MRAP activity would exceed the noise regulation limits off-base. The zone of relatively high construction noise typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations farther than 800 feet from construction sites seldom experience noteworthy levels of construction noise. There are no noise sensitive receptors within 800 feet of Site 5.

Construction Phase	L _{eq} (dBA)
Ground Clearing	84
Excavation, Grading	89
Foundations	78
Structural	85
Finishing	89
Source (USEPA 1971)	

Long-term increases in the overall noise environment would be expected from implementing the Preferred Alternative. The MRAP vehicle noise levels are comparable to the noise levels of the other military vehicle systems and meet the requirements of 49 CFR Part 325, Compliance with Interstate Motor Carrier Noise Emission Standards (PTI 2010). Approximately three times per day, an MRAP vehicle would be driven on the vehicle test track to bring the vehicle up to operating temperature.

Such run-up activities would not be audible at the closest noise-sensitive area and would be consistent with the existing and historical use of the facility. Noise from additional maintenance activities would be minimal and confined primarily to areas inside the buildings. Limited truck and worker vehicle traffic might be audible at some nearby locations. No significant impacts will occur.

No Action Alternative

No effects would be expected. No construction would be undertaken, no new facilities would be built, and no vehicles would be stored or maintained. Noise conditions would remain as they currently are.

3.5 3.5 Geology and Soils

Affected Environment – Site 5 (Preferred Alternative)

ASLAC is in the southern portion of the Atlantic Coastal Plain physiographic province. Marine terraces were formed in the region during periods of higher sea levels during the Pleistocene Period and were later covered in some areas by Holocene Period deposits. The surficial geology of the region consists of thin sediment layers of shallow marine origin, primarily consisting of fine sand and clay (SOUTHNAVFACENGCOM 2003). Site 5 is in a mostly level area west of the Back River. The Charleston area is within Seismic Risk Zone 2 according to the 1991 Uniform Building Code Seismic Zone Map. The area had 10 minor earthquakes between 1857 and 1867 and a major earthquake (with an estimated Richter magnitude of 7.7) in 1886 (SOUTHNAVFACENGCOM 2003).

Soils on Site 5 are a mixture of Craven loam and Wahee loam (USDA NRCS 2012). The soils are moderately well drained with no tendencies for ponding or flooding. The Craven loam soils have a moderately high capacity to drain, and the Wahee loam soils are somewhat poorly drained.

Both the Craven and Wahee loam soils have a low susceptibility to sheet and rill erosion by water. They are also both of limited suitability for developing small, commercial buildings (i.e., buildings of no more than three floors and without a basement) because of a shallow depth to a zone of saturation.

Environmental Consequences

No effects on geology, seismicity, topography, soils would be expected from implementing the proposed action on Site 5. Constructing the MRAP vehicle facilities would cause surficial disturbance to soils, but would not alter the characteristics of the underlying soil or geology, would not change the topography of the area, and would not affect the frequency of occurrence or severity of seismic events in the region. No significant impacts will occur.

No Action Alternative

No effects on geology, topography, seismicity, or soils would be expected from implementing the No Action Alternative. No construction or facility operations would occur under the No Action Alternative; the parcel would remain as is.

3.6 3.6 Water Resources

Affected Environment – Site 5 (Preferred Alternative)

ASLAC is in the Cooper River watershed in an area dominated by tidal rivers, creeks, and marshlands. The proposed MRAP vehicle sites drain to Foster Creek (a tributary of the Back River) to the south and the Back River to the east. The Back River drains to the Cooper River, which in turn drains to the Atlantic Ocean. The mean tidal range of the Cooper River is 5.2 feet, with normal tides varying from 1.1 to 6.3 feet. Uplands suitable for development are limited to the broad, flat peninsulas between the tidal areas (SOUTHNAVFACENGCOM 2003).

Groundwater

The region is underlain by six major aquifer systems, some of which are important for public water supply. Potable water for the installation is provided by the North Charleston Public Services Authority; the installation does not operate public supply wells (SOUTHNAVFACENGCOM 2003).

Wetlands and Floodplains

The approximated extent of wetlands found within the Preferred Alternative project area is 0.76 acres (Figure 3-1). The wetlands on Site 5 are primarily gum ponds, with one wetland run that that traverses the site.

Wetland impacts cannot be avoided. Any impacts to jurisdictional wetlands or other waters of mitigation, prior to project initiation. Any impacts to non-jurisdictional wetlands will require

mitigation to be proffered prior to the receiving Coastal Zone Consistency Certification and State stormwater permits. Both state and federal permits will be necessary prior to project initiation. (The State issued a preliminary Coastal Zone Consistency Certification for this project on June 20, 2014; a final Certification will be issued prior to any other state or federal permits issued.)

The mitigation process includes the following measures as proscribed in the “Memorandum of Agreement Between the Department of the Army and the Environmental Protection Agency, The Determination of Mitigation under the CWA Section 404(b)(1) Guidelines”

Avoidance: avoid potential impacts to the maximum extent practicable,

Minimization: take appropriate and practicable steps to minimize the adverse unavoidable impacts, and

Compensatory mitigation: provide appropriate and practicable compensatory mitigation action to address unavoidable wetland impacts in accordance with the Charleston District’s Regulatory guidelines.

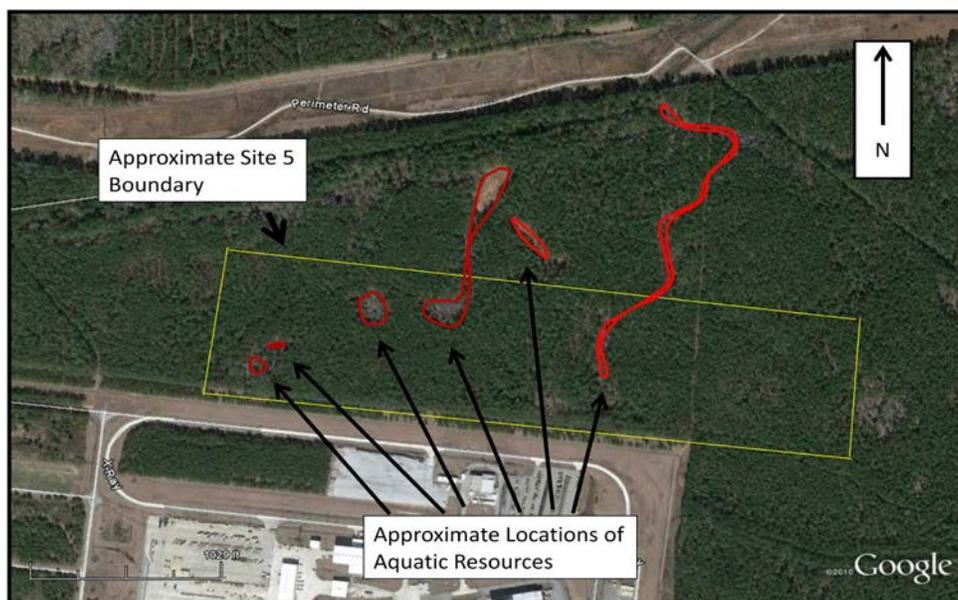


Figure 3-1. Wetlands on the Preferred Alternative

Site 5 is located outside of the 100 year floodplain (Figure 3-2), however, the temporary storage areas near Pier C are within the 100 year floodplain of the Cooper River (Figure 2.3.4). The facilities near Pier C were constructed as part of the infrastructure improvements for expanding the Navy’s Nuclear Power Training Unit-Charleston (NPTU), and their impacts were addressed in the related Environmental Assessment (Department of Navy, 2012). These parking areas were designed so that they would not create or worsen existing floodplain conditions.

The storage of MRAPS at these parking facilities should have no effect on the Cooper River Floodplain. These facilities occupy an extremely small portion of the Cooper River floodplain and MRAP storage is temporary.

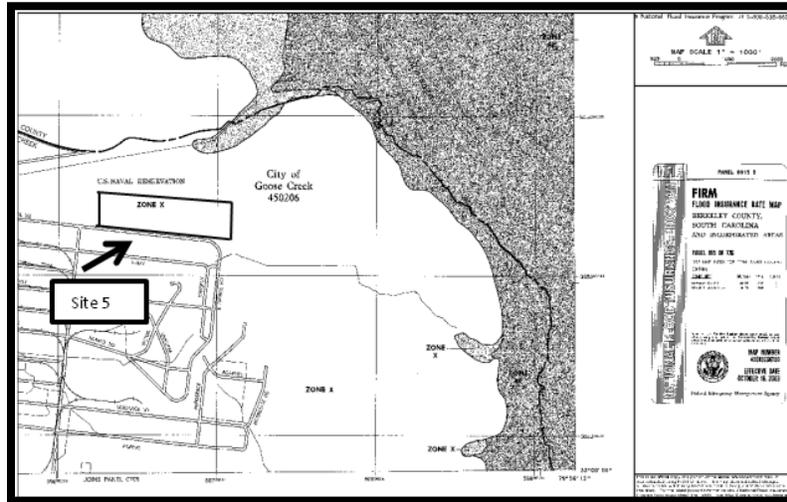


Figure 3-2 Location of Project Sites in Relation to 100 Year Floodplain

Coastal Zone Consistency

South Carolina protects its coastal environment through its Coastal Management Act of 1977, as implemented by the South Carolina Coastal Management Program. The South Carolina Coastal Management Program is administered by the Department of Health and Environmental Control (SCDHEC), Office of Ocean and Coastal Resource Management. The coastal zone in South Carolina includes all coastal counties, including Berkeley County, and all adjacent coastal waters.

Critical areas directly managed by the Office of Ocean and Coastal Resource Management are defined as the areas from the high water mark to the landward point where tidal vegetation changes from predominately brackish to predominately fresh water (SOUTHNAVFACENGCOM 2003). The regulation of wetlands under the South Carolina Coastal Management Program is limited to areas below the watermark of ordinary high tide, except where upland activities are filling into coastal wetlands, and where structures are being erected on sites suitable for water dependent industry (SOUTHNAVFACENGCOM 2003).

JBCHS/ASLAC must ensure that any of its activities conducted in the coastal zone or that would directly affect the coastal zones are carried out in a manner that is, to the maximum extent practicable, consistent with approved coastal zone management programs. This includes the

management of post construction runoff and mitigation for impacts to non-jurisdictional wetlands.

Environmental Consequences

Short- and long-term adverse effects on surface water and groundwater resources would be expected from implementing the proposed action. The project would be permitted under South Carolina's 2006 NPDES Construction General Permit, and the installation would be required to submit a *Notice of Intent* (SCDHEC Form 2617) for project approval before beginning land-disturbing activities (SCDHEC 2012). In addition, a Stormwater Pollution Prevention Plan (SWPPP) for the project would have to be prepared by a licensed South Carolina Professional Engineer. The SWPPP would include the use of appropriate BMPs to minimize the release of storm water runoff and sediment from the site of construction.

Site 5's proximity to the Back River and areas of freshwater wetlands increases the risk of water contamination from sediment-laden runoff and accidental spills of petroleum hydrocarbons and other equipment-related pollutants during construction. Short-term impacts on surface water quality would be expected from runoff during the construction phase however, the implementation of stormwater and sediment control measures during construction through the use of state-approved BMPs is mandatory, and will minimize adverse effects on water resources. No long-term effects (i.e., those extending beyond the construction phase) on surface water resources would be expected. The construction of impervious surfaces will inhibit groundwater recharge, however, these impacts are not significant and will be limited to the shallow surface groundwater system. This project will not impact any underlying aquifers. There are potential long term impacts to wetlands. Approximately 0.76 acres of wetlands would be lost if the proposed action was implemented on Site 5, however, these losses must be mitigated for under federal and state law. Under the 2008 Mitigation Rule, purchasing mitigation from an approved mitigation bank is the priority. Calculations using the Charleston District's wetland mitigation calculations show that approximated 8 wetland credits would be necessary to compensate for 0.76 acres of impacts. A review of the Corps Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS) indicates that wetland mitigation credits are available in the service area that ASLAC occupies. While there are approved mitigation banks that can provide the wetland credits, the local functions and benefits of the wetlands would be permanently lost. No construction activity is taking place within the 100 year floodplain, therefore no impacts to the floodplains are anticipated.

No Action Alternative

No effects on surface water or groundwater resources, wetlands, or floodplains would be expected from implementing the No Action Alternative. No construction or facility operations

would occur under the No Action Alternative, and no equipment usage or operations that could affect water resources would occur.

3.0 3.7 Biological Resources

Affected Environment – Site 5 (Preferred Alternative)

Vegetation

JBCHS manages approximately 9,091 acres of forestland at the former NWS. The predominant forest cover is loblolly pine, with lesser amounts of forest cover in hardwood, and longleaf pine (SOUTHNAVFACENGCOM 2003). Site 5 is vegetated with a mixture of upland and wetlands vegetation. Currently (and historically) it is being managed for timber production and wildlife habitat (JBCHS 2003). Pine flatwoods is the prominent upland community in better-drained areas. Loblolly pine (*Pinus taeda*) and longleaf pine (*P. palustris*) dominate these areas (SOUTHNAVFACENGCOM 2003). Hardwood species such as sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and water oak (*Quercus nigra*) occasionally reach canopy height in the flatwoods, but these species are most often understory trees. Other understory trees are waxmyrtle (*Myrica cerifera*), dogwood (*Cornus florida*) and American Holly (*Ilex opaca*). Ground cover and shrub layer vegetation are variable and dependent on the hydrological regime and degree of canopy closure, but they often include honeysuckle (*Lonicera japonica*), swamp sweetbells (*Leucothoe racemosa*), privet (*Ligustrum sinense*), sweet pepper bush (*Clethra alnifolia*), blackberry (*Rubus* spp.), and green brier (*Smilax* spp.).

Wildlife

A large number of both game and non-game fish and wildlife species are dependent on the diverse habitats found on JBCHS. These species have adapted to the radically altered habitat that resulted from Hurricane Hugo in 1989. Non-game species include many different types of birds, amphibians, and reptiles. Game species include deer, rabbit, and different types of waterfowl. Species adapted to mature, open woods such as wild turkey, fox squirrel, and Bachman's sparrow, that appeared to have declined sharply after the hurricane seems to have rebounded, according to the latest surveys. Species such as gray squirrel and white-tailed deer that heavily depend on acorns in winter months continue to show varying degrees of decline. Small game animals such as bobwhite quail, raccoons, cottontail rabbits, foxes, and bobcats, have all adapted to early successional stages and young loblolly pine forests now predominate.

Threatened and Endangered Species

Surveys for rare, threatened, and endangered plants, amphibians and reptiles, and mammals have been conducted on the installation (SOUTHNAVFACENGCOM 2003). No threatened or endangered plant, amphibian, or reptile species were found on the installation in those surveys. A

male red-cockaded woodpecker (RCW) (*Picoides borealis*, federal endangered) was located and banded during a 1999/2000 survey, but no mating or nesting activities were observed. A review of the State's Rare, Threatened, and Endangered Species Inventory show no incidences of any state listed species of concern within the vicinity of the Preferred Alternative site. A colonial waterbird (unidentified species) was observed near Building 320 near the ASLAC facility in 1995, however, no additional sightings of this or any other state listed species has been found near the Preferred Alternative.

The area was previously used by RCW, but according to the JBCHS Natural Resources Department, there has been no activity in this area for years (Wahl 2012). A Bald Eagle's nest has been established east of the Preferred Alternative.

The uplands of the Northside tract of the installation, in which Site 5 is located, is mostly pine forest and suffered extensive wind damage from Hurricane Hugo in 1989. Most mature trees were blown down. Although no endangered or threatened plants were found in the area in the 1987 study and no specimens were found in a 1993 survey, it is possible that when the planted longleaf pine trees are mature and a regular fire regime is established, certain species could reestablish in the area (SOUTHNAVFACENGCOM 2003). Other areas, where fire is not being incorporated as a management tool are being allowed to develop naturally. Loblolly pine seedlings are being allowed to mature. As long as the sites are managed for commercial loblolly pines, they will not be habitat for any known endangered, threatened, or status review species.

Table 3.13 Federally Listed Species Potentially Occurring in the Project Area

	Federal/State Status	Habitat	Potential to be Found on Sites
Amphibians			
Frosted Flatwoods Salamander (<i>Ambystoma cingulatum</i>)	Threatened/Endangered	Seasonally wet, pine flatwoods, and pine savannas. Typically found under logs near small cypress ponds. Traditionally found in sandy, seasonally wet longleaf pine communities. Adults are subterranean, living mainly underground in root channels or crayfish burrows	Medium
Birds			
Red-cockaded Woodpecker (<i>Picoides borealis</i>)	Endangered/Endangered	Mature, living, open pine forests that are maintained by naturally occurring summer fires. Older trees (70 years or more) of specific pine species (including long leaf pine [<i>Pinus palustris</i>] are preferred.	Medium
Wood Stork (<i>Mycteria americana</i>)	Endangered/Not Listed	Mainly tidal waters, marshes, swamps, streams and mangroves	Low
Flowering Plants			
	Federal/State Status	Habitat	Potential to be Found on Sites
American Chafseed	Endangered/Not Listed	Open grass-sedge systems. sandy (sandy peat, sandy loam), acidic, seasonally moist to dry soils. It is generally found in habitats described as open, moist pine flatwoods, fire-maintained savannas, ecotonal areas between peaty wetlands and xeric sandy soils, and other	Medium
Canby's Dropwort	Endangered/Not Listed	Coastal pain habitats (wet meadows, wet pineland savannas, ditches, sloughs, and around the edges of Cypress-pine ponds)	Medium
Pondberry (<i>Lindera melissifolia</i>)	Endangered/Not Listed	Wetlands habitats in the interior areas and the margins of sinks, ponds, and other depressions in coastal sites	Low
Source: Beattie 1999, Carroll 2002, Seely 2000, USFWS 2012a, 2012b, 2012 c			
Note: Species listed by the USFWS IPAC system by obviously not found on the proposed sites (e.g. West Indian manatee (<i>Trecheus manatus</i>) and loggerhead sea turtle (<i>Caretta caretta</i>) are not listed in the table.			

The USFWS's Information, Planning, and Conservation System (IPAC) identified the species listed in Table 3.13 as potentially occurring in or near the two proposed sites. While the potential for the species to occur on Site 5 is noted in the table, correspondence with the USFWS indicates that there no known species or critical habitat are found within the Preferred Alternative location. Additionally, the National Oceanic and Atmospheric Administration (NOAA) recently (April 2012) listed the Atlantic sturgeon (*Acipenser oxyrinchus*) as an endangered species (77 Federal Register 5914). The NOAA National Marine Fisheries Service has established that there are five distinct population segments of Atlantic sturgeon, one of which is the Carolina distinct population segment that is listed as endangered (NOAA undated). The South Carolina Department of Natural Resources reports that it is probable that a population of sturgeon exists in the Cooper River (SCDNR 2010). The Preferred Alternative drains into a tributary to Back Creek; sturgeon are not know to enter Back Creek.

Environmental Consequences

Long-term adverse effects would be expected on biological resources on the site selected for developing the MRAP vehicle facilities. Site 5 has about 95 acres of forested land that would have to be cleared and permanently converted to developed land, resulting in a loss of vegetation, wildlife habitat, and timber production. Some animals would be able to relocate to other areas, though some mortality of animals on the site would be expected, either directly from construction or indirectly after leaving the site. No significant impacts will occur.

Red-cockaded Woodpecker

The Integrated Natural Resources Management Plan for Naval Weapons Station Charleston that was prepared before JBCHS BRAC realignment contains management procedures that must be followed to meet Endangered Species Act requirements applicable to the RCW. One management procedure requires a project survey before any significant land-disturbing activity (excluding burning). A 100 percent survey of the area that would be affected by the MRAP vehicle project would be conducted on the selected site if one has not occurred in the previous year (SOUTHNAVFACENGCOM 2003).

Existing RCW nesting and foraging habitat on the installation is protected and managed, and additional habitat is allowed to develop for population expansion (SOUTHNAVFACENGCOM 2003). Before the beginning of any habitat-altering activity in RCW nesting and foraging habitat, a biological assessment on the impact of the activity on RCW populations would have to be made. Consultation with the USFWS indicated that the proposed project would not likely effect existing RCW nesting and foraging habitat.

Other protected species

As noted above, maturation of the pine woods areas could lead to establishing one or more species of protected plant or animal on a site. The USACE Charleston District has coordinated with the USFWS regarding the presence of threatened and endangered species on Site 5, and the USFWS responded that it has no concerns with respect to federal protected species on the site. Regarding the Atlantic sturgeon, given the species' limited presence in the Cooper River and the short time frame during which adverse effects on the riverine environment from the proposed action could occur (only during construction), no adverse effects on the species' population would be expected. No effect on federally protected species would be expected.

With respect to Migratory Birds: the Migratory Bird Treaty Act (MBTA) of 1918 decreed that all migratory birds and their parts (nest, eggs, and feathers) are fully protected by law. Under the MBTA, migratory birds at JBCHS are protected against takings, which are defined as habitat modifications, shooting, pesticide application, nest or egg removal and(occasionally) tree

removal. Takings do not include, however, habitat modification as a result of a timber sale or nest removal outside of nesting season does not constitute a taking. Prior to any action that may impact a migratory bird species, JBCHS' natural resource manager will be notified and that person will determine if the proposed action would result in impacts to a migratory bird species and, if necessary, will initiate discussions or permitting with USFWS (JBS 2003).

With respect to the Bald Eagle: there are two active bald eagle nests on JBCHS, one being in the vicinity of the ASLAC facility and the Preferred Alternative. JBCHS has designated and marked Territory Management Zones (TMZ) around the nests that are kept disturbance free during the eagle's reproductive period. TMZs are 1500 feet and routine activities that were ongoing when the nest site was chosen may continue, however, any new roads or construction is not allowed without prior consultation. The Preferred Alternative is outside of the TMZ for the nearest nest (JBS 2003).

A review of the South Carolina Department of Natural Resources State Listed Threatened or Endangered Species database shows that there are no instances of a state listed species known to occur within the Preferred Alternative Site. No significant impacts to any of the species discussed above will occur.

No Action Alternative

No effects would be expected from implementing the No Action Alternative. No site disturbance and consequently no wildlife disturbance would occur under this alternative.

3.1 3.8 Cultural Resources

JBCHS has extensive cultural and archeological resources. Twenty-four cultural resource surveys and excavations have been conducted at the former NWS. These investigations resulted in the recordation of 74 archaeological sites and 895 individual structures. These sites represent a wide temporal range and a variety of site types, including 41 historic sites, 16 prehistoric sites, and 17 sites containing both prehistoric and historic components. Of the 2,764 improved facilities present in the former NWS, 1,187 have been deemed ancillary, and therefore were not cited in the recent ICRMP. The remaining 1,571 required greater historic resource management and therefore were cited in the inventory list. Of these, none of the buildings or structures that have had architectural surveys have been recommended individually eligible for the NRHP, while 427 buildings, 224 structures, and 25 temporary facilities have not yet been evaluated.

Section 106 requirements have been fulfilled for 65 of the 104 contributing resources of the Polaris Missile Magazine Historic District (in the JBCHS area), as discussed more fully below (ASLAC 2011).

Affected Environment Site 5 (Preferred Alternative)

The affected environment is 95 acres, and is located in Berkeley County and in the Coastal Plain physiographic province of South Carolina in the extreme northeastern portion of JB CHS on the west side of Back River.

The Preferred Alternative site is in an area that has been surveyed for cultural resources (Bailey et al. 2000). While archaeological sites were recorded as a result of that survey, no sites, structures, or districts are within Site 5. The nearest site (38BK1847, a Late Woodland artifact scatter) is approximately one-quarter mile east of Site 5 that the SHPO determined was not eligible for the NRHP.

Coordination with the SHPO has confirmed that 2000 Survey findings are valid and that there are no known cultural resources within the Preferred Alternative location.

Native American Resource/Traditional Cultural Properties/Sacred sites

JB CHS manages the Nation to-Nation Tribal Consult process regarding use of the land on a base wide basis separately from the NEPA process for specific projects. Informal consultations have been conducted and formal consultation is ongoing. Responses to the informal consultation are in Appendix C, and formal consultation letters will be placed there once the consultation process is completed. To date, the base wide formal consultation process has identified no tribal or Native American resources on JBCHS.

Environmental Consequences Site 5 (Preferred Alternative)

No adverse effects would be expected from implementing the proposed action at Site 5. This site has been surveyed for cultural resources and does not contain any known cultural resources (Bailey, 2002).

In all probability, a Department of Army permit for impacts to waters and wetlands will be required for this project to proceed. A general condition of all permits issued by the Charleston District Corps Regulatory Branch is that if a permittee discovers any previously unknown historical, cultural, or archeological remains and artifacts while accomplishing the authorized activity, the permittee must immediately notify the district engineer of the findings and, to the maximum extent practicable, avoid construction activities that may affect the remains until the required coordination has been completed. The district engineer will initiate the Federal, Tribal,

and state coordination required to determine if the uncovered items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places. This permit condition serves as an additional safeguard if previously unknown cultural resources are uncovered.

As there are no known cultural or historical resources on the Preferred Alternative, no significant impacts will occur.

No Action Alternative

No adverse effects on archaeological resources at JBCHS would be expected from implementing the No Action Alternative because no activities would occur that could disturb cultural resources. ASLAC would remain unchanged under the No Action Alternative.

3.2 3.9 Socioeconomics

This section describes the socioeconomic region of influence (ROI). An ROI is a geographic area selected as a basis on which social and economic impacts of project alternatives are analyzed. JBCHS/ASLAC is about 14 miles north of the city of Charleston, which is the county seat of Charleston County and part of the Charleston tri-county metropolitan area consisting of Charleston, Berkeley, and Dorchester counties. The ROI for the socioeconomic environment is defined as Berkeley, Charleston, and Dorchester counties, South Carolina. Socioeconomic data for South Carolina and the United States are presented for comparative purposes.

Employment and industry

Labor force and unemployment data are shown in Table 3.14. The ROI's labor force increased 20 percent between 2000 and 2010, higher than the state and national growth rates of 9 percent and 8 percent, respectively. This double-digit labor force growth in the ROI is from a burgeoning technology sector that is building a strong base of technically skilled workers, especially in the areas of engineering and information technology (CRDA 2011). The ROI 2010 annual unemployment rate was 9 percent, lower than both the South Carolina rate of 11 percent and the national unemployment rate of 10 percent. The primary sources of ROI employment were government and government enterprises; retail trade, accommodation and food services; other services (such as equipment and machinery repairing, religious activities, grant making, advocacy, dry cleaning, and so on, except public administration); and health care and social assistance. Together, those five industry sectors account for about 50 percent of regional employment (BEA 2011). JBCHS is a major contributor to the ROI economy. JBCHS—which united the Charleston Air Force Base with the NWS—is now the region's largest single employer with more than 20,000 employees. Their combined payroll has an annual economic impact of \$4.36 billion to the region's economy (Tyson 2010).

	2000 Civilian Labor Force	2010 Civilian Labor Force	% Change in Labor Force 2000-2010
ROI	281,196	322,108	20%
South Carolina	1,988,159	2,164,612	9%
United States	142,583,000	153,889,000	8%
Source: BLS 2011			

Income

ROI income levels were higher than state but lower than national income levels (Table 3.15). The ROI per capita personal income (PCPI) was \$24,169, which is 107 percent of the South Carolina PCPI of \$22,509 but 92 percent of the national per capita income of \$26,409. The ROI median household income of \$49,808 was 117 percent of the South Carolina median household income of \$42,442 but 99 percent of the national median household income of \$50,221 (U.S. Census Bureau 2011a).

	PCPI	Median Household Income
ROI	\$ 24,169	\$ 49,908
South Carolina	\$ 22,509	\$ 42,442
United States	\$ 26,409	\$ 50,221
Source: US Census Bureau 2011a		

Population

The ROI's 2010 population was about 664,600, an increase of about 115,500 persons since 2000. The ROI's population growth of 21 percent was higher than the state and national growth rates of 15 percent and 10 percent, respectively (Table 3.16). The city of Charleston is the second largest city in South Carolina, and the economic growth in the surrounding ROI is the reason for the strong population growth.

	2000 Population	2010 Population	% Change in Population 2000-2010
ROI	549,033	644,607	21%
South Carolina	4,012,012	4,625,346	15%
United States	281,421,906	308,745,538	10%
Source: US Census Bureau 2000, 2011b			

Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, was issued by President Clinton on February 11, 1994. The EO requires that federal agencies take into consideration disproportionately high and adverse environmental effects of governmental decisions, policies, projects, and programs on minority and low-income populations.

According to the U.S. Census Bureau 2010 census, minority populations were 37 percent of the ROI's total population. That is slightly higher than the South Carolina and national minority population rate of 36 percent (U.S. Census Bureau 2011b). The ROI poverty rate was 11 percent, lower compared to the South Carolina poverty rate of 17 percent and the national poverty rate of 14 percent (U.S. Census Bureau 2011c).

Protection of Children

EO 13045, *Protection of Children from Environmental Health and Safety Risks*, issued by President Clinton on April 21, 1997, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. Children are present at JBCHS as residents and visitors (e.g., residing in on-post family housing, using recreational facilities, attending on-post events). The installation takes precautions for their safety through a number of means, including using fencing, limiting access to certain areas, and requiring adult supervision. No housing, school, recreational, or other areas where children typically would be present are adjacent to the Preferred Alternative location.

Environmental Consequences

EIFS Model Methodology

The economic effects of implementing the Preferred Alternative are estimated using the Economic Impact Forecast System (EIFS) model, a computer-based economic tool that calculates multipliers to estimate the direct and indirect effects resulting from a given action. Changes in spending and employment associated with the proposed MRAP vehicle building construction and road improvements represent the direct effects of the action. Using the input data and calculated multipliers, the model estimates ROI changes in sales volume, income, employment, and population, accounting for the direct and indirect effects of the action.

For purposes of this analysis, a change is considered significant if it falls outside the historical range of ROI economic variation. To determine that range, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. That analytical process uses historical data for the ROI and calculates fluctuations in sales volume, income, employment, and population patterns. The historical extremes for the ROI become the thresholds of significance (i.e., the RTVs) for social and economic change. If the estimated effect of an action is above the positive RTV or

below the negative RTV, the effect is considered significant. Appendix D discusses the methodology in more detail and presents the model inputs and outputs developed for this analysis (USACE, 2012).

EIFS Model Results

Short-term beneficial economic effects on the regional economy would be expected. The proposed development at JBCHS/ASLAC would create jobs and generate business sales in the construction and related industries. The expenditures and employment associated with the construction of buildings and road improvements on JBCHS/ASLAC would increase ROI sales volume, employment, and income, as determined by the EIFS model (Table 3.93 and Appendix D). These economic effects would be short term given the temporary nature of the construction process. Such changes in sales volume, employment, and income would be within historical fluctuations (i.e., within the RTV range) and would be considered in significant. Table 3.17 shows predicted total employment, both direct and induces as a result of the proposed project. Of the 795 jobs predicted, the majority (562) of the jobs will be indirectly created: the rest (232) of the jobs will be a direct result of the project. Construction of the proposed project will employ approximately 104 personnel and the proposed mission needs approximately 128 contractor and 7 civilian personnel, however no significant long-term operational economic impacts would result because the existing JBCHS/ASLAC workforce will be used to perform MRAP vehicle maintenance, storage, and management tasks (USACE, 2012). No significant impacts will occur.

Table 3.17 EIFS Model Output

Variable	Total Change	Percent Change	RTV Range
Sales (business) volume	\$ 149,454,000	0.76 %	-5.78% to 10.28%
Income	\$ 21,923,960	0.27 %	-5.55 % to 10.11 %
Employment	795	0.27 %	-2.92 % to 3.71 %
Population	0	0.00 %	-1.34 % to 2.20 %
Source: EIFS Model			

Environmental Justice and Protection of Children

The Preferred Alternative of constructing MRAP vehicle warehouse, maintenance, and storage buildings should have no environmental or health effects on low-income or minority populations or children. The Preferred Alternative is not an action with the potential to substantially affect human health or the environment by excluding persons, denying persons benefits, or subjecting persons to discrimination. No significant impacts will occur.

No Action Alternative

No socioeconomic effects would occur. The proposed MRAP vehicle construction activity would not be implemented under the No Action Alternative; therefore, no socioeconomic effects would be expected from this alternative.

3.3 3.10 Traffic and Transportation

Affected Environment – Site 5 (Preferred Alternative)

Transportation on JBCHS is achieved mainly via road and street networks, and rail spurs. The system serves this portion of the installation consisting of everyday personnel and installation operations trips.

On-Post Roadways and Gate Traffic

Transportation on roadways in and around JBCHS during the morning and evening peak periods typically operate smoothly at the two gates for access into the installation. Roads providing access to Site 5 are POMFLANT Access Road, Perimeter Road, North Patrol Road, and North Freedom Drive. The roads are used for vehicular traffic and do not have pedestrian walkways. The industrial buildings throughout this portion of the installation have walkways leading to the parking lots.

Off-Post Roadways

Roadways providing access to JBCHS are Interstate (I)-26, Mark Clark Expressway (I-526), North Rhett Extender, South Goose Creek Boulevard (U.S. Highway 176) and Liberty Hall Road. Liberty Hall Road provides access to Perimeter Road and Site 5. I-26 runs northwest southeast approximately 7 miles from Site 5. Mark Clark Expressway (I-526) is a horseshoe around North Charleston from U.S. Route 17 (Figure 3-5). Average daily traffic counts for off-post roadways are listed in Table 3.18.

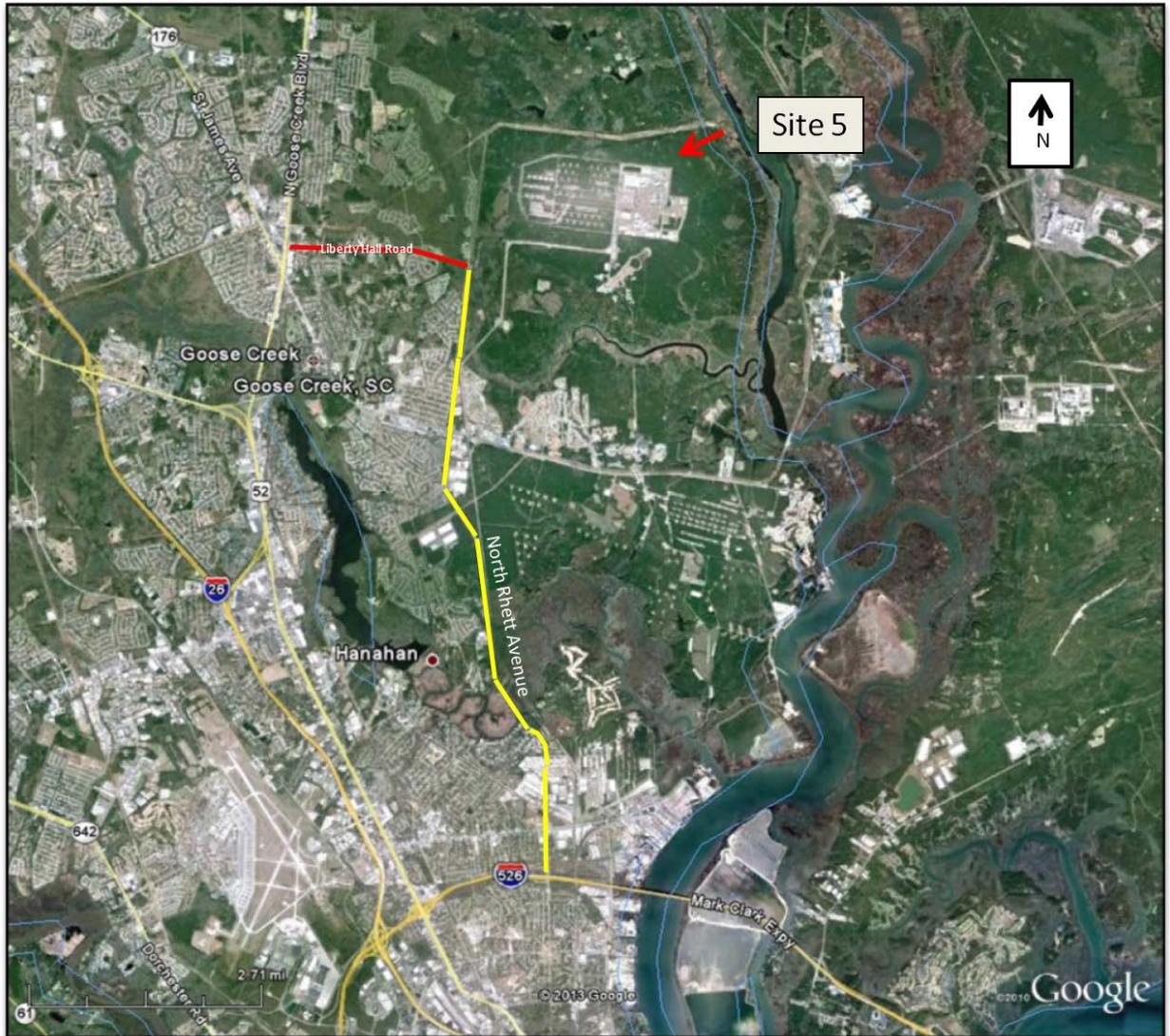


Figure 3-5 Major Road Ways Proximate to JBCHS

Table 3.18 Average Daily Traffic Counts (AADT) for Off-Post Roadways	
Roadway	AADT
South Goose Creek Boulevard (from I-26)	45,700
North Rhett Avenue (from I-526)	12,600
Liberty Hall Road (between North Rhett Road and Pomflant Access Road)	12,300
Source: SCDOT 2010	

Air, Rail, and Public Transportation

The closest airport, Charleston International Airport, is about 8 miles from JBCHS, which provides commercial and passenger air service. Railroad spurs run parallel with many of the

installations roadways providing accessibility to most buildings throughout the post. Amtrak passenger rail service has a station in North Charleston with service to several cities along the East Coast. SmartRide is the bus system designed for commuters and has no stops near Goose Creek or near Site 5 (SCDOT 2011).

Environmental Consequences

Short-term adverse effects would be expected. The short-term effects would be from construction vehicles, day labor traffic, and delivery of MRAP vehicles to the site. These activities would be scheduled and routed to minimize conflicts with other traffic. No significant impacts will occur.

On Post Roadways, Gate Traffic, and Parking

Traffic congestion would increase because of additional construction vehicles and traffic delays near the proposed site. These effects would be temporary in nature and would end with the construction phase. The condition of the local on-post and off-post road infrastructure would be sufficient to support any increase in construction vehicle traffic. In addition, road closures or detours to accommodate utility system work would be expected, creating short-term traffic delays. Such effects would be minimized by directing all construction vehicles to access the installation via the gates closest to the site placing construction staging areas where they would least interfere with traffic. All construction vehicles would be equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs when appropriate.

No increase in permanent personnel at JBCHS would be expected with the operation of the facilities; therefore, no additional vehicle trips would result either originating at or destined to the installation after the facilities were constructed.

No gate or on-post roadway would be expected to change substantially from implementing the Preferred Alternative. The MRAP vehicles would be delivered by train, truck, or ship. The MRAP vehicles arriving by ship would likely be driven from the port along established routes approximately 10 miles to JBCHS. The location is equipped to receive shipments by train without using off-post roadways or increasing gate traffic, and would require minimal use of on post roadways because of the train load/off-load site's location. Vehicles arriving by rail would be unloaded at a load/offload point in Lot 5N, which is near a military vehicle test track.

The vehicles would then be driven to Site 5. On-road trucks delivering vehicles would be required to use an existing truck route within JBCHS that directs truck operators to a receiving

office in Building 317. From Building 317 the trucks would continue to the load/offload point, be unloaded and driven to Site 5. No significant impacts will occur.

Off-Post Roadways

Short-term adverse effects would be expected. MRAP vehicles delivered by ship to JBCHS would be driven through a 10-mile corridor to the delivery point. Traffic would increase during construction through the delivery of materials; however, this increase would be temporary and would be alleviated as construction activities drawdown. The transfer of the vehicles would be short term and temporary and would not contribute to long-term changes in traffic. No significant impacts will occur.

Air, Rail, and Public Transportation

The Preferred Alternative would produce a temporary increase in rail usage. However, these effects would cease when the MRAP vehicle delivery is completed. Those effects are not considered significant. Notably, this alternative would have no effect on air or public transportation resources in the area. No significant impacts will occur.

No Action Alternative

Implementing the No Action Alternative would result in no effects on traffic and transportation. No construction would be undertaken, no new MRAP vehicles facilities would be built, and no MRAP vehicles would be stored and maintained. Traffic and transportation conditions would remain they currently are.

3.4 3.11 Utilities

Affected Environment – Site 5 (Preferred Alternative)

The utility components discussed in this section include water supply, and wastewater system, storm water drainage, electricity, natural gas, and solid waste management.

Potable Water

Potable water supply is available at JBCHS. JBCHS water is supplied by the Charleston Water System, a public water and wastewater utility serving the Low Country of South Carolina. Charleston Water System obtains its raw water from the Edisto River and Bushy Park Reservoir.

Wastewater System

Berkeley County Water & Sanitation provides wastewater treatment to the installation.

Storm Water System

Site 5 has storm water concerns because of poor absorption. Provisions of the law (South Carolina Code of Laws Title 48, Chapter 14) require that all jurisdictions in the state implement a storm water management program to control the quality and quantity of storm water runoff resulting from construction projects.

Solid Waste

Solid waste is defined as any garbage or refuse; sludge from a Wastewater Treatment Plant (WWTP), water supply treatment plant, or air pollution control facility; and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. Construction debris includes uncontaminated solid waste resulting from the construction, remodeling, repair, structures, and roads, as well as uncontaminated solid waste resulting from land clearing.

Solid waste is collected in contractor provided containers & hauled to local landfills/recycling facilities. Construction debris is collected at the construction site and disposed of at a permitted facility off-post. This debris is collected and processed through a private contractor and not the Public Works Directorate.

Electricity

Electricity at JBCHS is provided by South Carolina Electric and Gas. Berkeley Electric Cooperative provides electrical power to approximately 60,000 members throughout the area (USACE 2006).

Electricity use from the new facilities is estimated at 239,148 Kilowatt-Hours per Year (61 kilovolt amperes). The nearby ASLAC facilities have a total of 6 mega-volt amperes available. Power connection for the new facilities will be through the substation at Building 316. All new

power distribution will be through underground cables. (Colorado DataScapes, LLC and the U.S. Army Engineering and Support Center, 2012).

Natural Gas

JBCHS is supplied with natural gas by South Carolina Electric and Gas via 23,000 linear miles of pipeline. A high-pressure natural gas line bisects the eastern section of Site 5.

Environmental Consequences

Short-and long-term adverse effects on utilities would be expected. The effects would be from adding debris from construction of the new MRAP vehicle facilities to the landfill. All utility services, including water, wastewater, gas, communications, and electricity are available near Site 5. The existing JBCHS capacity for all utilities would be adequate for projected demands from the proposed MRAP vehicle facilities. The individual site, however, would require the installation of extensive site specific utility infrastructure to connect the proposed facilities to the water, wastewater, gas, communications, and electricity network. During the facility construction contractors would avoid the high-pressure natural gas line that runs through Site 5.

The Preferred Alternative would generate approximately 1,214 tons of construction debris (Table 3.19). Approximately half of the debris would be recycled, which would result in 607 tons of nonhazardous construction debris for disposal. In addition, an increase in solid waste generation from maintenance operations would be expected. No significant impacts will occur.

	Type	Debris Generation Rate (lb/sq ft)	Debris Generated (tons)	Quantity Recycled (50%) (tons)	Total Quantity Landfill Disposed of (tons)
Construction					
1,658,544 sq ft	Nonresidential	3.9	1,214	607	607
Source: USEPA 1998					

In addition, stormwater regulations require that a storm water permit be obtained before construction activities. Furthermore, South Carolina maintains an SWPPP that establishes BMPs for controlling and preventing siltation and other contaminants associated with construction and industrial activity sites from reaching area surface waters (JBCHS 2003). Stormwater BMPs include:

Minimizing runoff velocities,
Protecting waterways and stabilizing drainage ways that might be particularly susceptible to sedimentation,
Retaining sediment within construction sites, and
Reducing exposure time.

No Action Alternative

No effects on utility systems would be expected from implementing the No Action Alternative, under which the environmental baseline would not change. Utility conditions would remain as they currently are.

3.5 3.13 Hazardous and Toxic Substances

Affected Environment – Site 5 (Preferred Alternative)

Part of JBCHS's ongoing mission is to maintain, repair, and store military equipment between maintenance cycles. Military equipment arriving at JBCHS is inspected, road tested, serviced and repaired as necessary to meet Army standards (O'Brien 2010). JBCHS has procedures and established facilities in place to properly manage the use and disposal of hazardous materials and waste.

JBCHS operates under the NWS Goose Creek Resource Conservation and Recovery Act (RCRA) large quantity generator permit and transport storage and disposal facility Part B permit and operates a 90-day accumulation facility. Satellite accumulation areas are maintained throughout the work centers. The primary hazardous waste management facility at the NWS is the RCRA permitted Hazardous Waste Container Storage Facility (Building 2332) that is in the Southside area of the NWS (GTA 2009).

Hazardous waste is managed in accordance with a Hazardous Waste Management Plan that identifies responsibilities, requirements and procedures for proper identification, labeling, storage, and management of hazardous waste. The plan complies with SCDHEC and EPA. The requirements of the plan apply to all departments, tenants, and contractors performing operations on the installation that generate hazardous waste (SOUTHNAVFACENCOM 2003). Waste generated during maintenance operations at JBCHS are properly managed and ultimately handled by JBCHS Environmental Division who oversees and coordinates the removal, and proper disposal or recycling of such waste.

JBCHS has two active underground storage tanks (USTs) (2,500 and 4,000 gallons) adjacent to Building 850, which is in close proximity to the proposed MRAP vehicle armory location and

one abandoned 4,000-gallon UST near Building 869. Building 869 is not in close proximity to the Preferred Alternative (Figure 3.124). Two 300-gallon aboveground storage tanks (ASTs) are at the fueling point near Building 458. A new 15,000-gallon JP-8 AST is going to be installed at the fueling point to replace a 6,000-gallon mobile fueling truck (Tofaute 2012, personal communication).

Several leaking underground storage tank sites at JBCHS have either received regulatory closure or have closures that are pending no further action (NFA). The sites (referenced by building number) where JBCHS has requested NFA status include Buildings 407, 855, and 857. None of these buildings are near the Preferred Alternative (Figure 3-6).

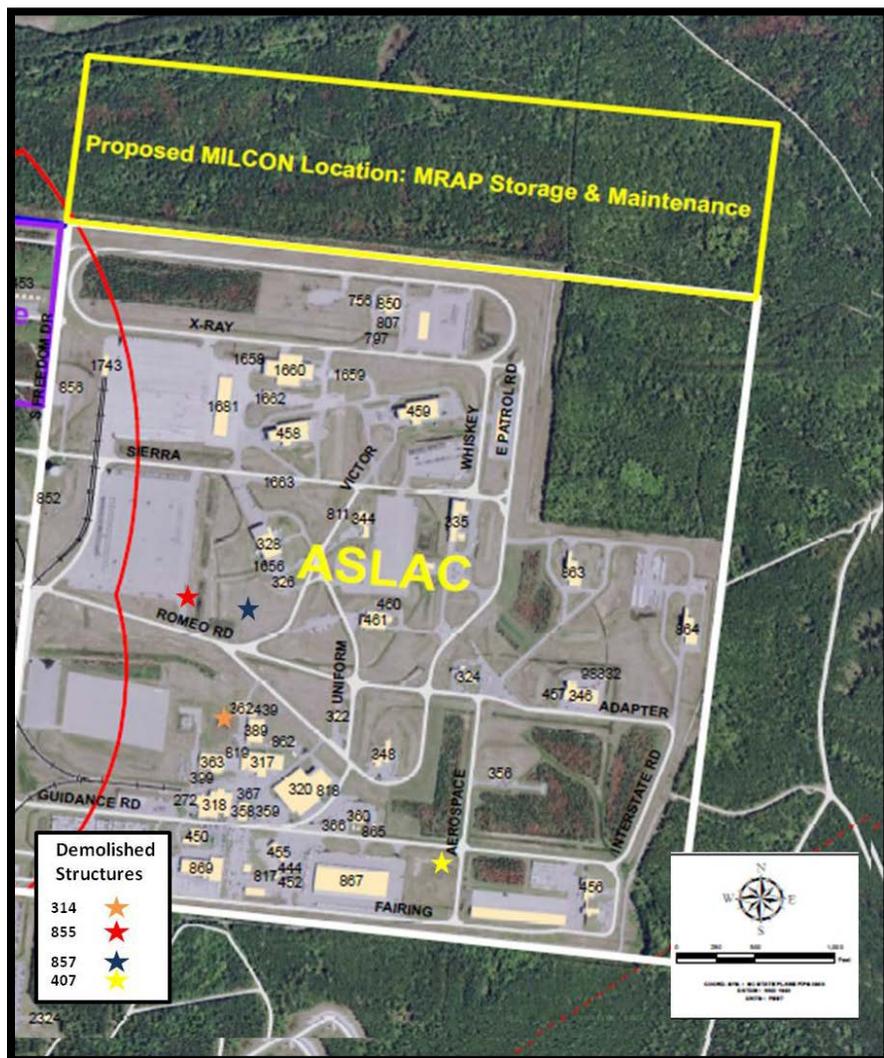


Figure 3-6 Current and Former Building Locations at ASLAC

The sites proximate to the Preferred Alternative that have received NFA from SCDHEC include Buildings 314 (stand-by generator building – demolished), 318 (AMC HQ), 324 (motor pool maintenance), 356 (warehouse), 455 (equipment maintenance), 458 (Allied transportation shop), 459 (wheeled vehicle maintenance), 461 (troop support equipment maintenance), 864 (warehouse), and 869 (container operations). These buildings are shown in Figure 3.124). The former NWS has 105 identified installation restoration sites. Of those, 60 have either received or have applied for NFA, 3 are active, and 1 was transferred to the installation UST program, 8 are military munitions response program (MMRP) sites, 10 are remedy in place, 19 require a RCRA Facility Investigation/Corrective Measures Study, and 4 are awaiting corrective measures implementation (JBCHS 2010). Four solid waste management units (SWMUs) were identified in JBCHAS. They are SWMUs 41, 42, 50, and 61. SWMUs 41 and 42 were associated with paint spray booths in Buildings 320 and 354 respectively, where water curtain water was discharged to a drainage ditch near the intersection of Aerospace and Guidance Roads. SWMU 50 had similar discharges and was assessed under SWMU 42. SWMU 61 included three individual sites that were related to potential breaks in sections of an industrial waste sanitary sewer line. All the installation restoration sites in the area are categorized as NFA in the RCRA Permit (GTA 2009; Patterson 2012 personal communication). None of the SMUs are proximate to the Preferred Alternative.

No MMRP sites, areas of concern, or restoration/cleanup sites that would impose any environmental constraints are on or near the proposed sites. Installation restoration sites in the area are classified as requiring NFA in the RCRA Permit (Patterson 2012, personal communication).

Environmental Consequences

Long-term adverse effects would be expected from implementing the proposed action. There would be an increase in the use of vehicle maintenance materials and a potential increase in the generation of waste (solvent and waste fuels) and recyclable hazardous materials (used oil, antifreeze, solvents, and such) that would need to be properly managed in accordance to state and federal regulations. For example, assuming that the 900 vehicles that would be serviced annually as part of the proposed action at JBCHS are XM1240 Caiman MTV (the largest vehicle in the proposed inventory—containing approximately 8.5 gallons of motor oil—and worst-case scenario for this example) an increase of approximately 7,650 gallons of used oil would be generated per year that would require proper management and be reclaimed or otherwise recycled. That would be the worst-case scenario for motor oil, which makes up the majority of fluids on MRAP vehicles; actually, fewer Caiman MTVs would be serviced each year, and the other MRAP vehicles being serviced would be smaller, resulting in less waste generation. All hazardous materials and waste would be handled and managed in accordance with local, state, and federal regulations and in accordance with established installation procedures.

No effects from environmental restoration, MMRP, underground storage tanks, SWMU activities in JBCHS would be expected. Site 5 is removed from most of the industrial operations that occur at JBCHS, and no sites would impose any environmental constraints on or near the site. If unknown contamination is encountered during construction activities, work in that area would cease, and appropriate JBCHS personnel would be notified to determine appropriate management procedures. Management procedures would comply with established installation procedures and local, state, and federal regulations. No significant impacts will occur.

No Action Alternative

No adverse effects would be expected. JBCHS would continue servicing military vehicles as part of its existing mission.

3.6 3.14 Public Health and Safety

Occupational health and safety applies to on-the-job safety and implements the requirements of 29 C.F.R. § 1926 *et seq.* All construction and demolition at JBCHS is performed in accordance with applicable Occupational Safety and Health Administration (OSHA) regulations. Specific practices and policies to protect human health and minimize safety risks are coordinated between contractors and ASLAC prior to initiation of construction and demolition activities.

The activities related to the construction of the propose project may expose workers to construction-related risks. However, the proposed construction and demolition activities would not introduce any unique or unusual risks. Specific practices and policies to protect human health and minimize safety risks would be coordinated between the contractor and the Safety Office prior to initiation of construction and demolition activities. Furthermore, activities would follow all applicable OSHA requirements. No adverse impacts to public health and safety are anticipated from construction and demolition activities.

3.7 3.15 Cumulative Effects Summary

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). CEQ guidance in Considering Cumulative Effects affirms this requirement (CEQ 2005), stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the Proposed Action. The scope must consider geographic and temporal overlaps among the Proposed Action and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects are most likely to arise when a relationship or synergism exists between a Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects.

To identify cumulative effects the analysis needs to address three fundamental questions:

Does a relationship exist such that affected resource areas of the Proposed Action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?

If one or more of the affected resource areas of the Proposed Action and another action could be expected to interact, would the Proposed Action affect or be affected by impacts of the other action?

If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA, the ROI defines the geographic extent of the cumulative effects analysis; the ROI for this action is the ALSAC facility (Figure X), the areas immediately adjacent to it, and Berkeley, Charleston, and Dorchester counties. The time frame for cumulative effects starts in 1994 and ends in 2022. This time frame was defined by the 1994 addition of the ASLAC Facility and ends with the construction of the proposed project.

Past, Present, and Reasonably Foreseeable Actions

A search for relevant related actions within the ROI was performed. After a review of past, present, and foreseeable actions, it was determined that the actions discussed below would be considered for potential cumulative impacts.

Past Actions

The ASLAC mission is to provide long term storage and maintenance for MRAP vehicles and keeping them in a state of readiness for rapid deployment. There has been one JBCHS action that required NEPA documentation that has significance with the Proposed Action. This is the construction of the parking facilities near Pier C that will be used for temporary MRAP Storage. This has impact has been explained in a previous section.

Present and Reasonably Foreseeable Actions

In accordance with CEQ's guidance, reasonably foreseeable actions focus on those that are relevant and useful in analyzing whether there is a possible incremental impact when considered with the Proposed Action.

Potential Actions at ASLAC

Based on a 5- year projection (JBCHS, 2013), the following projects are planned to be constructed for the ASLAC Facility (Figure 3-7):

Construct ASLAC Battery Facility: JB CHS proposes to design and build a new dry cell battery storage facility of up to 6,000 ft² in the North Side District of JB CHS-WS to support the APS-3 mission. Construction of the facility would require clearing and grading of approximately 0.25 acre (approximately 10,890 ft²) to comply with DoD AT/FP requirements and to include all necessary and required utilities.

Construct ASLAC Dehumidified Storage Facilities JB CHS proposes to construct three 90,000-ft² dehumidified storage facilities in the North Side District of JBCHS (Figure 3-5). Construction of the facilities would require site clearing and grading of approximately 14 acres (approximately 609,835 ft²). The project would comply with DoD AT/FP requirements and would include all necessary and required utilities.

ASLAC Tactical Equipment and Paint/Blast Compound JBCH proposes to demolish Buildings 326,328,335,344,460, and 461 to accommodate the construction of a new equipment paint/blast compound (Figure 3-5).. The compound must be located in an industrial area with sufficient space to accommodate the facility. Buildings 326, 328, 335, 344, 460, and 461 are unnecessary to meet mission requirements and are within a developed industrial area. Demolition of these buildings would create a sufficient area for the ASLAC Tactical Equipment and Paint/Blast Compound without the need for disturbance of previously undisturbed grounds. There are no unoccupied locations of sufficient size to house the compound in industrial areas on JB CHS-WS. Other structures could be demolished to accommodate the ASLAC Tactical Equipment and Paint/Blast Compound, but there would be no measurable difference in environmental impacts and other structures may serve mission needs.

The projects listed above would not result in significant effects, as they involve mostly demolition and construction in existing industrial areas. Construction on previously undisturbed grounds would have greater environmental impacts than construction on previously disturbed

land within an industrial area. As such, no cultural or wildlife resources will be impacted. In addition, these projects are expected to have long term insignificant beneficial effects as the projects will replace old, outdated buildings and structures with newer, more efficient facilities.

The listed projects will also have short term insignificant adverse effects related to noise, soil, air, and water during construction, however, these effects will be minimized by the use of best management practices as dictated by state and federal regulations. While no 404/4-1 permits are anticipated, these facilities will have to obtain State permits for construction and Coastal Zone Consistency permits, ensuring that their impacts will not exceed state and federal regulations.

Potential Actions at JBCHS

JBCHS is an active military installation and as such is always changing to meet new or evolving mission requirements. As such, construction, repairs, demolition and upgrades are a constant at JBCHS as older facilities are replaced with newer, more efficient facilities and infrastructure is upgraded. Over the next 5 years, JBCHS is undertaking new construction actions to provide state of the art facilities for current and future mission and improve efficiency. In concurrence with the planned construction, JBCHS is also undertaking infrastructure improvements to replace obsolete and degrading utilities, improve transportation throughout JBCHS, and enhance communication systems. These improvements will improve mission effectiveness, improve safety, and address other base issues, such as parking limitations (JBCHS, 2013).

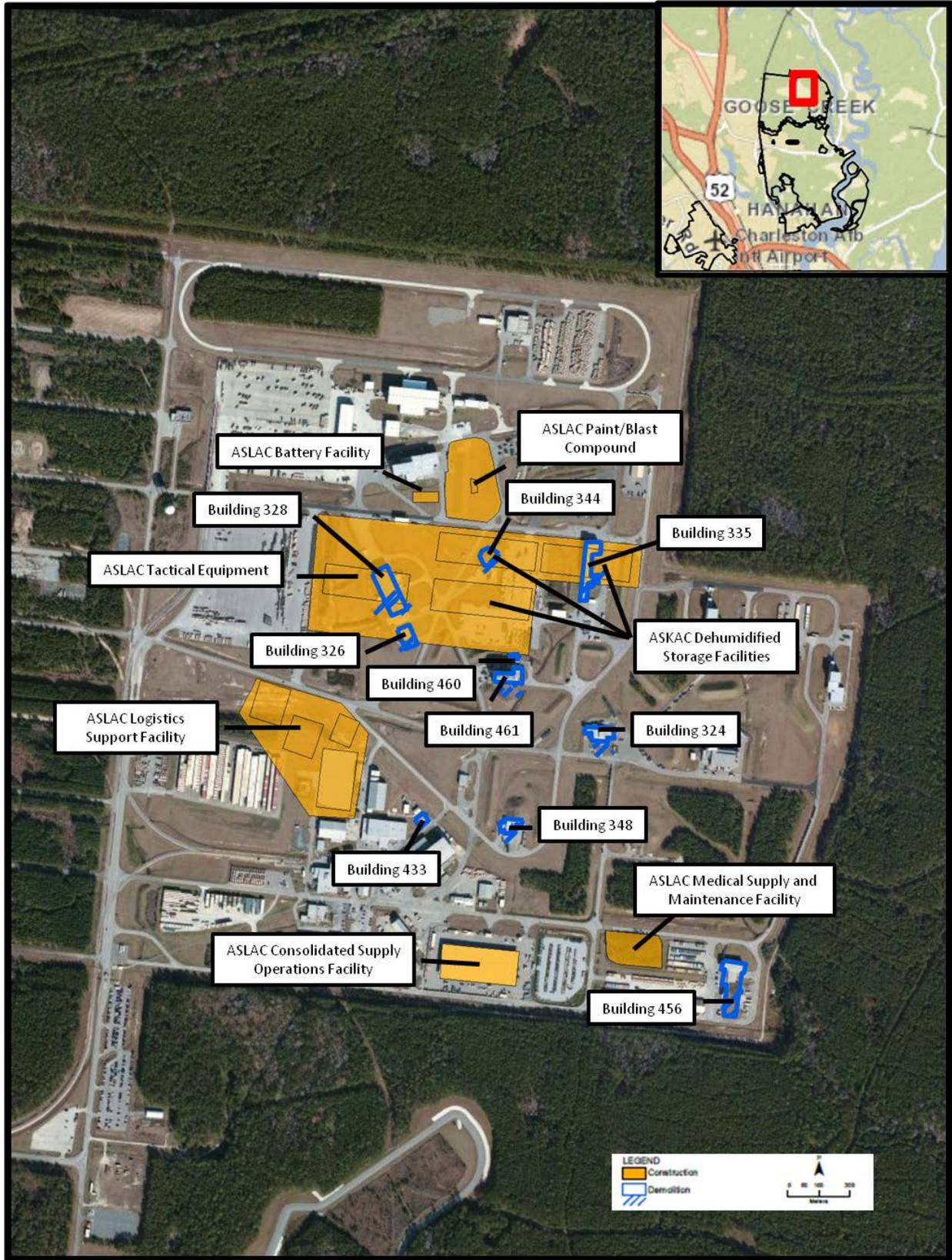


Figure 3-7 Planned Construction/Demolition Projects at ASLAC (JBCHS 2013)

Appendix F shows the planned construction projects for the next five years. The net effect of these proposed projects would In all, JB CHS proposes to demolish 33 facilities at JB CHS-AB and JB CHS-WS. Demolition projects would disturb an estimated 280,577 ft² of land. JB CHS also proposes to construct 26 new facilities, including associated parking and pavement improvements, at JB CHS-AB and JB CHS-WS. The proposed construction projects would disturb approximately 259,114 ft² of land at JB CHS-AB and 2,573,579 ft² of land at JB CHS-WS. There are 8 proposed infrastructure improvement projects that could occur within the next 5 FY under the IDEA. The proposed infrastructure improvement projects would disturb approximately 1,637,543 ft² of land at JB CHS-AB, 1,010,584 ft² of land at JB CHS-WS, and 77,500 ft² of land at the NAAF. Proposed projects in this category could include removal of, installation of, or improvements to paved roadways, airfields sidewalks, parking lots, utilities, stormwater systems, fences, and outdoor recreational facilities.

Demolition, construction, and improvement related to the projects in Appendix X would be expected to result in insignificant short-term adverse effects, localized to individual project areas, on the noise environment, air quality, safety, soils/geological resources, water resources, biological resources, and hazardous materials and wastes, and incremental use of landfill space. The majority of these impacts would be minimized through federal and state regulations related to construction and Coastal Zone Consistency. Short-term insignificant beneficial effects would also be expected on socioeconomics as a result of construction/demolition expenditures. This would result in localized short-term cumulative impacts if the ASLAC project occurs at the same time as any other JBCHS projects. Long-term insignificant cumulative beneficial effects would be expected on safety, energy use, and infrastructure from the construction of new facilities and the demolition of older facilities.

Considering the amount of construction planned for JBCHS, the impacts of the proposed ASLAC MRAP facility should have no significant impacts provided all mandated bmps are implemented and maintained.

Potential Actions in the Surrounding Area

According to the 2010 Berkeley County Comprehensive Management Plan, the areas around ASLAC are considered Low Density Residential, with Conservation/Recreation areas to the north and Industrial/Employment Centers to the northeast across the Cooper River. It is worth noting that the off-base portion of Redbank Rd is considered a Commercial Corridor and could be targeted for future growth (Berkeley County 2011). A two-phase roadway project was identified in the Charleston Area Transportation Study (CHATS) Transportation

Improvement Plan that is proposed for funding between FY10 and FY15. The first phase of the project involves a capacity widening of Henry Brown Blvd from Liberty Hall Rd to Redbank Rd. The second phase would extend Henry Brown Blvd north from its current terminus, cross Medway/Pine Grove Rd and tie into U.S. 52 approximately 0.5 mi north of the intersection of U.S. 52 and Medway/Pine Grove Rd (BCDCOG 2009).

Maintenance dredging by USACE in the Cooper River is done on an annual basis and the Corps is currently conducting a Feasibility Study to determine if it is in the Nation’s interest to enlarge the Charleston Harbor Federal Channel. Neither of these activities, however, will interact with the Proposed Action.

The Charleston Boeing Facility has acquired 320 acres of land for expansion of its facility near Charleston International Airport. This project will result in cumulative loss of vegetation and wildlife habitat and increases in impervious surfaces with corresponding increases in stormwater runoff, however, these impacts will be minimized through the state and federal permitting processes.

No other actions in the region should interact with this Proposed Action to cause cumulative effects.

Air Quality

Table 3.20 shows the 2008 Emissions Inventory for Charleston County (EPA) the projected project emissions for both the construction and operations phases.

Table 3.20 Charleston County Emissions (2008) Compared to Project Emissions					
Emissions	Charleston County (Tons/yr)	Project Construction (Tons/yr)	Project Operations (Tons/yr)	Total Project Emissions (Tons/yr)	Greenhouse Equivalent (Project Emissions) ** (Tons/yr)
CO	95,021	35.8	2.8	38.6	142 (128 Metric Tons)
NO _x	20,491	6.5	13.3	74.8	23,227 (21,036 Metric Tons)
SO _x	6,564	0.1	0.1	0.2	
VOC	17,354	11.9	1.4	13.3	
PM [*]	61,822	34.2	2.2	36.2	

*Is the sum of PM₁₀ and PM_{2.5}
**EPA Greenhouse Gas Equivalencies Calculator

CFR part 98 applies to direct greenhouse gas emitters, fossil fuel suppliers, industrial gas suppliers, and facilities that inject CO₂ underground for sequestration or other reasons. In general, the threshold for reporting is 25,000 metric tons or more of carbon dioxide (CO₂)

equivalent per year. Most small GHG sources fall below the 25,000 metric ton threshold for CO₂ and are not required to report GHG emissions to EPA (EPA 2009). The proposed project's emissions for both Carbon Dioxide and Nitrous Oxides will not cross this reporting threshold.

Additional Effort to Address Air Quality

Independent of the Proposed Action, there are ongoing efforts to maintain and improve air quality. EPA has issued new standards for diesel fuels that will result in less air pollution. Fuels used in non-road diesel, locomotives, and marine diesel engines (all are used extensively around the Charleston area) transitioned from 5,000 ppm sulfur to 500 ppm in 2007, and moved to ultra low sulfur diesel (ULSD), which is 15 ppm in 2010.

On March 14, 2007, EPA announced new emission standards for locomotives and marine diesel engines. For locomotives, the regulations apply to all diesel line-haul, passenger, and switch locomotives that operate extensively within the US, including new locomotives and re-manufactured locomotives. That would include the locomotives that will transport the MRAP vehicles to the ASLAC facility.

The March 2007 rule consists of three parts. First, there will be new standards for existing locomotives (and marine diesel engines, which are not applicable to this project) when they are either re or newly manufactured. The standards take effect as soon as certified remanufacture systems are available, as early as 2008. Second, the rule sets near-term emission standards, referred to as Tier 3 standards, for newly-built locomotive engines. These standards reflect the application of currently available technologies to reduce engine emissions of PM and NO_x and phase-in starting in 2009. The rule also creates new idle reduction requirements for new and remanufactured locomotives and establishes a new generation of clean switch locomotives, based on clean non-road diesel engine standards. Third, the final long-term emissions standards, referred to as Tier 4, apply to newly-built locomotives constructed in or after 2015. These standards are based on the application of high-efficiency catalytic after-treatment technology. These standards are enabled by the availability of ultra-low sulfur diesel fuel with sulfur content capped at 15 parts per million, which will be available by 2012.

EPA estimates this final rule will result in PM reductions of about 90 percent and NO_x reductions of about 80 percent from engines meeting these standards, compared to engines meeting the current standards. The standards would also yield sizeable reductions in emissions of HC, CO, and other air toxics.

The final regulations also include technical amendments to EPA's motor vehicle and non-road engine regulations; many of these changes involve minor adjustments or corrections to the

recently finalized rule for new non-road spark-ignition engines or adjustment to other regulatory provisions to align with this recent final rule.

According to this new standard, Ocean-Going-Vessels (OGV) within 200 miles of the USA are required to comply with the following: Sulfur fuel standards will change in 2012 to 1% or 10,000 ppm S. In 2015 sulfur content will be reduced to 1,000 ppm or 0.10% sulfur. In 2016 NO_x will be 3.0 g/kW-hr, no change in PM and SO_x (since low sulfur fuel reduces these two pollutants), HC and CO are 2.0 g/kW-hr and 5.0 g/kW-hr respectively. No standards are being developed for CO₂.

The final regulations also include technical amendments to EPA's motor vehicle and non-road engine regulations; many of these changes involve minor adjustments or corrections to the recently finalized rule for new non-road spark-ignition engines or adjustment to other regulatory provisions to align with this recent final rule.

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Based on existing emissions data from the Charleston, Berkeley and Dorchester Counties, project emissions for both the construction and operations phases are minimal. While there will be short term adverse impacts from dust and construction equipment emissions, these impacts will cease when construction ends. Estimated emissions generated by the Preferred Alternative would be *de minimis* and would not be regionally significant. Therefore, the Preferred Alternative will not contribute significantly to adverse cumulative effects and there should be no long term major impacts to ambient air quality resulting from the operations and maintenance of the proposed facility.

Regional air quality will be affected by numerous factors, including growth, technology improvements, and regulatory programs and initiatives. As discussed above, anticipated increases in emissions associated with regional development are spawning increasingly stringent EPA emissions standards. Air quality conditions for both JBCHS and the region should remain near their current levels and attainment status should remain.

Noise

The Preferred Alternative would introduce short-term incremental increases in the noise environment. The changes would be insignificant, temporary, and will not have a lasting effect.

Utilities

Constructing the MRAP vehicle facility will require disposing of a quantity of construction debris in landfills. This is a direct effect. Long term waste disposal associated with the maintenance activity associated with this project can be considered an insignificant cumulative effect on landfill capacity.

Water Resources

Cumulative impacts on aquatic resources include the permanent impact on wetlands (either through alterations in hydrology or filling) and the displacement of organisms that utilize them, such as amphibians. The cumulative impacts to water resources increases with every project, but these impacts are addressed through environmental permitting and mitigation. The proposed project impacts approximately 0.76 acres of wetlands; JBCHS has approximately 3,350 acres of wetlands (JBCHS 2003). The wetland loss associated with the proposed project, or any other project will be minimized, mitigated, or offset per USACE or SCDHEC-OCRM permit requirements and conditions. Both the Boeing Facility expansion and the Charleston Harbor deepening are expected to have wetland impacts (through filling or conversion) that far greater than the ASLAC impact. These impacts will be mitigated for through their respective permitting processes.

Biological Resources

Under the Preferred Alternative, up to 95 acres of forested land would be removed for the construction of the ASLAC facility. JBCHS manages approximately 9,091 acres of forestland at the former NWS consisting mainly of pine flatwoods, the dominant forested ecotype found on JBCHS (JBCHS 2003). The proposed action and future projects will contribute a minimal cumulative loss (approximately 1%) of forested areas. Forested resources also have the ability to be replanted. The site has been replanted in pines and is actively managed for silviculture activities (JBCHS 2003) However, existing forested land both on JBCHS, and in the ROI, would not constitute adverse cumulative, measurable impact to forest resources or the habitat it presents to wildlife. Additionally, as part of Berkeley Counties Comprehensive Plan (Berkeley County 2010), there are areas immediately surrounding JBCHS boundary that are zoned as Conservation/Recreation and would be protected from development (Berkeley County 2011). The harvesting of any timber will be conducted in accordance with the Integrated Natural Resources Management Plan. The loss of 95 acres of timber production would

have to be addressed through financial compensation to Air Force Forestry Account, either directly by ASLAC or through the purchase of the timber for harvesting by a commercial forestry operation.

3.8 Cumulative Impacts

The proposed project creates approximately 38.1 acres of new impervious surface in JBCHS. This accounts for less than 0.002% of the land that comprises JBCHS (16307 ac.) and increase the overall surface area (3,210 ac) at JBCHS by less than 0.01% (JBCHS 2003). Overall, the ASLAC MRAP impacts are not significant when compare, or added to, the impacts expected from the JBCHS 5-year plan, the Boeing Expansion, or the Charleston Harbor Deepening. Impacts related to the transport, construction, and operations of the ASLAC MRAP facility and mission do result in some irretrievable resources. The cumulative impacts associated with this project are considered minimal.

3.9 3.16 Mitigation Summary

Mitigation for any wetland loss would be required to replace the functions and values lost from any impacted aquatic resources. Mitigation for any jurisdictional wetland loss will be fully compensated through implementation of a wetland mitigation plan. If this is the case, then the USACE in conjunction with JBCHS/ASLAC would determine appropriate mitigation for the impact. The mitigation could take the form of purchasing credits in a wetland mitigation bank or through the restoration, creation, or enhancement of wetlands, either (preferably) on-site or at a selected off-site location agreed to by the USACE. Any applications for a section 404 permit would have to be coordinated with the USACE Charleston District's Regulatory Division. Any wetlands considered isolated by the USACE are not within the Army's jurisdiction however, compensatory mitigation for their losses will be required to comply with the state's Coastal Zone Consistency requirements. An overview of the mitigation requirements is in Table 3.21.

Table 3.21 ASLAC Mitigation Summary	
Resource	Preferred Alternative
Land Use	None
Aesthetics and Visual Resources	None
Air Quality	None
Noise	None
Geology/Soils	
Geology/Topography	None
Soils	Soil Loss minimized through sediment and erosion control
Water Resources	
Groundwater	None
Surface water	None
Wetlands	Yes (Mitigated)
Floodplains	None
Coastal Zone Management	None
Biological and Cultural Resources	
Vegetation	None
Wildlife	None
Threatened and Endangered Species	None
Cultural Resources	None
Socioeconomics	
Regional Economic Activity	None
Environmental Justice	None
Protection of Children	None
Transportation	None
Utilities	None
Hazardous and Toxic Substances	None

4. FINDINGS AND CONCLUSIONS

This EA has been prepared for Joint Base Charleston, SC, specifically the Army Strategic Logistics Activity Charleston (ASLAC). The installation is being considered for the construction and operation of MRAP vehicle maintenance and storage facilities. This EA evaluates the potential effects on the natural and human environment from activities associated with implementing the proposed action and alternatives at each installation. The intent of the EA is to provide AMC with a planning document that it can use to make stationing and facility placement decisions.

The EA has evaluated potential effects on land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics, traffic and transportation, utilities, and hazardous and toxic substances.

The predicted effects on evaluated resource areas at JB CHAS are summarized below in Table 4.1. The table provides a summary and comparison of the effects of the Preferred Alternative versus the No Action Alternative.

Implementing the project at the Preferred Alternative, would limit impacts to current missions at the ASLAC facility. The Preferred Alternative would be implemented at a location away from current mission functions and proximate to the test track where the MRAPS will be run for maintenance and testing.

The Preferred Alternative Site 5 at ASLAC would be expected to result in short-term insignificant adverse effects on groundwater and surface water, and long-term insignificant adverse effects on wetlands. No adverse effects would be expected on cultural resources at the Preferred Site at ASLAC. Implementing the proposed action at the Preferred Alternative site at ASLAC would not be expected to have any significant effects on the quality of the natural or human environment.

Table 4.1 ASLAC Summary of Potential Environmental and Socioeconomic Consequences		
Resource	Site 5 Preferred Alternative	No Action Alternative
Land Use	No effect	No effect
Aesthetics and Visual Resources	Short-term insignificant adverse Long-term insignificant adverse	No effect
Visual Resources	Short-term insignificant adverse Long-term insignificant adverse	No effect
Air Quality	Short-term insignificant adverse Long-term insignificant adverse	No effect
Noise	Short-term insignificant adverse Long-term insignificant adverse	No effect
Geology/Soils		
Geology/Topography	No effect	No effect
Soils	No effect	No effect
Water Resources		
Groundwater	Short-term insignificant adverse	No effect
Surface water	Short-term insignificant adverse	No effect
Wetlands	Long-term insignificant adverse	No effect
Floodplains	No effect	No effect
Coastal Zone Management	No effect	No effect
Biological resources		
Vegetation	Long-term insignificant adverse	No effect
Wildlife	Long-term insignificant adverse	No effect
Threatened and Endangered Species	No effect	No effect
Cultural Resources	No effect	No effect
Socioeconomics		
Regional Economic Activity	Short-term insignificant beneficial	No effect
Environmental Justice	No effect	No effect
Protection of Children	No effect	No effect
Transportation and Traffic	Short-term insignificant adverse	No effect
Utilities	Short-term insignificant adverse Long-term insignificant adverse	No effect
Hazardous and Toxic Substances	Long-term insignificant adverse	No effect

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6.0 List of Preparers and Contributors

Bill Spoerer, ASLAC, Chief, Risk & Facilities Management Branch

Darryl Freshman, ASLAC, Operations and Project Manager

Earl Folger, JBCHS, 628 CES/CEAN, Storage Tanks

Greg Wahl, USACE – Charleston District, Biologist, Planning & Environmental Branch

Hayes Patterson, JBCHS, 628 CES/CEAN, Environmental Restoration

Joe Tofaute, ASLAC, Risk & Facilities Management Branch, Engineering Technician

Luis R. Classaviles, JBCHS, 628 CES/CEAN, DAFC Chief Environmental Management

Mark Epstein, JBCHS, 628CES/CEAO, Environmental Planning (NEPA)

Terrence Latimer, JCBHS, 628 CES/CEAN, Natural and Cultural Resources Manger

William G. Werrell, JBCHS, 628 CES/CEAO, Community Planner

Colton Bowles, USACE-Charleston District, Plan Formulator

7 ACRONYMS AND ABBREVIATIONS

AMC	Army Materiel Command
ANSI	American National Standard Institute
AQCR	Air-Quality Control Region
AQCR 027	Northeast Plateau Intrastate AQCR
AQCR 199	Charleston Intrastate AQCR
AST	aboveground storage tank
ASLAC	Army Strategic Logistics Activity Charleston
BMP	best management practice
BRAC	Base Realignment and Closing
C	Celsius
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	<i>Code of Federal Regulations</i>
CO ₂	carbon dioxide
COSIS	Care of Supplies in Storage
dB	decibel
dBA	A-weighted decibel
<i>de minimis</i>	of minimal importance
DNL	day-night Sound Level
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EA	environmental assessment
EIFS	Economic Impact Forecast System
EIS	Environmental Impact Statement
EO	executive orders
EPA	U.S. Environmental Protection Agency
ESQD	Explosive Safety Quality Distance
ESA	Endangered Species Act
FNSI	finding of no significant impact
GHG	greenhouse gas
HVAC	heating, ventilation and air conditioning
Hz	hertz
I	Interstate
IPAC	Information, Planning, and Conservation System
JBCHS	Joint Base Charleston
Leq	equivalent sound level
MRAP	mine resistant ambush protected
MMRP	military munitions response program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFA	no further action
NHPA	National Historic Preservation Act
NO _x	oxides of nitrogen

NPDES	National Pollutant Discharge Elimination System
PCPI	per capita personal income
PM2.5	fine particulate matter
PM10	particulate matter
RCRA	Resource Conservation and Recovery Act
RCW	red-cockaded woodpecker
ROI	region of influence
RTV	rational threshold value
SCAPCR	South Carolina Air Pollution Control Regulations
SCDHEC	South Carolina Department of Health and Environmental Control
SF	square feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO2	sulfur dioxide
SOx	oxides of sulfur
SWMU	solid waste management unit
SWPPP	Stormwater Pollution Prevention Plan
TCP	traditional cultural property
TM	technical manual
tpy	tons per year
U.S.C.	<i>United States Code</i>
USACE	U.S. Army Corps of Engineers
USFWS	U. S. Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compounds
WWTP	wastewater treatment plant

Appendix A
Army Operation Order 11-141

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HEADQUARTERS, ARMY SUSTAINMENT COMMAND (ASC)
ROCK ISLAND ARSENAL, ILLINOIS 61299-6500
262400Z JULY 2011

OPORD 118-11, IMPLEMENTATION OF DECISION POINT (DP) 147 (MINE RESISTANT
AMBUSH PROTECTED) MRAP ALLOCATION PLAN OF THE ARMY CAMPAIGN PLAN (ACP)

REFERENCES.

REF/ A/ (U) AMC OPORD 11-141 IMPLEMENTATION OF DECISION POINT (DP) 147 MRAP
ALLOCATION PLAN OF THE ARMY CAMPAIGN PLAN (ACP).

REF/ B/ (U) TM 38-470, STORAGE AND MAINTENANCE OF ARMY PREPOSITIONED
STOCK MATERIEL, 1 DEC 2004.

REF/ C/ (U) AR 750-1, ARMY MATERIAL MAINTENANCE POLICY, 20 SEPT 2007.

REF/ D/ (U) FM 3-35.1 (FM 100-17-1 & FM 100-17-2), PREPOSITIONED OPERATIONS, 1 JUL
2008.

REF/ E/ (U) ALARACT 115/2011 SUBJECT: PRE-DEPLOYMENT TRAINING EQUIPMENT
(PDTE) SUSTAINMENT, P 281259Z MAR 11.

TIME ZONE USED THROUGHOUT THE ORDER: ZULU

1. (U) SITUATION. DEVELOP A PLAN TO RECEIVE, STORE, AND MAINTAIN MRAP
FAMILY OF VEHICLES (FOV) FOR ARMY PREPOSITIONED STOCKS (APS) AND PRE-
DEPLOYMENT TRAINING EQUIPMENT (PDTE).

2. (U) MISSION. ASC WILL DEVELOP A PLAN WHICH PROVIDES A SOLUTION FOR
RECEIVING, STORING, AND MAINTAINING MRAP FOV FORWARD STATIONED WITHIN
APS AND PDTE.

3. (U) EXECUTION.

3.A. (U) COMMANDERS INTENT.

3.A.1. (U) PURPOSE. ASC WILL DEVELOP AN EXECUTABLE PLAN FOR IDENTIFYING,
INSPECTING, RECEIVING, REPAIRING, STORING, MAINTAINING, AND ISSUING MRAP
VEHICLES.

3.A.2. (U) KEY TASKS.

3.A.2.A. (U) CONDUCT TRIAGE OF ALL MRAPS AT APPLICABLE RETROGRADE SITES
AND DIRECT MOVEMENT OF THOSE VEHICLES TO THEIR RESPECTIVE RESET/REPAIR
SITES. FOLLOWING REPAIR TO TM 10/20 STANDARD PLUS UPGRADES, MRAPS WILL
BE SENT TO THE IDENTIFIED STORAGE SITES. SEE ANNEX A FOR BREAKDOWN OF
VARIANTS AND ANNEX B FOR MAINTENANCE AND FIELDING PLAN.

3.A.2.B. (U) PREPARE STORAGE FACILITIES IMMEDIATELY FOR MRAPS. FORWARD
ANY RESOURCE REQUIREMENTS TO ASC G3'S APS DIVISION AND FORWARD ANY OMA
PROJECT REQUIREMENTS TO ASC G4'S FACILITIES DIVISION NLT 13 AUG 11.

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3.A.2.C. (U) PLAN AND EXECUTE MAINTENANCE/COSIS FOR MRAP BRIGADE CONDITION BASED SETS AND PDTE SETS. SEE ANNEX B.

3.A.3. (U) ENDSTATE. PROVIDE AN MRAP FLEET THAT IS PROPERLY ALLOCATED, CONFIGURED, GLOBALLY POSITIONED TO SUPPORT THE FULL RANGE OF ARMY CONTINGENCY OPERATIONS, AND ADDITIONALLY PROVIDE A BCT WORTH OF MRAPS FROM EACH APS LOCATIONS THAT ARE READY AND AVAILABLE FOR MOVEMENT WITHIN 96 HRS.

3.B. (U) CONCEPT OF THE OPERATION. PLAN, PROGRAM, BUDGET, AND EXECUTE (PPBE) THE NECESSARY ACTIONS TO IDENTIFY AND VALIDATE REQUIREMENTS FOR EXECUTION YEARS FY12/13 AND USED TO INFORM PROGRAMMING DEVELOPMENT FOR PROGRAM OBJECTIVE MEMORANDUM (POM) 14-18. PRIORITIZE AND EXECUTE A MAINTENANCE PLAN FOR THE RESET/REPAIR OF THE RETURNING MRAP FLEET, AND DEVELOP A SUSTAINMENT PLAN IN ORDER TO MAINTAIN THE MRAP FLEET IN TM 10/20 STANDARD.

3.C. (U) TASKS TO SUBORDINATE UNITS AND ASC HEADQUARTERS STAFF ELEMENTS.

3.C.1. (U) 406TH AFSB

3.C.1.A. (U) COORDINATE WITH ASC G-4 AND FIELD SUPPORT TO SUPPORT ASC G4 SITE ASSESSMENT VISITS FOR FACILITIES WITHIN 45 DAYS OF RECEIPT OF THIS ORDER.

3.C.1.B. (U) ENSURE MRAPS ARE READY AND AVAILABLE FOR THE LOAD OF APS 3 ARMY STRATEGIC FLOTILLA 1(ASF 1), NLT 1 NOV 12.

3.C.1.C. (U) ICW FIELD SUPPORT APS-3 TEAM LEAD, MR. MICHAEL PRINTER, MICHAEL.J.PRINTER.CIV@MAIL.MIL, PREPARE COURSE OF ACTION ANALYSIS ON THE CONCEPT OF SUPPORT OF CONUS LAND-BASED MRAPS POSITIONED AT CHARLESTON, SC.

3.C.1.D. (U) ICW FIELD SUPPORT, DEVELOP A COMMON OPERATING PICTURE (COP) FOR EACH APS SET TO PROVIDE VISIBILITY OF IMPLEMENTATION OF ASSETS INTO THE PROGRAM. COPS SHOULD INCLUDE A TIMELINE OF KEY EVENTS, TRACKING OF EQUIPMENT ON HAND AGAINST AUTHORIZATIONS, AND ADDRESS FUNDING, TRAINING, TOOLING, CONTRACT ACTIONS AND/OR OTHER ELEMENTS IDENTIFIED AS CRITICAL TO ENSURE SUCCESS. APS AFLOAT REPORTING WILL COMMENCE NLT 5 OCT 11 AND WILL BE PROVIDED TO FIELD SUPPORT MONTHLY THEREAFTER. REPORTING OF CONUS LAND-BASED APS LOCATED IN CHARLESTON, SC WILL COMMENCE NLT 120 DAYS FROM NOTICE OF INITIAL SHIPMENT.

3.C.1.E. (U) IDENTIFY UNFORECASTED EXECUTION YEAR FUNDING REQUIREMENTS TO SUPPORT CONUS LAND-BASED EQUIPMENT LOCATED IN CHARLESTON, SC NLT 30 DAYS FROM NOTICE OF INITIAL SHIPMENT OF MRAPS. RESOURCE REQUIREMENTS

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FOR BUDGET YEAR AND POM SHALL BE INCLUDED IN NORMAL RESOURCE SUMMIT
AND POM SUBMISSIONS.

3.C.1.F. (U) IDENTIFY TRAINING REQUIREMENTS FOR GOVERNMENT PERSONNEL TO
POC LISTED BELOW WITHIN 30 DAYS OF THIS ORDER. ICW FIELD SUPPORT,
COORDINATE WITH JPO MRAP FOR FUNDS AND/OR TRAINING TEAM TO CONDUCT
OPERATOR NEW EQUIPMENT TRAINING (OPNET) AND FIELD LEVEL MAINTENANCE
NEW EQUIPMENT TRAINING (FLMNET) AT APS LOCATION. INCLUDE NUMBER OF
PERSONNEL AND PROPOSED TIMEFRAME FOR COMPLETION.

3.C.1.G. (U) MAINTAIN THE PROPERTY BOOK AND PERFORM MAINTENANCE ON PDTE
MRAPS IAW REF E. ALL NORMAL PDTE REPORTING REQUIREMENTS REMAIN IN
EFFECT.

3.C.1.H. (U) ICW FIELD SUPPORT, COORDINATE WITH JPO MRAP FOR ISSUANCE OF
DIAGNOSTIC TEST SETS AND SPECIAL TOOLS FOR REPAIRS, COSIS, AND UPGRADES
OF THE MRAP FOV. FUTURE SOFTWARE UPGRADES FOR THE MAINTENANCE
SUPPORT DEVICES (MSD) WILL BE PROGRAMMED BY THE APS SITE.

3.C.1.I. (U) ICW ASC G1, IDENTIFY ANY ADDITIONAL MANPOWER REQUIREMENTS AS A
RESULT OF THIS MISSION.

3.C.2. (U) 401ST, 402ND AFSB, 403RD AFSB, AND 405TH AFSB.

3.C.2.A. (U) COORDINATE WITH ASC G-4 AND FIELD SUPPORT TO CONDUCT SITE
ASSESSMENT VISITS AS APPLICABLE FOR FACILITIES WITHIN 45 DAYS OF RECEIPT OF
THIS ORDER.

3.C.2.B. (U) ICW FIELD SUPPORT, DEVELOP A COP TO PROVIDE VISIBILITY OF
IMPLEMENTATION OF ASSETS INTO THE PROGRAM. COP SHOULD INCLUDE A
TIMELINE OF KEY EVENTS, TRACKING OF EQUIPMENT ON HAND AGAINST
AUTHORIZATIONS, AND ADDRESS FUNDING, TRAINING, TOOLING, CONTRACT
ACTIONS AND/OR OTHER ELEMENTS IDENTIFIED AS CRITICAL TO ENSURE SUCCESS.
REPORTING WILL COMMENCE NLT 120 DAYS FROM NOTICE OF INITIAL SHIPMENT OF
MRAPS AND WILL BE PROVIDED TO FIELD SUPPORT MONTHLY THEREAFTER.

3.C.2.C. (U) IDENTIFY ASSOCIATED EXECUTION YEAR FUNDING REQUIREMENTS NLT
30 DAYS FROM NOTICE OF INITIAL SHIPMENT OF MRAPS. FUNDING REQUIREMENTS
FOR BUDGET YEAR AND POM SHALL BE INCLUDED IN NORMAL RESOURCE SUMMIT
AND POM SUBMISSIONS.

3.C.2.D. (U) IDENTIFY TRAINING REQUIREMENTS FOR DEPARTMENT OF CIVILIAN
(DAC) AND HOST-NATION (HN) PERSONNEL TO POC LISTED BELOW WITHIN 180 DAYS
OF THIS ORDER OR UPON NOTICE OF INITIAL SHIPMENT OF MRAPS WHICHEVER
OCCURS FIRST. ICW FIELD SUPPORT, COORDINATE WITH JPO MRAP FOR FUNDS
AND/OR TRAINING TEAM TO CONDUCT OPNET AND FLMNET AT APS LOCATIONS.
INCLUDE NUMBER OF PERSONNEL AND PROPOSED TIMEFRAME FOR COMPLETION.

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3.C.2.E. (U) ICW FIELD SUPPORT, COORDINATE WITH JPO MRAP FOR ISSUANCE OF DIAGNOSTIC TEST SETS AND SPECIAL TOOLS FOR REPAIRS, COSIS, AND UPGRADES OF THE MRAP FOV. FUTURE SOFTWARE UPGRADES FOR THE MSD WILL BE PROGRAMMED BY THE APS SITE.

3.C.3. (U) 404TH AFSB AND 407TH AFSB. MAINTAIN THE PROPERTY BOOK AND PERFORM MAINTENANCE ON PDTE MRAPS IAW REF E. ALL NORMAL PDTE REPORTING REQUIREMENTS REMAIN IN EFFECT.

3.C.4. (U) EXECUTIVE DIRECTOR FOR FIELD SUPPORT.

3.C.4.A. (U) PLAN, COORDINATE, AND CONDUCT SITE ASSESSMENT VISITS WITH ASC G4 AS APPLICABLE FOR FACILITIES.

3.C.4.B. (U) PROVIDE A PLAN FOR ALL ASC SITES TO IDENTIFY, INSPECT, RECEIVE, STORE, MAINTAIN, AND SUSTAIN ALL MRAP FOV WITH ITS GOVERNMENT FURNISHED EQUIPMENT (GFE), BII, AND ASIOE IAW MRAP BREAKDOWN, ANNEX A, NLT 13 AUG 11.

3.C.4.C. (U) COORDINATE WITH JPO MRAP FOR FUNDS TO CONDUCT OPNET AND FLMNET AT APS LOCATIONS.

3.C.4.D. (U) COORDINATE WITH JPO MRAP FOR ISSUANCE OF DIAGNOSTIC TEST SETS AND SPECIAL TOOLS FOR REPAIRS, COSIS, AND UPGRADES OF THE MRAP FOV.

3.C.4.E. (U) FORWARD OMA FACILITY RESOURCE REQUIREMENTS COORDINATED WITH ASC G4 TO HQ AMC G3'S APS DIVISION, AMC G8 AND AMC G4'S FACILITIES DIVISION NLT 12 AUG 11.

3.C.4.F. (U) FURNISH APS LOCATIONS WITH GUIDANCE AND INFORMATION REQUIRED TO PROPERLY EXECUTE ASSIGNED MISSION TO INCLUDE READINESS REPORTING REQUIREMENTS, PROPERTY ACCOUNTABILITY PROCEDURES, AUTHORIZATION DOCUMENTS, ASL/PLL INFORMATION, AND FIELDING TIMELINE.

3.C.5. (U) ASC G-4.

3.C.5.A. (U) PLAN, COORDINATE, AND CONDUCT SITE ASSESSMENT VISITS AS APPLICABLE FOR FACILITIES AT LOCATIONS IN THE 402ND, 403RD, 405TH, AND 406TH AORS. COORDINATION WILL BE COMPLETE WITHIN 45 DAYS OF RECEIPT OF THIS ORDER.

3.C.5.B. (U) ICW HQ AMC G4'S ENVIRONMENTAL DIVISION, INITIATE SITE SPECIFIC NEPA DOCUMENTATION AND OTHER LEGALLY REQUIRED AND MANDATED PERMITS AND/OR REGULATORY AGENCY APPROVALS FOR CONUS INSTALLATIONS RECEIVING MRAPS WITHIN 120 DAYS OF RELEASE OF THE ENVIRONMENTAL DOCUMENTATION PLAN.

3.C.5.C. (U) PROVIDE MILCON RESOURCE ESTIMATES BY SITE WITH BREAKOUT BETWEEN MCA CONSTRUCTION, OMA FUNDED PLANNING/ ENGINEERING/

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ENVIRONMENTAL ASSESSMENTS, OMA FUNDED MILCON/RENOVATION, AND TIMELINES FOR THE RELATED EXECUTION. MCA BUDGET DATA DUE AS SET BY AMC AND HUNTSVILLE DIVISION CORP OF ENGINEERS. OMA PLAN IS DUE NLT 12 AUG 11. SUBMIT DA 1391'S IN ACCORDANCE WITH AR 420-1 AND FORWARD COMPLETED DA 1391S TO AMC, G4, FACILITIES DIVISION, ATTN: PERRY JOHNSON AND G3, APS DIVISION ATTN: JIM DOLLERY OR RAY FIELDS.

3.C.5.D. (U) ICW FIELD SUPPORT, COORDINATE AND EXECUTE R&A VISITS WITH CORPS OF ENGINEERS OR ITS DESIGNATED REPRESENTATIVES AND/OR GOVERNMENT SERVICES ADMINISTRATION WITHIN 60 DAYS OF RECEIPT OF THIS ORDER.

3.C.5.E. (U) WITHIN 60 DAYS OF RECEIPT OF THIS ORDER , IDENTIFY (IAW AR 740-1 CHAPTER 4) REQUIREMENT PREREQUISITE FOR TEMPORARY STORAGE OF GOVERNMENT EQUIPMENT IN GOVERNMENT LEASED FACILITIES AT CHARLESTON UNTIL ALTERNATIVE FACILITIES CAN BE BUILT.

3.C.5.F. (U) FORWARD ANY OMA FACILITY RESOURCE REQUIREMENTS TO ASC FIELD SUPPORT'S APS DIVISION FOR SUBMISSION TO HQ AMC G3'S APS DIVISION, AMC G8 AND AMC G4'S FACILITIES DIVISION NLT 12 AUG 11.

3.D. (U) COORDINATING INSTRUCTIONS.

3.D.1. (U) PHASE I (RECEIVING MRAP FLEET) BEGINS WITH RETROGRADED MRAPS. AS MRAPS ARE RETROGRADED, ASC WILL COLLECT AND IN-PROCESS MRAPS AT THE RETROGRADE PROPERTY ASSISTANCE TEAM (RPAT) YARDS. UPON RECEIPT OF MRAPS, IDENTIFY, INSPECT, AND PROCESS ALL MRAP FOV, GFE, BII, AND ASIOE. AMC WILL PROVIDE THE ASC WITH THE PRIORITY OF FILL. ASC WILL DIRECT MRAPS TO THEIR RESET/REPAIR SITES (SEE ANNEX B) BASED ON AMC GUIDANCE AND THE TRIAGE INSPECTION. ASC AND TACOM WILL ENSURE STORAGE AND MAINTENANCE FACILITIES ARE IDENTIFIED AND PREPARED FOR THE MRAP FLEET.

3.D.2. (U) PHASE II (RESET/REPAIR MRAP FLEET) BEGINS ONCE MRAPS ARE RECEIVED BY THE RESET/REPAIR FACILITY. AFTER WORK IS COMPLETED BY THE RESET/REPAIR FACILITY, THE VEHICLES WILL MEET TM 10/20 STANDARDS WITH ALL UPGRADES (IF AVAILABLE). ALL MRAPS WILL BE IN-PROCESSED AT THE RESET/REPAIR FACILITY AND ACCOUNTED FOR IAW ARMY REGULATIONS.

3.D.3. (U) PHASE III (STORE MRAP FLEET) BEGINS WHEN THE MRAPS ARRIVE AT THEIR STORAGE LOCATION. UPON RECEIPT OF MRAPS, PERFORM THE TECHNICAL INSPECTIONS TO ENSURE ALL SUBSYSTEMS GFE IS AVAILABLE OR ON ORDER WITH VALID REQUISITIONS. ALL VEHICLES AND GFE WILL BE IN-PROCESSED, ACCOUNTED FOR, AND STORED IAW ARMY REGULATIONS.

3.D.4. (U) ANTICIPATE A MISSION UPDATE BRIEF IN MID-AUGUST 2011 TO ASC COMMANDING GENERAL.

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4. (U) SUSTAINMENT. N/A

5. (U) COMMAND AND CONTROL.

5.A. (U) COMMAND. NORMAL COMMAND CHANNELS ARE IN EFFECT.

5.B. (U) SIGNAL. CONFIRM RECEIPT OF THIS MESSAGE WITH ASC EOC, DSN 793-4815
OR (309) 782-4815, ROCK-ASC-COIC@CONUS.ARMY.MIL.

5.C. (U) FIELD SUPPORT POC IS JODY FASKO, DSN 793-7752,
JODY.M.FASKO.CIV@MAIL.MIL.

ACKNOWLEDGE:

FONTAINE
MG

OFFICIAL:
//ORIGINAL SIGNED//
COL SEARS, DAVID M.
DCS G-3/5/7

ANNEXES:
ANNEX A – MRAP BREAKDOWN BY APS SITE
ANNEX B – MAINTENANCE/FIELDING PLAN

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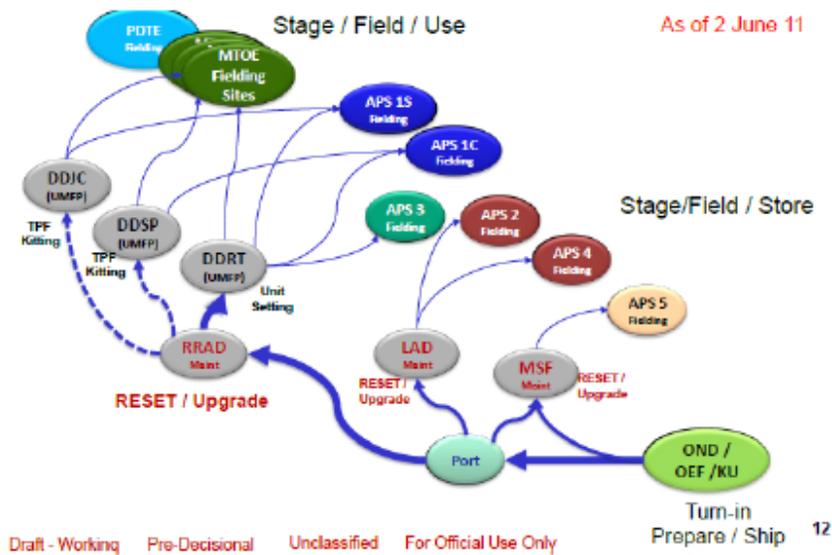
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 OPOD 118-11, IMPLEMENTATION OF DECISION POINT (DP) 147 (MINE RESISTANT
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ANNEX A – MRAP BREAKDOWN BY APS SITE

Model (S/NSUN)	Conditions Based Sets (OP Projects)																				Total					
	CONUS			OCONU	APS 2	APS 3	A FLOAT	APS 4	APS 5							Multi Functional Sets (CONUS)						Varian				
	CHS BCTs	SIA D	SIA D	LIV BCTs	HBCT	ASF-I BCT	ASF-III SB	ASF-IV SB	HBCT	HBCT	IBCT	Inf BN	MT	AUG	T	ENABL	ERS	BFSB (A)	BFSB (R)	CAB		Fires	MEB	Sust	Med	
XM1240 Calman MTV (M39963)	290	145	84	144	121	24			121	121	24	17				32								250	1373	
XM1240 Calman MTV AMB	38	19	44	24	15	4	2	2	17	15	4		4	5								12			96	301
RG-31 (M17526)			33					4												216		16	148		417	
MaxxPro Plus (M11683)	772	386	105	1662	109	277			109	109	277	32		37	119										3994	
MaxxPro Plus AMB (M11615)	78	39	48	90	24	15			24	24	15			27				4	4						392	
MaxxPro Dash ISS (M11819)			114					12	12								289	64	64		478				1033	
M-ATV Troop (M11442)	532	344	308	1008	72	168	72	68	72	72	168	65	28	18	55	165		154	154		116				3639	
MaxxPro Dash ISS AMB (YF5502)	35	22	0	96		16					16	8		7											200	
MRAP Recovery Veh (YF5005)	35		13	60	7	10			7	7	10	2		2	4	9		4	4	4	12		5		195	
	1780	955	749	3084	348	514	90	82	350	348	514	124	32	96	210	463		226	226	220	618	16	403	96	11544	
	1780	1704		3432				686		350				1787												
Total # of MRAPs in BCTs and M	11544																									
PDTE	1989								Livorno				3432	VWR2				APS-4		350			VWR4			
MTOE Units	2818								Charleston Afloat			686	VWR3					APS-5		1787			possibly move 902 to Live			
Tot MRAPs	16351								Charleston Land Base			3585	VWR3										VWR5 and VWR2			
									SIAD			1704	VWR1													
CONUS	HBCT	IBCT	SBCT	BFSB(A)	BFSB(R)	CAB	Fires	MEB	Sust	Medical															as of: 12 July 11	
Charleston	2	2	1	1	1	4	2	4	1	1																
Livorno		6																								
Sierra Army Depot	1	1	2																							
OCONU	3	2																								
	6	11	3																							

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ANNEX B – MAINTENANCE/FIELDING PLAN



APPENDIX B

MRAP Vehicle Variants and Technical Specifications

XM1240 Caiman MTV and AMB

Two variants of the Caiman are listed – The XM1240 Caiman MTV and the XM 1240 Caiman MTV Ambulance. The differences between the two variants are insignificant for the purposes of this assessment thus the two are treated as one. Caimans are produced by BAE Tactical Vehicle Systems (BAE-TVS). The XM1240 Caiman MTV is built from existing stocks of the original Caiman 6x6 Category I vehicles. The Caiman MTV includes significant improvements to the suspension to allow all terrain use and more powerful drive train. These modifications increase the height and weight over the original systems.



Technical Data for XM1240 Caiman MTV and AMB	
Requested Data	Response
Length of vehicle	324"
Width of vehicle	132" (with EFP armor)
Height of vehicle	117" (not including OGPK)
Curb weight w/o fuel	51,500 lbs.
Ground pressure for highway/stored configuration	52 psi
Engine type and emission standards to which certified	Caterpillar C9; EPA Tier 3 (commercially), unknown if certified in this app.
List of hazardous material such as petroleum, oil, and lubricants (POL) products that will be in the vehicles during storage/maintenance	All fluids necessary for running order (engine oil, fuel, transmission, differentials, hydraulic, etc., as specified in the technical manuals)
Fuel and oil capacities	Fuel: 74 gal.; Engine Oil: 34 qts.
List of hazardous materials that will be used during in-storage maintenance actions	See above
85db noise contour data at low idle and high idle	Caiman meets the 85db requirement on low idle only; high idle contour detail not available

RG-31

The RG-31 Mk5E is produced by General Dynamics Land Systems – Canada (GDLS-C) in London, Ontario Canada. The RG31 is a 4x4 vehicle designed for on-road and off road use. The 5E model is an extended hull variant of the original COTS system. RG31 5E is used by the US Army and SOCOM. Pictured is a standard RG31.



Technical Data for RG-31				
Requested Data	DO3	DO4	DO7	DO5/DO9
Length of vehicle	268 in. (6.8 m)	268 in. (6.8 m)	275 in. (7.0 m)	257.5 in. (6.5 m)
Width of vehicle	98 in. (2.5 m)	98 in. (2.5 m)	102 in. (2.6 m)	107 in. (2.7 m)
Height of vehicle	107 in. (2.7 m)	107 in. (2.7 m)	110 in. (2.8 m)	120.3 in. (3.0 m)
Curb weight w/o fuel	31,647 lbs	31,647 lbs	37,479 lb (17,000 kg)	36,486 (16,550 kg)
Ground pressure for highway/stored configuration	56 lbs/in ²	56 lbs/in ²	71 lbs/in ²	44 lbs/in ²
Engine type and emission standards to which certified	Cummins Q5B 6.7 (275 HP)	Cummins Q5B 6.7 (275 HP)	Cummins Q5B 6.7 (300 HP)	Cummins Q5B 6.7 (300 HP)
List of hazardous material such as petroleum, oil, and lubricants (POL) products that will be in the vehicles during storage/maintenance	Engine Oil (15W40), GEAR OIL, (80W90), Transmission Oil (TES-295), Antifreeze, Steering Fluid (TES-295), Winch Oil, SAE 140 EP	Engine Oil (15W40), GEAR OIL, (80W90), Transmission Oil (TES-295), Antifreeze, Steering Fluid (TES-295), Winch Oil, SAE 140 EP	Engine Oil (15W40), GEAR OIL, (80W90), Transmission Oil (TES-295), Antifreeze, Steering Fluid (TES-295), Winch Oil, SAE 140 EP	Engine Oil (15W40), GEAR OIL, (80W90), Transmission Oil (TES-295), Antifreeze, Steering Fluid (TES-295), Winch Oil, SAE 140 EP
Fuel and oil capacities	51-gal (193-L), 18.5 qt (17.5 L)			
List of hazardous materials that will be used during in-storage maintenance actions	Engine Oil (15W40), GEAR OIL, (80W90), Transmission Oil (TES-295), Antifreeze, Steering Fluid (TES-295), Winch Oil, SAE 140 EP	Engine Oil (15W40), GEAR OIL, (80W90), Transmission Oil (TES-295), Antifreeze, Steering Fluid (TES-295), Winch Oil, SAE 140 EP	Engine Oil (15W40), GEAR OIL, (80W90), Transmission Oil (TES-295), Antifreeze, Steering Fluid (TES-295), Winch Oil, SAE 140 EP	Engine Oil (15W40), GEAR OIL, (80W90), Transmission Oil (TES-295), Antifreeze, Steering Fluid (TES-295), Winch Oil, SAE 140 EP
85db noise contour data at low idle and high idle	69 kPa (10 psi), 380 kPa (55 psi)	69 kPa (10 psi), 380 kPa (55 psi)	69 kPa (10 psi), 380 kPa (55 psi)	69 kPa (10 psi), 380 kPa (55 psi)

MaxxPro Plus

The MaxxPro Plus is an upgrade variant of the original Maxx Pro produced by Navistar Defense. The Plus variant provides significant improvements in armor and the capacity for added mission specific protection. MaxxProPlus carries a crew of two plus six passengers and a gunner as opposed to the Dash's capacity of four passengers. The MaxxPro Plus is larger than the Max Pro Dash and weighs more than either the Dash or the original Maxx Pro. The MaxxPro Plus AMB utilizes the same features as the MaxxPro Plus; however, the interior is configured to accommodate wounded soldiers and associated medical equipment.



Technical Data for MaxxPro Plus ISS/AMB	
Requested Data	Response
Length of vehicle	260"
Width of vehicle	120" (w/ EFP Armor)
Height of vehicle	159" (w/ OGPK)
Curb weight w/o fuel	44,530 lbs
Ground pressure for highway/stored configuration	43 psi
Engine type and emission standards to which certified	MaxxForced / D9.3 I6 International DT570 engine
List of hazardous material such as petroleum, oil, and lubricants (POL) products that will be in the vehicles during storage/maintenance	All typical operational fluids (engine oil, fuel, differential, fire suppression, etc.) as found in the Technical Manuals
Fuel and oil capacities	Fuel: 57 gal.; Engine Oil: 30 qts.
List of hazardous materials that will be used during in-storage maintenance actions	See above
85db noise contour data at low idle and high idle	MaxxPro is below the 85db requirement on both low and high idle

MaxxPro Dash

The MaxxPro Dash is built by Navistar Defense in Warrenville, IL. Dash is a smaller, lighter weight version of the original Navistar MaxxPro MRAP vehicles. MaxxPro Dash is a COTS 4x4 vehicle with four wheel independent suspension for on and off-road stability.



Technical Data for MaxxPro Dash ISS	
Requested Data	Response
Length of vehicle	254"
Width of vehicle	106" (w/o EFP Armor)
Height of vehicle	143" (incl. OGPK)
Curb weight w/o fuel	37,300 lbs.
Ground pressure for highway/stored configuration	49 psi
Engine type and emission standards to which certified	MaxxForceD / D9.3 I6 International DT570 engine
List of hazardous material such as petroleum, oil, and lubricants (POL) products that will be in the vehicles during storage/maintenance	All typical operational fluids (engine oil, fuel, differential, fire suppression, etc.) as found in the Technical Manuals
Fuel and oil capacities	Fuel: 57 gal.; Engine Oil: 30 qts.
List of hazardous materials that will be used during in-storage maintenance actions	See above
85db noise contour data at low idle and high idle	MaxxPro is below the 85db requirement on both low and high idle

M-ATV

The MATV was purpose built by Oshkosh Truck Corporation for off-road use. The first M-ATVs were issued to combat units in Afghanistan in December 2009, just 160 days after contract award. The fielding of these provided the Warfighters with a highly survivable and off-road-capable vehicle. In addition to its ability to traverse a wide variety of terrain, its speed transforms it from simply a means of transportation to an offensive capability. The lighter weight and smaller size also lend the vehicle to somewhat easier transportability. The M-ATV can carry up to five personnel—four plus a gunner. The MATV AMB meets the same performance points as the standard MATV, but it is a fully functional ambulance with medical equipment and supplies and room to care for wounded soldiers.



Technical Data for M-ATV Troop and AMB	
Requested Data	Response
Length of vehicle	246.4 in
Width of vehicle	100.2 in
Height of vehicle	129.1 in with OGPK, no OPC
Curb weight w/o fuel	28,517 lbs (includes BII)
Ground pressure for highway/stored configuration	37.9 psi average (across four tire locations) nominal ground pressure
Engine type and emission standards to which certified	Caterpillar C7 – this engine was neither tested nor certified to any EPA standard due to the omission of a catalytic converter (for JP8 use) and specific fuel mapping designed by Caterpillar to achieve 370 hp.
List of hazardous material such as petroleum, oil, and lubricants (POL) products that will be in the vehicles during storage/maintenance	USMC, Navy, and Air Force procedure will be to drain all fluids except the following: <ol style="list-style-type: none"> 1. R134 refrigerant 2. AFES fire suppression fluid 3. MIL-G-10924 bearing grease
Fuel and oil capacities	<ol style="list-style-type: none"> 1. Fuel: 47 Gal 2. engine oil: 5.0 gallons 3. transmission: 6.5 gallons 4. differentials: 2.625 gallons each 5. transfer case: 1.4 gallons
List of hazardous materials that will be used during in-storage maintenance actions	The USMC will not employ "Biobor JF" or other fuel and oil stabilizing additives per manual procedures since all fluids will be drained prior to long term storage. No Hazardous materials are necessary for in-storage maintenance.
85db noise contour data at low idle and high idle	TARDEC data from testing MATV with and without muffler <ol style="list-style-type: none"> a. without muffler at idle, 58.8 dB – at High idle, 65.4 dB b. with muffler at idle, 56.7 dB – at High idle, 64.7 dB

MRAP Recovery Vehicle

The Recovery Vehicles are most likely the MaxxPro Towing and Recovery variant of the MaxxPro Utility vehicle series built by Navistar. These 6x6 vehicles are derived from commercial systems with MRAP protection for the crew cab with ballistic armor and v-shaped hulls. The Maxx Pro Recovery vehicles can recover all variants of MRAP.



Technical Data for MRV (NO trailer)	
Requested Data	Response
Length of vehicle	410"
Width of vehicle	102"
Height of vehicle	119"
Curb weight w/o fuel	58,350 lbs.
Ground pressure for highway/stored configuration	Not yet studied
Engine type and emission standards to which certified	MaxxForceD / D9.3 I6 International DT570 engine
List of hazardous material such as petroleum, oil, and lubricants (POL) products that will be in the vehicles during storage/maintenance	All typical operational fluids (engine oil, fuel, differential, fire suppression, etc.) as found in the Technical Manuals
Fuel and oil capacities	Fuel: 57 gal.; Engine Oil: 30 qts.
List of hazardous materials that will be used during in-storage maintenance actions	See above
85db noise contour data at low idle and high idle	MaxxPro is below the 85db requirement on both low and high idle

APPENDIX C
COORDINATION AND CONSULTATION
CORRESPONDENCE

December 20, 2011

Planning and Environmental Branch

Mr. Jay Herrington
Field Supervisor
Fish and Wildlife Service
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

Dear Mr. Herrington:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at *Gregory.t.wahl@usace.army.mil*.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Ms. Carolyn Boltin, Deputy Commissioner
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405

Dear Ms. Boltin:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at Gregory.t.wahl@usace.army.mil.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Mr. Bob Perry
Director of Environmental Programs
South Carolina Department of Natural Resources
P. O. Box 167
Columbia, South Carolina 29202

Dear Mr. Perry:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at Gregory.t.wahl@usace.army.mil.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Mr. Heinz Mueller
Office of Policy Management, NEPA Office
US EPA, Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

Dear Dr. Mueller:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at Gregory.t.wahl@usace.army.mil.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Dr. Pace Wilbur
Habitat Conservation Division
National Marine Fisheries Service
219 Fort Johnson Road
Charleston, South Carolina 29412-9110

Dear Dr. Wilbur:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at Gregory.t.wahl@usace.army.mil.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Dr. Rodger Stroup, Director
SC Department of Archives & History
8301 Parklane Road
Columbia, SC 29223

Dear Dr. Stroup:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at Gregory.t.wahl@usace.army.mil.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Ms. Susan Davis
S.C. Department of Natural Resources
P. O. Box 12559
Charleston, SC 29412

Dear Ms. Davis:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at Gregory.t.wahl@usace.army.mil.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Mr. Chuck Hightower, Manager
Water Quality Cert. and Wetlands Section
SC Dept. of Health and Env. Control
2600 Bull Street
Columbia, SC 29201

Dear Mr. Hightower:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at Gregory.t.wahl@usace.army.mil.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Mr. Robert Brown
Bureau of Air Quality - DAPDO
SC Dept. of Health and Env. Control
2600 Bull Street
Columbia, SC 29201

Dear Mr. Brown:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at (843) 329-8130 or by e-mail at Gregory.t.wahl@usace.army.mil.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure

December 20, 2011

Planning and Environmental Branch

Mr. Ben Morgan
SC State Ports Authority
PO Box 22287
Charleston, SC 29413-2287

Dear Mr. Morgan:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regards to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements and mandate of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located at the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Please provide comments by January 31, 2012.

If you have any questions about the proposed project, please contact Mr. Greg Wahl of my staff by telephone at 843.329.8130 or by e-mail at *Gregory.t.wahl@usace.army.mil*.

Respectfully,

Patrick O'Donnell
Chief, Planning and Environmental Branch

Enclosure



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

August 26, 2013

Planning and Environmental Branch

Emily K. Dale
Archaeologist/GIS Coordinator
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223

Dear Ms. Dale:

The US Army Corps of Engineers, Charleston District (The Corps), is in the process of drafting an Environmental Assessment (EA) in regard to 1.7 million square feet of warehouse space being proposed for construction at the U.S. Air Force's Joint Base Charleston (JBC). The EA will be used to meet the requirements of the National Environmental Policy Act (NEPA).

The Army Strategic Logistics Activity-Charleston (ASLAC)-Mine Resistant Ambush Protected (MRAP) project would consist of constructing 13 separate warehouses to store and maintain approximately 3,700 vehicles. The projected area for land disturbance would be approximately 94.5 acres, located within the very northern portion of JBC which was formally known as the Naval Weapons Station, Berkeley County, South Carolina. The center of the 1000' x 4117' ASLAC-MRAP facility would be located at 33° 0'55.46"N, 79°57'54.89"W (Site 5, preferred area). An alternative site is also being considered for this project, with approximately the same area and dimensions, located at 33° 0'12.29"N, 79°57'27.18"W (Site 4.5). Please reference the enclosure for site details.

We are in the process of conducting an Environmental Assessment for this project. Our preliminary findings are that the proposed project does not significantly adversely affect human health and welfare or the environment, and, therefore, preparation of an Environmental Impact Statement is not warranted. Pursuant to Section 106 of the National Historic Preservation Act, please provide information regarding any historic properties of religious and cultural significance that may be affected by the proposed project. Please provide comments by September 15, 2013.

If you have any questions about the proposed project, please contact Colt Bowles of my staff by telephone at (843) 329-8051 or by e-mail at colton.b.bowles@usace.army.mil

Respectfully,

A handwritten signature in blue ink, appearing to read "Bret Walters".

Bret Walters
Chief, Planning and Environmental Branch

Enclosure



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 628TH AIR BASE WING (AMC)
JOINT BASE CHARLESTON SC**

Colonel Jeffrey W. DeVore
Commander, Joint Base Charleston
102 East Hill Blvd, Suite 100
Joint Base Charleston SC 29404-5004

Catawba Indian Nation
Chief William (Bill) Harris
966 Avenue of the Nations
Rock Hill SC 29730

RE: Installation Development at Joint Base Charleston Facilities in Charleston, Berkeley, and Orangeburg Counties of South Carolina

Dear Chief Harris

I am writing to initiate formal Government-to-Government consultations to meet the requirements of Section 106 of the National Historic Preservation Act of 1966 (16 USC 407f), the National Environmental Policy Act (NEPA), the Native American Grave Protection and Repatriation Act of 1990 (25 USC 3001-3013), and Executive Order 13175 regarding future Installation Development undertakings with the potential to impact sites of religious or cultural significance within and/or adjacent to the boundaries of Joint Base Charleston (JB CHS) facilities.

As noted in correspondence sent to your office on March 14, 2013, JB CHS is preparing an Environmental Assessment in accordance with the National Environmental Policy Act to analyze the potential environmental impacts from continuing installation development at the JB CHS Air Base (JB CHS-AB, Charleston County), JB CHS Weapons Station (JB CHS-WS, Charleston County and Berkeley County), and North Auxiliary Air Field (NAAF, Orangeburg County).

In accordance with 36 Code of Federal Regulation 800.4, the Department of Defense has conducted numerous basewide and project specific surveys to identify historic properties and sites on JB CHS. In 1984, the National Park Service (NPS) conducted a basewide preliminary cultural resource survey of JB CHS-AB and NAAF. A subsequent survey of approximately 1,150 undeveloped acres at NAAF resulted in the discovery of 6 prehistoric campsites and 11 historical archeological sites. None of the 17 sites are considered eligible for inclusion in the National Register of Historic Places (NRHP). Fifteen separate archaeological surveys of JB CHS-WS lands were conducted from 1994 to the present. Ninety-five percent of the lands of JB CHS-WS that possess the potential for intact archaeological resources have been surveyed. Eight archaeological sites were found that are individually eligible for listing in the NRHP.

There are also 2 NRHP-eligible archaeological historic districts (Foster Creek Discontiguous Historic District and Parnassus Plantation Discontiguous Historic District) containing 11 contributing sites, including 3 that are also individually eligible. Nine archaeological sites are present at JB CHS-WS that require further work to determine their eligibility status. No Traditional Cultural Properties (TCP) or Native Indian sacred sites were identified during any of the surveys on JB CHS facilities.

No Installation Development projects are proposed in any areas where known archaeological resources are present. If any unanticipated discoveries of TCP occur, work will be temporarily halted and the procedures outlined in the JB CHS Integrated Cultural Resources Management Plan, Standard Operating Procedure #5 will be followed. Specifically, for discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony, the JB CHS Cultural Resources Manager will be contacted and all appropriate measures will be implemented to protect the remains and any other protected cultural items. JB CHS will immediately inform you of the discovery and invite you to assist in the evaluation of those resources and implementation of procedures to minimize adverse impacts.

Based on the above information, it is our conclusion that implementation of future installation development undertakings will not have an adverse affect on any TCPs or Native Indian sacred sites on or adjacent to JB CHS. I request your input regarding knowledge of any properties on JB CHS of religious or cultural significance that could be affected by future implementation of installation development proposed actions. I would also like to determine if the Catawba Indian Nation has a cultural or historical affiliation with the lands of JB CHS or if tribal treaty rights or other rights to natural resources potentially could be affected. In that respect, please identify any potential sites on or adjacent to the three distinctly separate JB CHS facilities shown on the attached maps. I understand that there may be concerns regarding the confidentiality of information on resources of religious, traditional, and cultural importance. In that event, please contact my designees below to develop procedures to maintain the confidentiality of such information. If applicable to the Catawba Indian Nation, I respectfully request your written concurrence with our conclusion that implementation of future installation development undertakings will not have an adverse affect on any TCPs or Native Indian sacred sites on or adjacent to JB CHS.

I have appointed two JB CHS staff members to act as agents for JB CHS to execute routine tribal consultations. I respectfully request that you authorize your Tribal Historic Preservation Officer (THPO) or another representative to work directly with them to meet the legal objectives defined by law. My appointed individuals are Mr. Mark Epstein and Mr. Terrence Larimer.

In furtherance of establishing a respectful and open relationship, I welcome you and your staff to visit Joint Base Charleston facilities to become familiar with our location and operations. We are happy to help you determine if any TCP, sacred sites, or resources of interest to the Catawba Indian Nation are present on JB CHS.

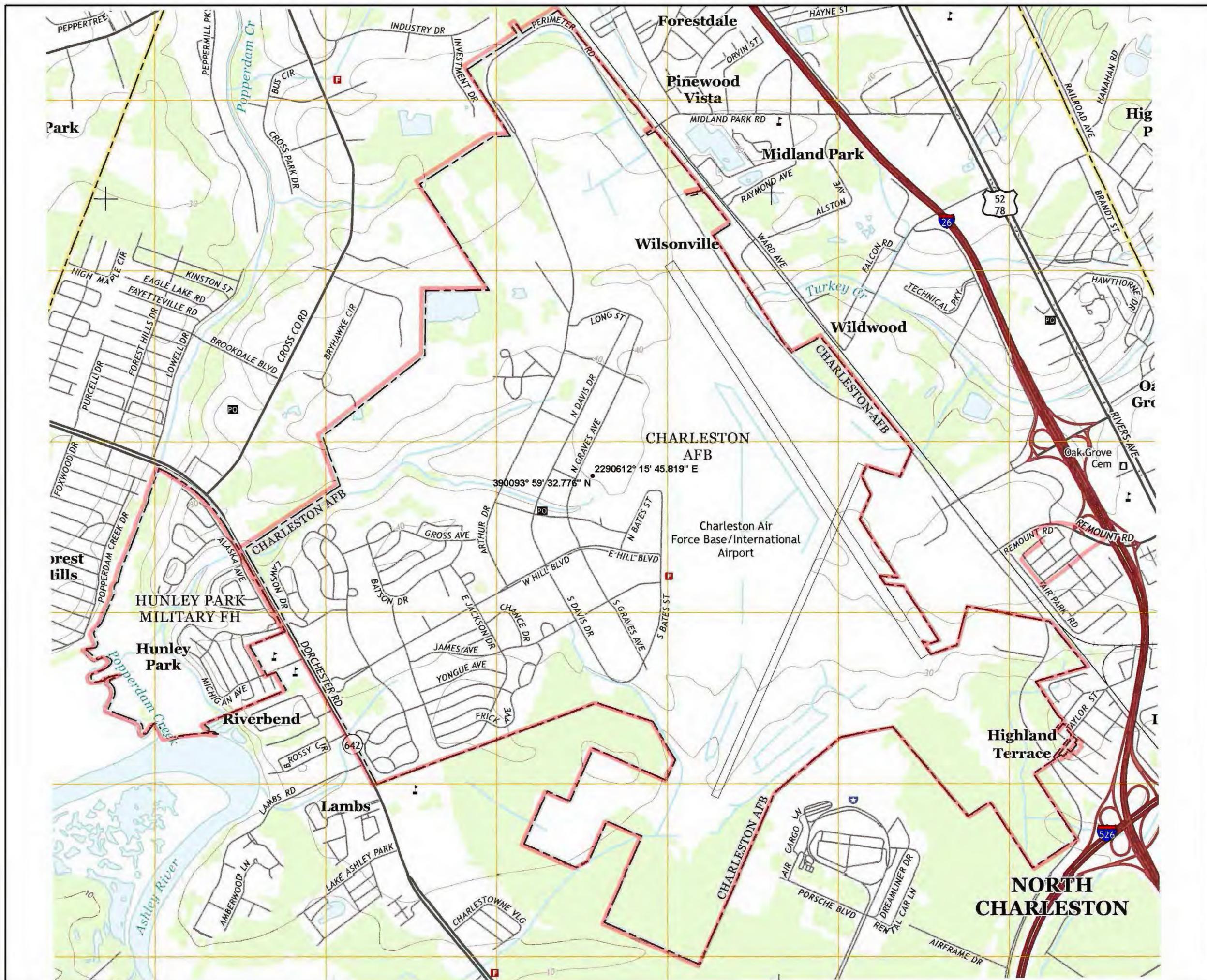
We look forward to hearing from you and your staff. If you have any questions, you may contact me at (843) 963-3419.

Sincerely

JEFFREY W. DEVORE, Colonel, USAF
Commander

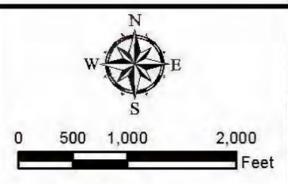
Attachment:
JB CHS Property Maps

Attachment
JB CHS Property Maps



Legend
 Installation Boundary

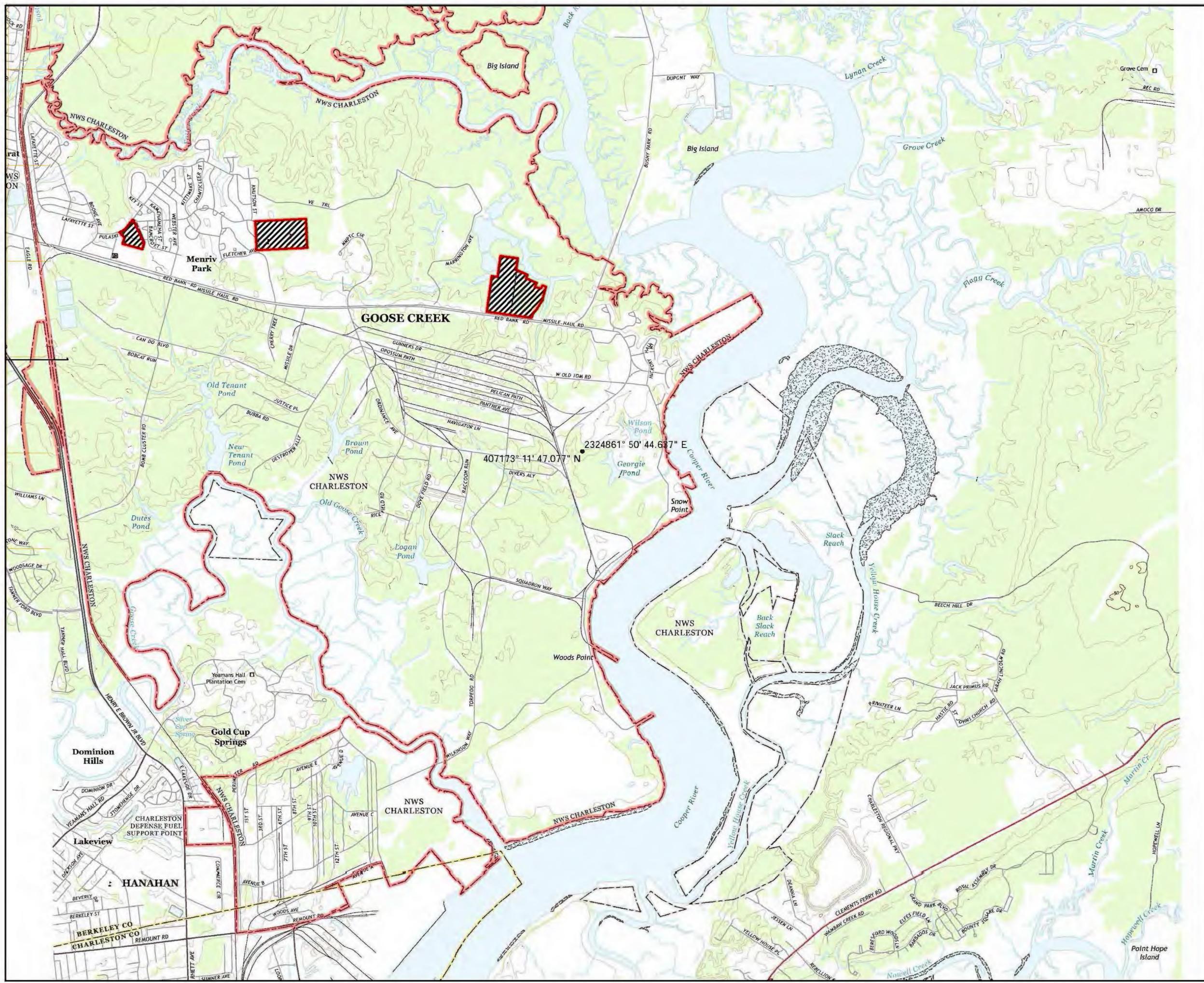
USGS
 Ladson Quad Map
 JB Charleston-AB



COORDINATE SYSTEM: SC STATE PLANE FIPS 3900
 DATUM: NAD 1983
 UNITS: FEET

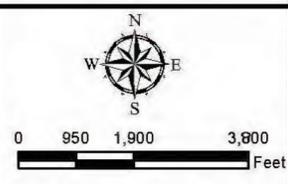
DEPARTMENT OF THE AIR FORCE
Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA
 COMMON INSTALLATION PICTURE (CIP)

628 CIVIL ENGINEER SQUADRON
 Site Development Office
 FOR OFFICIAL USE ONLY
 SCALE: 1" = 1,100' DATE: AUG 2014



Legend
 Berkeley County Property
 Installation Boundary

USGS
 N. Charleston Quad Map
 JB Charleston - NWS



COORDINATE SYSTEM : SC STATE PLANE FIPS 3900
 DATUM : NAD 1983
 UNITS : FEET

DEPARTMENT OF THE AIR FORCE

Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA

COMMON INSTALLATION PICTURE
 (CIP)

828 CIVIL ENGINEER SQUADRON
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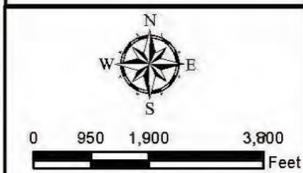
SCALE: 1" = 1,991' DATE: AUG 2014



Legend

- Berkeley County Property
- Installation Boundary

USGS
Kittredge Quad Map
JB Charleston - NWS



COORDINATE SYSTEM : SC STATE PLANE FIPS 3900
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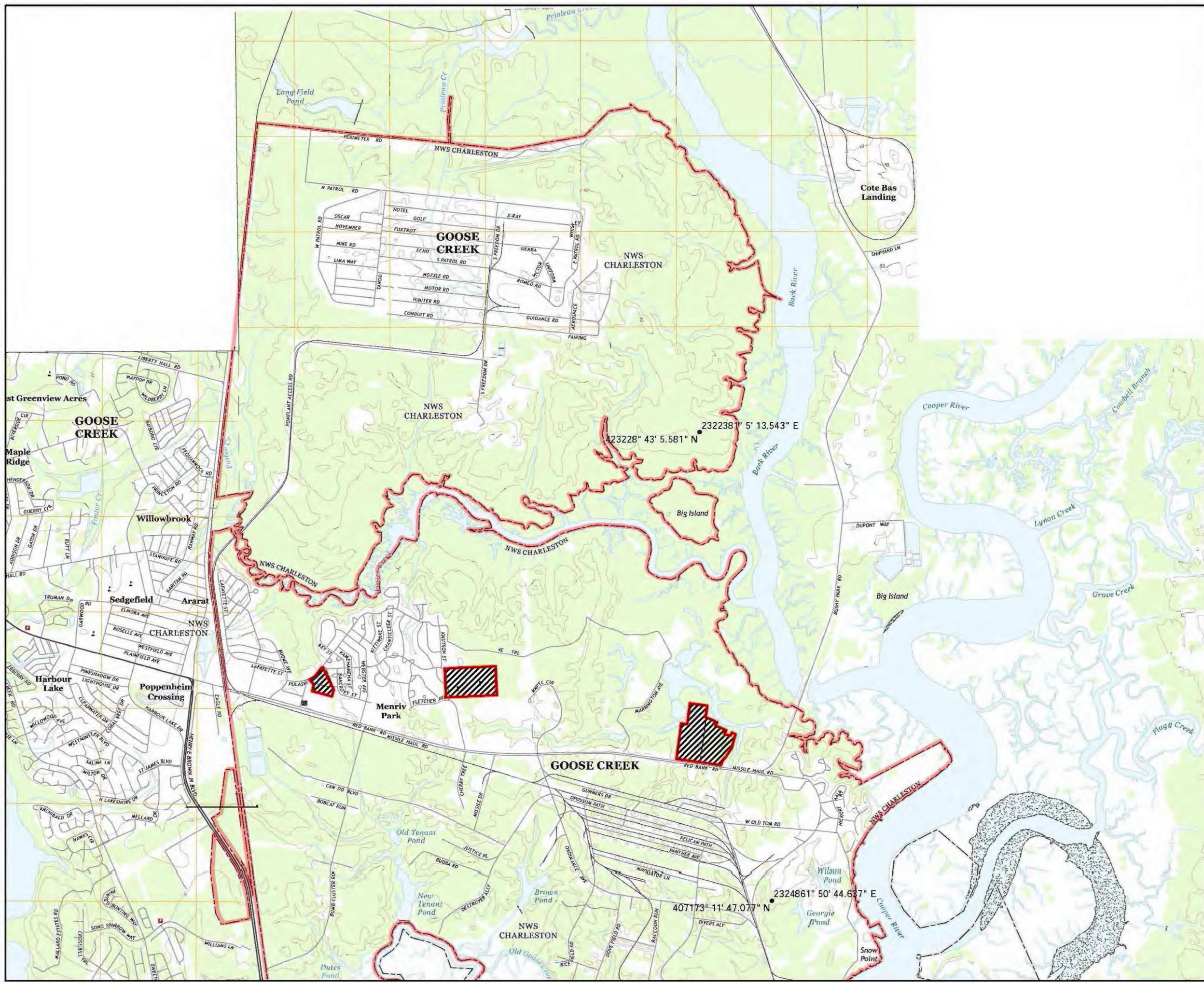
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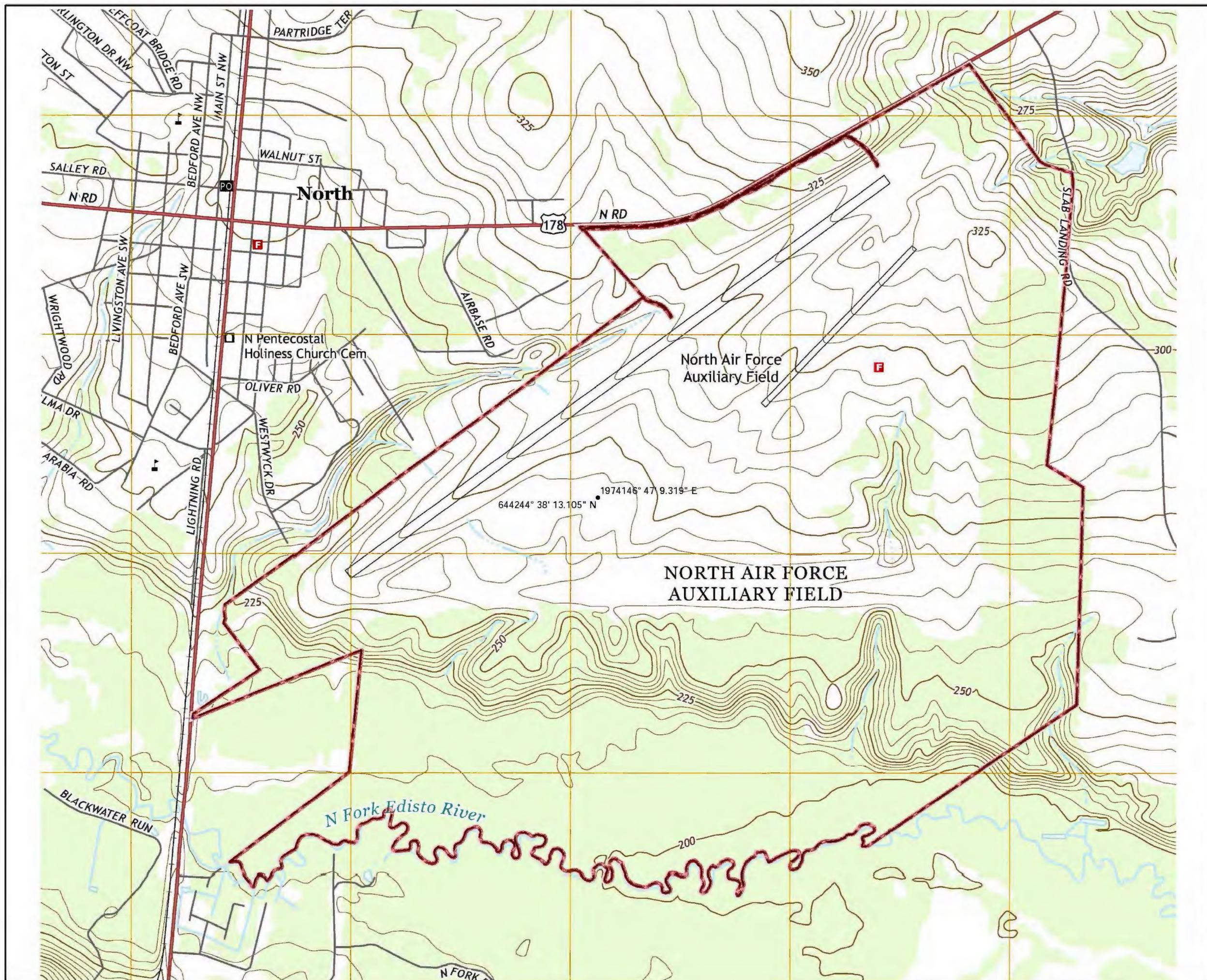
Joint Base Charleston
CHARLESTON, SOUTH CAROLINA

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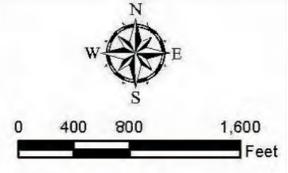
SCALE: 1" = 1,991' DATE: AUG 2014





Legend
 Installation Boundary

USGS
 North Quad Map
 JB Charleston - NAAF



COORDINATE SYSTEM: SC STATE PLANE FIPS 3900
 DATUM: NAD 1983
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DEPARTMENT OF THE AIR FORCE
 Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA
 COMMON INSTALLATION PICTURE (CIP)

828 CIVIL ENGINEER SQUADRON
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Belvedere Estates
AVALON IN THE PINES
Hannah

CHARLESTON AIRFIELD

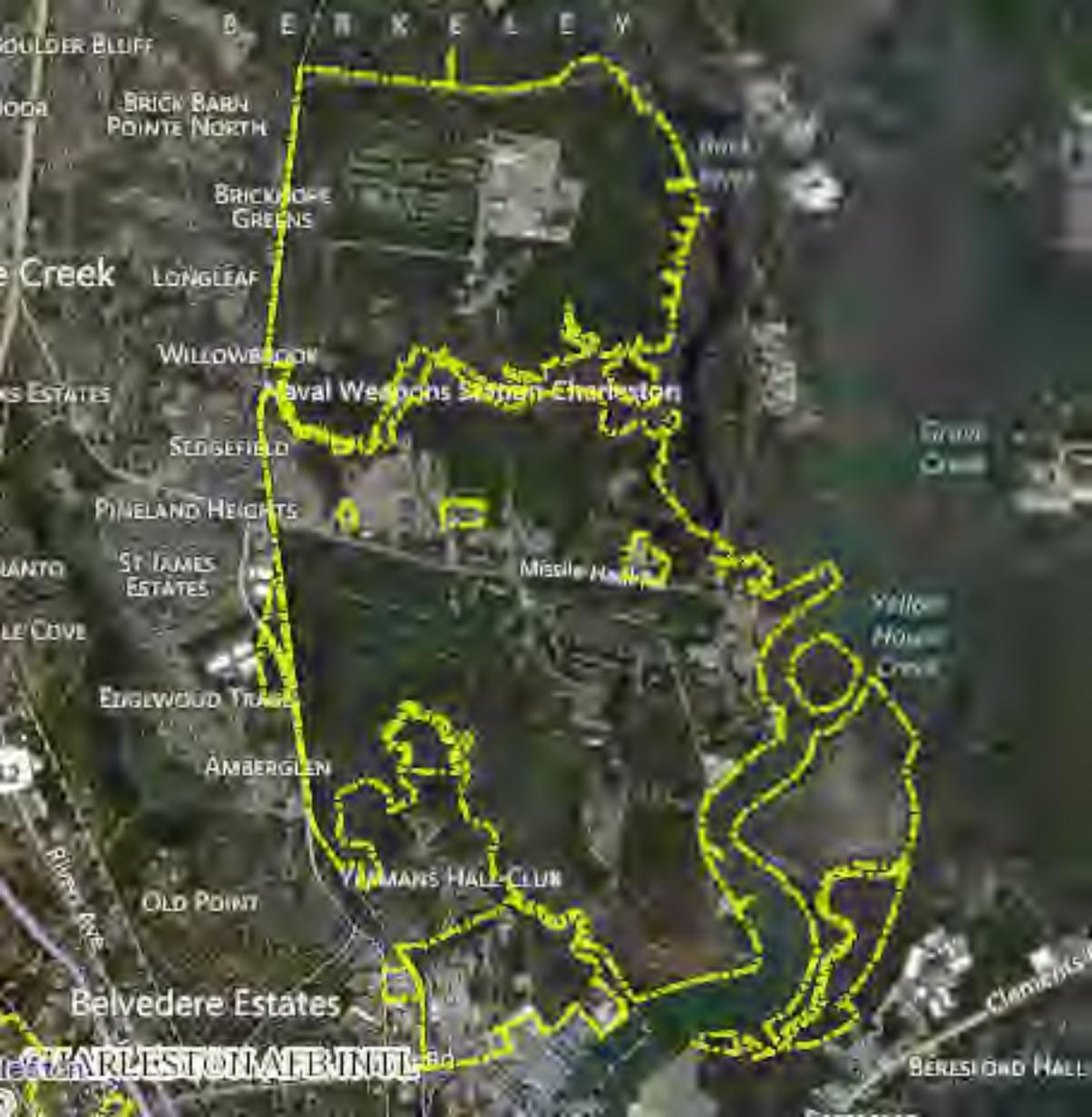
Joint Base Charleston

Wrenwoods Golf Course

Charleston Air Force Base

SOUTH CHARLESTON OUTSIDE MARK CLARK

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BOULDER BLUFF

B E R K E L E Y

MODA

BRICK BARN
POINTE NORTH

BRICK HOPE
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e Creek

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ES ESTATES

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OLD POINT

WILMANS HALL CLUB

Belvedere Estates

CHARLESTON AIRFIELD

Clematis St

BERESFORD HALL



NORTH AF AUX

North Army Air Base

321

178

321

Livingston Pond

N Fork Rd

Pond Bluff Rd

Summer Camp Rd

Slab Landing Rd

Forrestre

North Rd

North Rd

Potomac Ln

Holland St

Westwick Dr

Savannah Hwy

Savannah Hwy

Alma Dr

ton St

Partridge



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 628TH AIR BASE WING (AMC)
JOINT BASE CHARLESTON SC**

Colonel Jeffrey W. DeVore
Commander, Joint Base Charleston
102 East Hill Blvd, Suite 100
Joint Base Charleston SC 29404-5004

Eastern Shawnee Tribe of Oklahoma
Chief Glenna J Wallace
P. O. Box 350
Seneca MO 64865

RE: Installation Development at Joint Base Charleston Facilities in Charleston, Berkeley, and Orangeburg Counties of South Carolina

Dear Chief Wallace

I am writing to initiate formal Government-to-Government consultations to meet the requirements of Section 106 of the National Historic Preservation Act of 1966 (16 USC 407f), the National Environmental Policy Act (NEPA), the Native American Grave Protection and Repatriation Act of 1990 (25 USC 3001-3013), and Executive Order 13175 regarding future Installation Development undertakings with the potential to impact sites of religious or cultural significance within and/or adjacent to the boundaries of Joint Base Charleston (JB CHS) facilities.

As noted in correspondence sent to your office on March 14, 2013, JB CHS is preparing an Environmental Assessment in accordance with the National Environmental Policy Act to analyze the potential environmental impacts from continuing installation development at the JB CHS Air Base (JB CHS-AB, Charleston County), JB CHS Weapons Station (JB CHS-WS, Charleston County and Berkeley County), and North Auxiliary Air Field (NAAF, Orangeburg County).

In accordance with 36 Code of Federal Regulation 800.4, the Department of Defense has conducted numerous basewide and project specific surveys to identify historic properties and sites on JB CHS. In 1984, the National Park Service (NPS) conducted a basewide preliminary cultural resource survey of JB CHS-AB and NAAF. A subsequent survey of approximately 1,150 undeveloped acres at NAAF resulted in the discovery of 6 prehistoric campsites and 11 historical archeological sites. None of the 17 sites are considered eligible for inclusion in the National Register of Historic Places (NRHP). Fifteen separate archaeological surveys of JB CHS-WS lands were conducted from 1994 to the present. Ninety-five percent of the lands of JB CHS-WS that possess the potential for intact archaeological resources have been surveyed. Eight archaeological sites were found that are individually eligible for listing in the NRHP.

There are also 2 NRHP-eligible archaeological historic districts (Foster Creek Discontiguous Historic District and Parnassus Plantation Discontiguous Historic District) containing 11 contributing sites, including 3 that are also individually eligible. Nine archaeological sites are present at JB CHS-WS that require further work to determine their eligibility status. No Traditional Cultural Properties (TCP) or Native Indian sacred sites were identified during any of the surveys on JB CHS facilities.

No Installation Development projects are proposed in any areas where known archaeological resources are present. If any unanticipated discoveries of TCP occur, work will be temporarily halted and the procedures outlined in the JB CHS Integrated Cultural Resources Management Plan, Standard Operating Procedure #5 will be followed. Specifically, for discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony, the JB CHS Cultural Resources Manager will be contacted and all appropriate measures will be implemented to protect the remains and any other protected cultural items. JB CHS will immediately inform you of the discovery and invite you to assist in the evaluation of those resources and implementation of procedures to minimize adverse impacts.

Based on the above information, it is our conclusion that implementation of future installation development undertakings will not have an adverse affect on any TCPs or Native Indian sacred sites on or adjacent to JB CHS. I request your input regarding knowledge of any properties on JB CHS of religious or cultural significance that could be affected by future implementation of installation development proposed actions. I would also like to determine if the Eastern Shawnee Tribe of Oklahoma has a cultural or historical affiliation with the lands of JB CHS or if tribal treaty rights or other rights to natural resources potentially could be affected. In that respect, please identify any potential sites on or adjacent to the three distinctly separate JB CHS facilities shown on the attached maps. I understand that there may be concerns regarding the confidentiality of information on resources of religious, traditional, and cultural importance. In that event, please contact my designees below to develop procedures to maintain the confidentiality of such information. If applicable to the Eastern Shawnee Tribe of Oklahoma, I respectfully request your written concurrence with our conclusion that implementation of future installation development undertakings will not have an adverse affect on any TCPs or Native Indian sacred sites on or adjacent to JB CHS.

I have appointed two JB CHS staff members to act as agents for JB CHS to execute routine tribal consultations. I respectfully request that you authorize your Tribal Historic Preservation Officer (THPO) or another representative to work directly with them to meet the legal objectives of the law. My appointed individuals are Mr. Mark Epstein and Mr. Terrence Larimer.

In furtherance of establishing a respectful and open relationship, I welcome you and your staff to visit Joint Base Charleston facilities to become familiar with our location and operations. We are happy to help you determine if any TCP, sacred sites, or resources of interest to the Eastern Shawnee Tribe of Oklahoma are present on JB CHS.

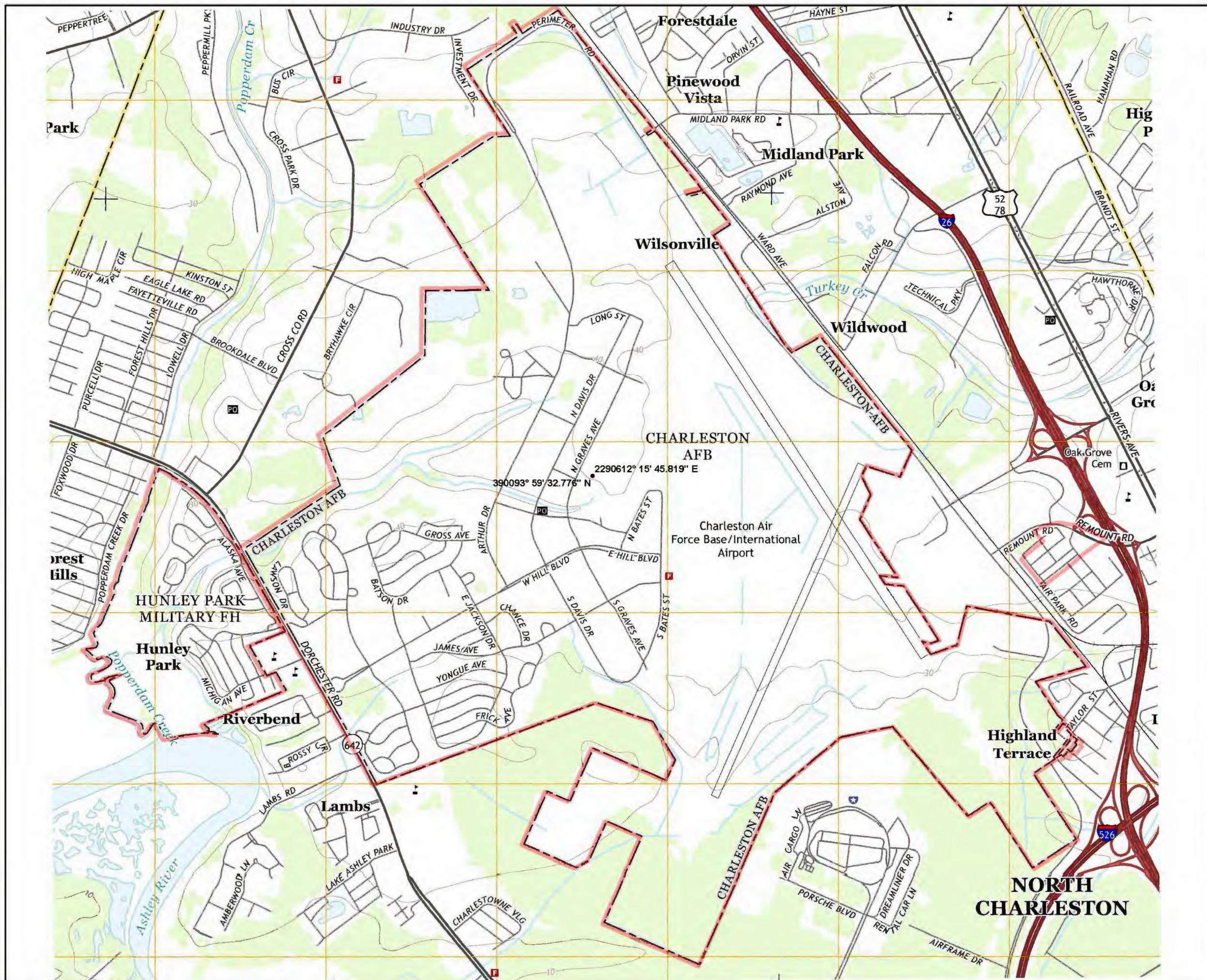
We look forward to hearing from you and your staff. If you have any questions, you may contact me at (843) 963-3419.

Sincerely

JEFFREY W. DEVORE, Colonel, USAF
Commander

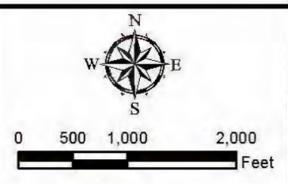
Attachment:
JB CHS Property Maps

Attachment
JB CHS Property Maps



Legend
 Installation Boundary

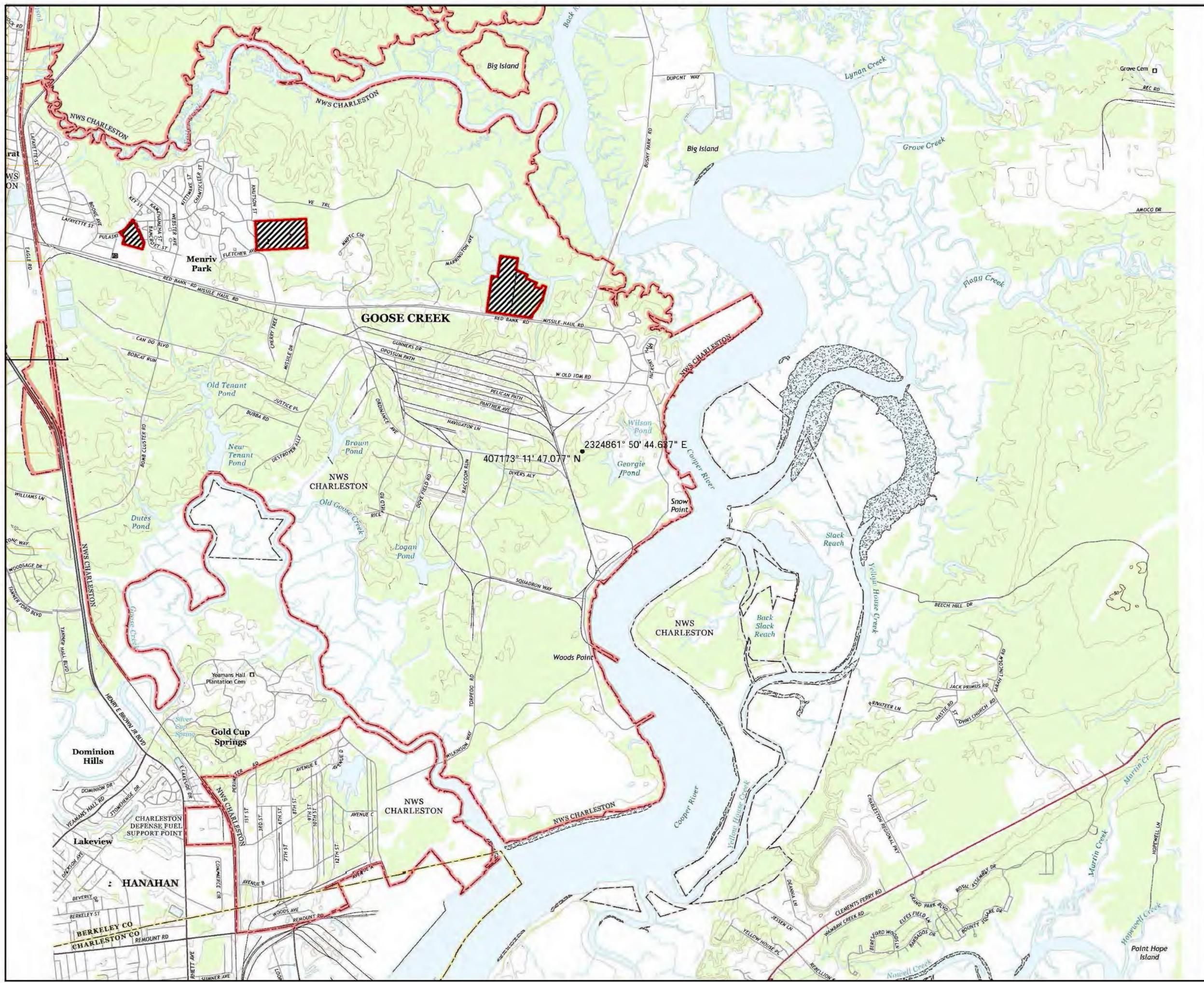
USGS
 Ladson Quad Map
 JB Charleston-AB



COORDINATE SYSTEM: SC STATE PLANE FIPS 3900
 DATUM: NAD 1983
 UNITS: FEET

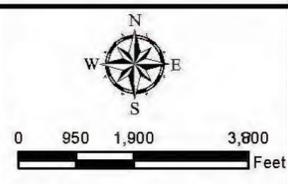
DEPARTMENT OF THE AIR FORCE
Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA
 COMMON INSTALLATION PICTURE (CIP)

628 CIVIL ENGINEER SQUADRON
 Site Development Office
 FOR OFFICIAL USE ONLY
 SCALE: 1" = 1,107' DATE: AUG 2014



Legend
 Berkeley County Property
 Installation Boundary

USGS
 N. Charleston Quad Map
 JB Charleston - NWS



COORDINATE SYSTEM : SC STATE PLANE FIPS 3900
 DATUM : NAD 1983
 UNITS : FEET

DEPARTMENT OF THE AIR FORCE

Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA

COMMON INSTALLATION PICTURE
 (CIP)

828 CIVIL ENGINEER SQUADRON
 Site Development Office
 FOR OFFICIAL USE ONLY

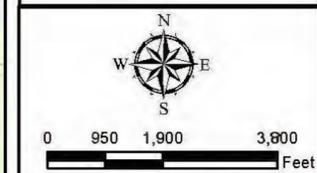
SCALE: 1" = 1,991' DATE: AUG 2014



Legend

- Berkeley County Property
- Installation Boundary

USGS
Kittredge Quad Map
JB Charleston - NWS



COORDINATE SYSTEM : SC STATE PLANE FIPS 3900
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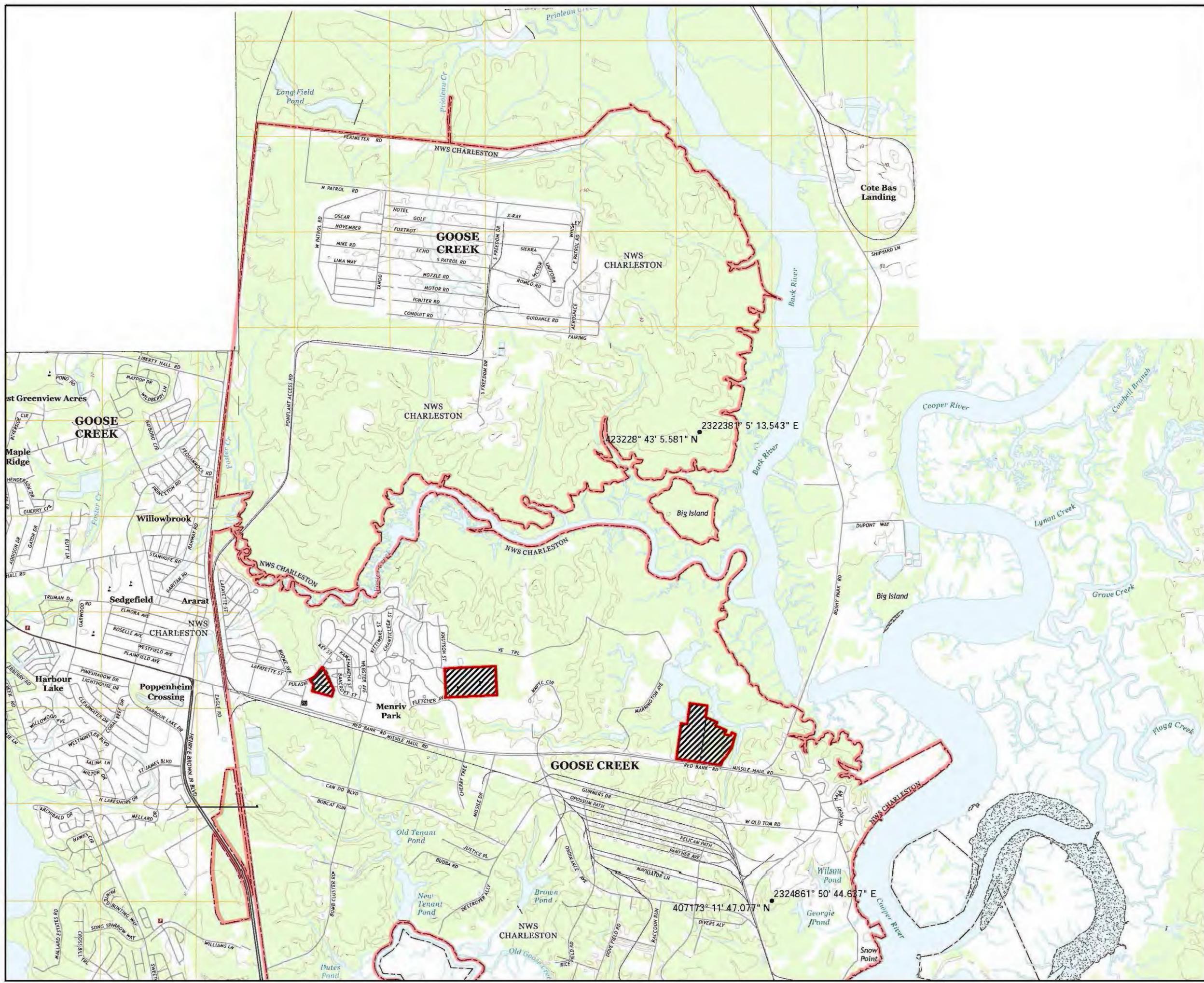
DEPARTMENT OF THE AIR FORCE

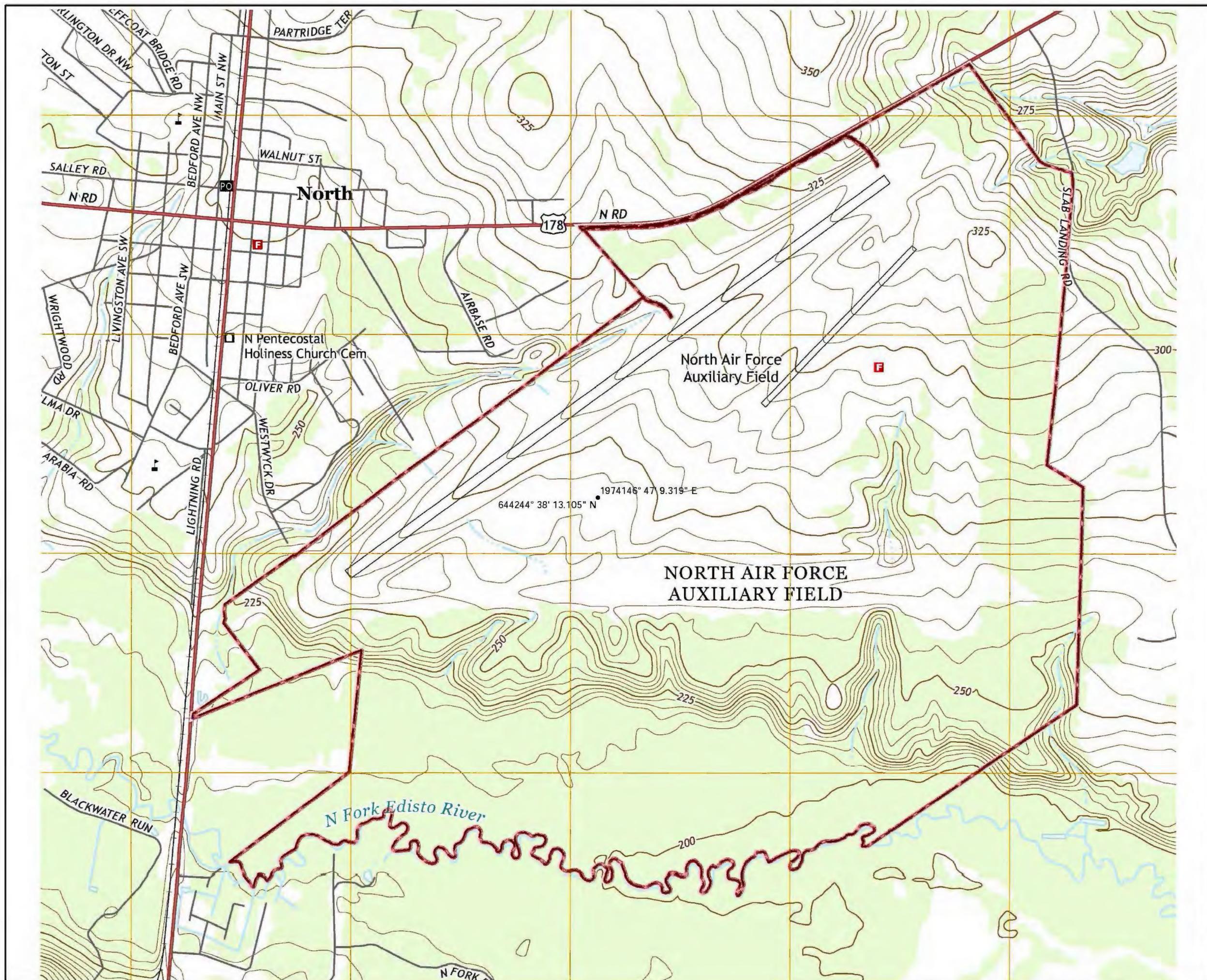
Joint Base Charleston
CHARLESTON, SOUTH CAROLINA

COMMON INSTALLATION PICTURE (CIP)

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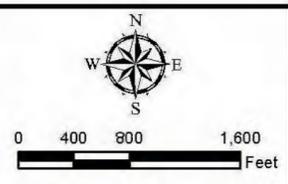
SCALE: 1" = 1,991' DATE: AUG 2014





Legend
 Installation Boundary

USGS
 North Quad Map
 JB Charleston - NAAF



COORDINATE SYSTEM: SC STATE PLANE FIPS 3900
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DEPARTMENT OF THE AIR FORCE
 Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA
 COMMON INSTALLATION PICTURE (CIP)

828 CIVIL ENGINEER SQUADRON
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Belvedere Estates
Avalon in the Pines
Hannah

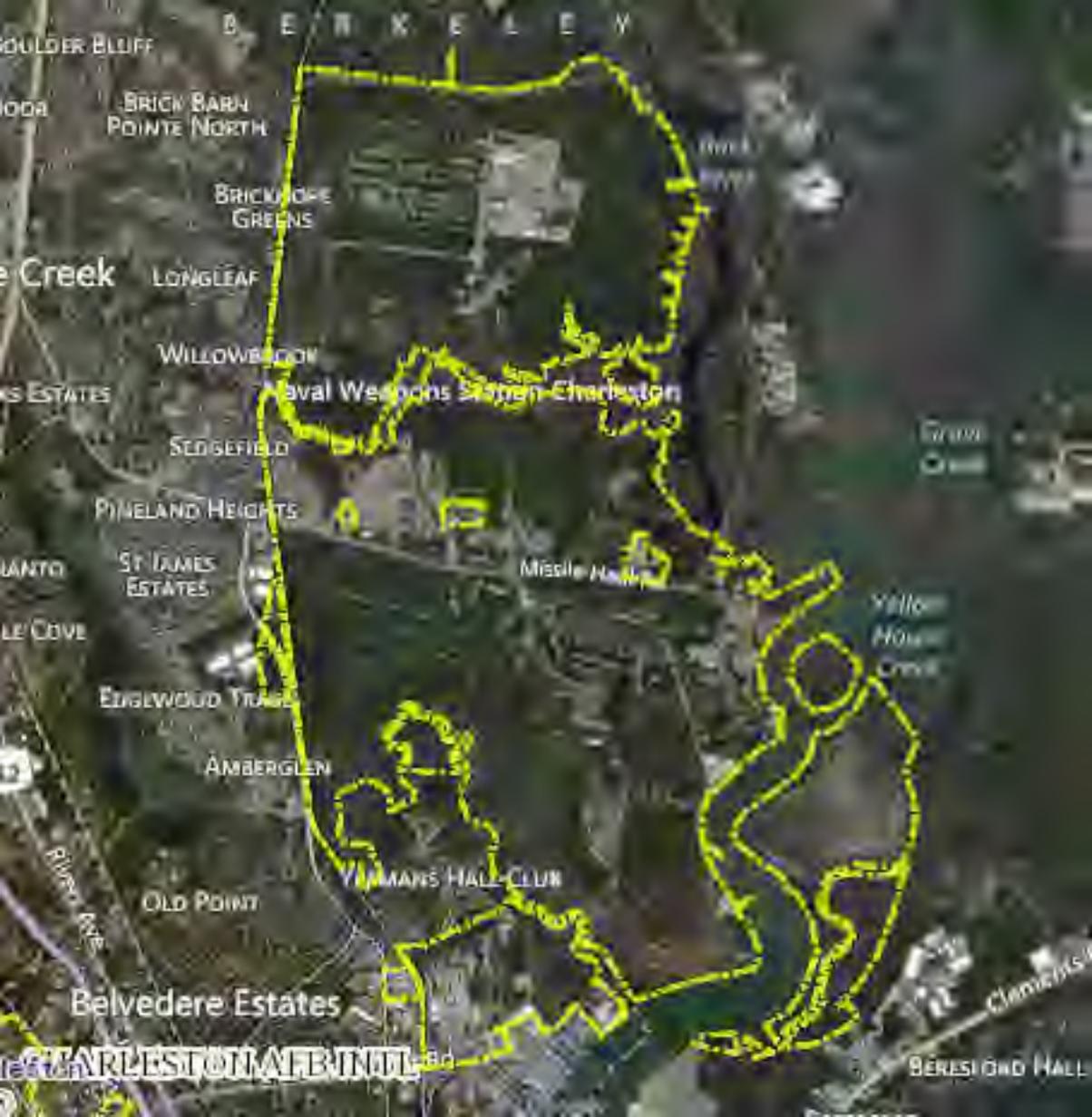
CHARLESTON AIRFIELD

Joint Base Charleston

Wrenwoods Golf Course

Charleston Air Force Base

Charleston International Airport and Air Force Base



B E R K E L E Y

BOULDER BLUFF

MODA

BRICK BARN
POINTE NORTH

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River Ave

OLD POINT

WILMANS HALL CLUB

Belvedere Estates

CHARLESTON AIRFIELD

Clematis St

BERESFORD HALL



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 628TH AIR BASE WING (AMC)
JOINT BASE CHARLESTON SC**

Colonel Jeffrey W. DeVore
Commander, Joint Base Charleston
102 East Hill Blvd, Suite 100
Joint Base Charleston SC 29404-5004

Muscogee (Creek) Nation
Principal Chief George Tiger
P. O. Box 580
Okmulgee OK 74447

RE: Installation Development at Joint Base Charleston Facilities in Charleston, Berkeley, and Orangeburg Counties of South Carolina

Dear Principal Chief Tiger

I am writing to initiate formal Government-to-Government consultations to meet the requirements of Section 106 of the National Historic Preservation Act of 1966 (16 USC 407f), the National Environmental Policy Act (NEPA), the Native American Grave Protection and Repatriation Act of 1990 (25 USC 3001-3013), and Executive Order 13175 regarding future Installation Development undertakings with the potential to impact sites of religious or cultural significance within and/or adjacent to the boundaries of Joint Base Charleston (JB CHS) facilities.

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In furtherance of establishing a respectful and open relationship, I welcome you and your staff to visit Joint Base Charleston facilities to become familiar with our location and operations. We are happy to help you determine if any TCP, sacred sites, or resources of interest to the Muscogee (Creek) Nation are present on JB CHS.

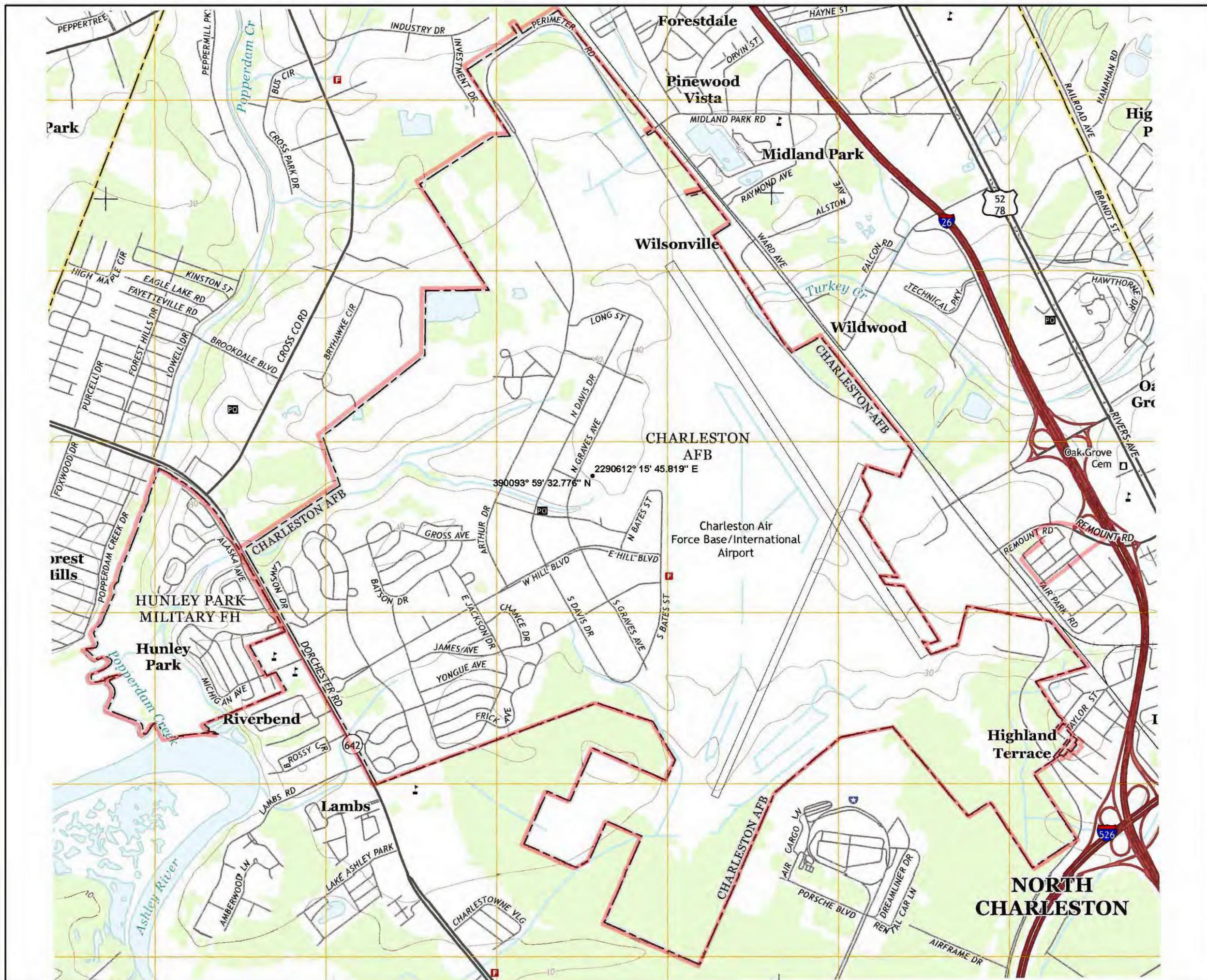
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Sincerely,

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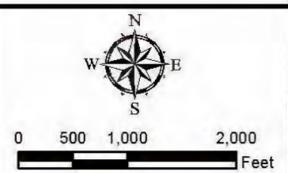
Attachment:
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Legend
 Installation Boundary

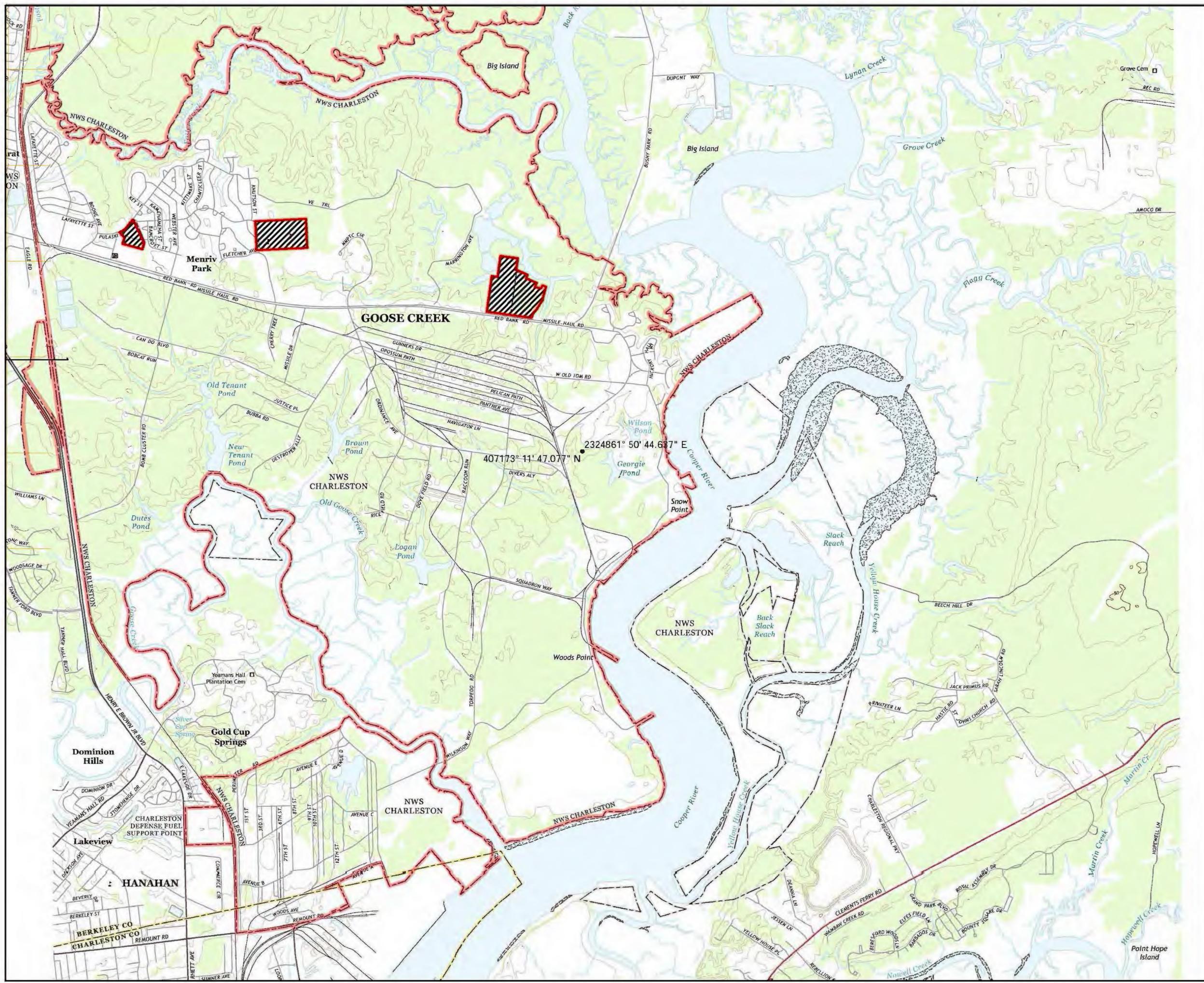
USGS
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COORDINATE SYSTEM: SC STATE PLANE FIPS 3900
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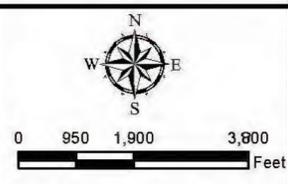
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 COMMON INSTALLATION PICTURE (CIP)

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 Site Development Office
 FOR OFFICIAL USE ONLY
 SCALE: 1" = 1,100' DATE: AUG 2014



Legend
 Berkeley County Property
 Installation Boundary

USGS
 N. Charleston Quad Map
 JB Charleston - NWS



COORDINATE SYSTEM : SC STATE PLANE FIPS 3900
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DEPARTMENT OF THE AIR FORCE

Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA

COMMON INSTALLATION PICTURE
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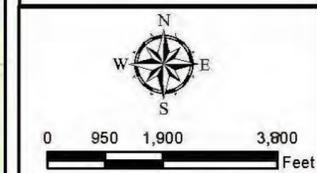
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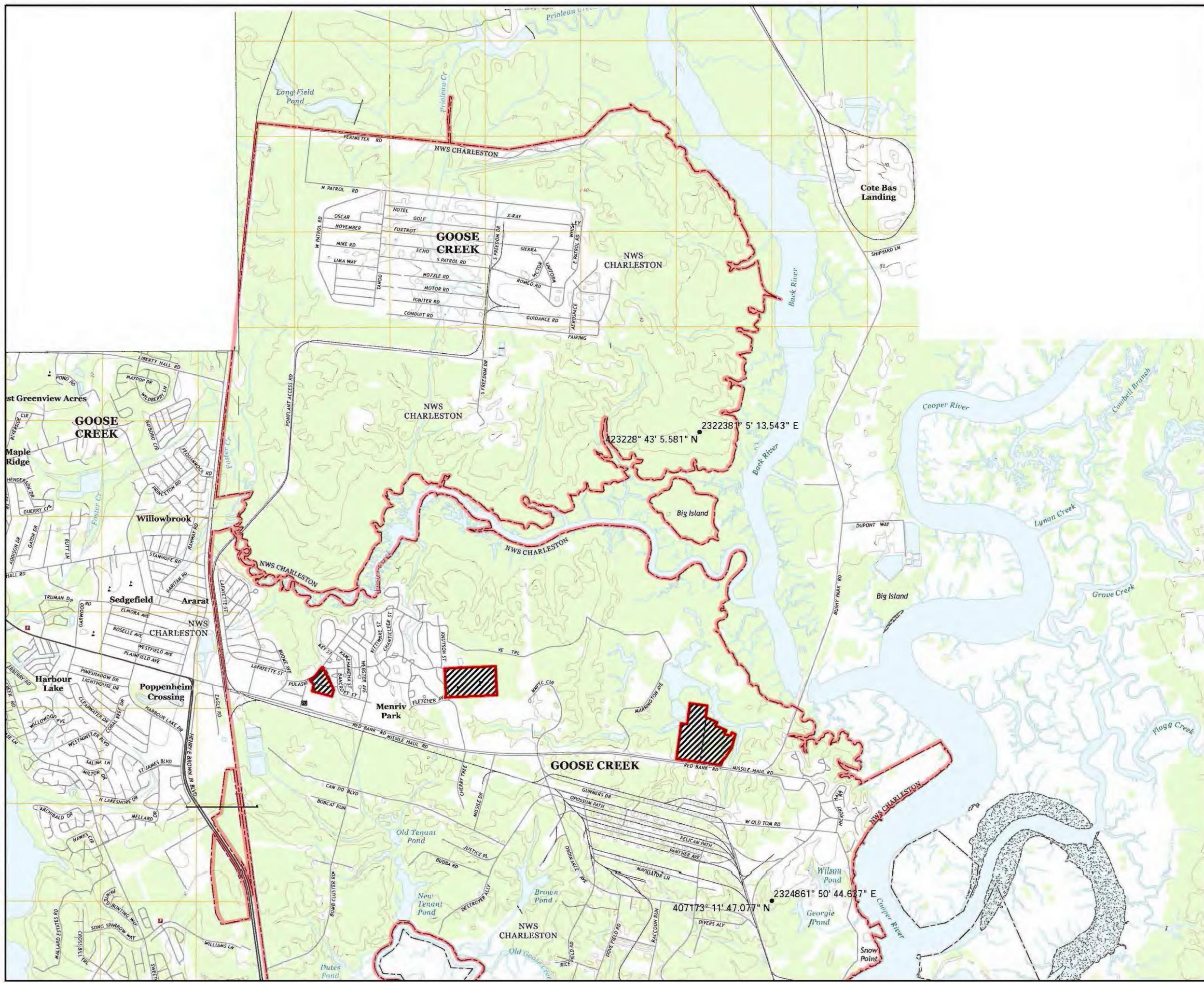
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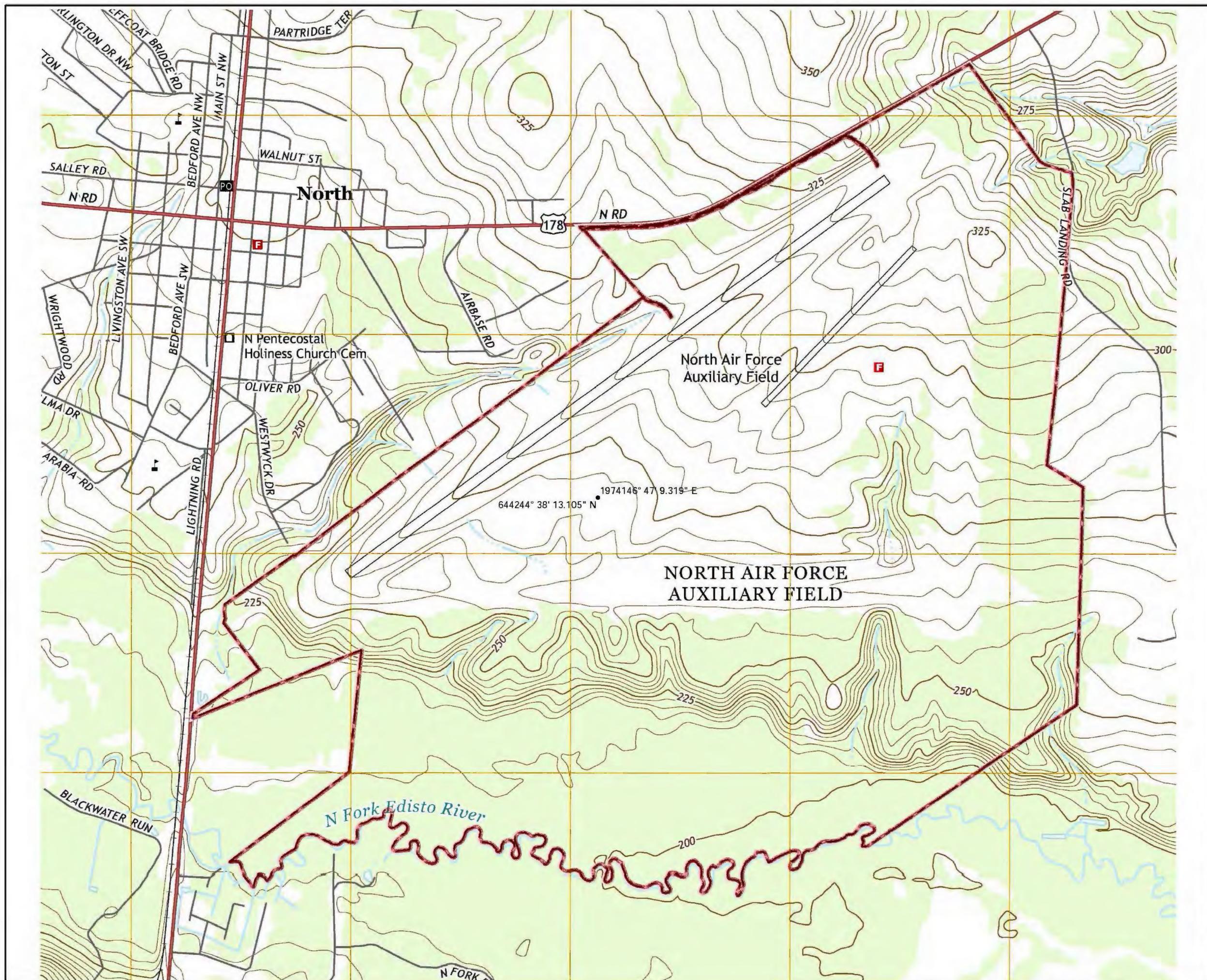
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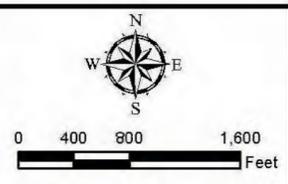
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 North Quad Map
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DEPARTMENT OF THE AIR FORCE
 Joint Base Charleston
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CHARLESTON AIRFIELD

Joint Base Charleston

Wrenwoods Golf Course

Charleston Air Force Base

SOUTH CHARLESTON OUTSIDE MARK CLARK

Charleston International Airport and Air Force Base

OLD POINT

North Charleston

3 km



B E R K E L E Y

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CHARLESTON AIRFIELD

Clematis

BERESFORD HALL



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North Rd

Potomac Ln

Holland St

Westwick Dr

Savannah Hwy

Pond Bluff Rd

N Fork Rd

North Rd

178

321

321

Livingston Pond

Slab Landing Rd

Summer Camp Rd

Forrestre



NORTH AF AUX

North Army Air Base

Savannah Hwy

321

178

North Rd

Potomac Ln

Holland St

Westwick Dr

Savannah Hwy

321

Pond Bluff Rd

N Fork Rd

Slab Landing Rd

Summer Camp Rd

Livingston Pond



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 628TH AIR BASE WING (AMC)
JOINT BASE CHARLESTON SC**

Colonel Jeffrey W. DeVore
Commander, Joint Base Charleston
102 East Hill Blvd, Suite 100
Joint Base Charleston SC 29404-5004

Eastern Band of Cherokee Nation
Principal Chief Mitchell Hicks
P. O. Box 455
Cherokee NC 28719

RE: Installation Development at Joint Base Charleston Facilities in Charleston, Berkeley, and Orangeburg Counties of South Carolina

Dear Principal Chief Hicks,

I am writing to initiate formal Government-to-Government consultations to meet the requirements of Section 106 of the National Historic Preservation Act of 1966 (16 USC 407f), the National Environmental Policy Act (NEPA), the Native American Grave Protection and Repatriation Act of 1990 (25 USC 3001-3013), and Executive Order 13175 regarding future Installation Development undertakings with the potential to impact sites of religious or cultural significance within and/or adjacent to the boundaries of Joint Base Charleston (JB CHS) facilities.

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There are also 2 NRHP-eligible archaeological historic districts (Foster Creek Discontiguous Historic District and Parnassus Plantation Discontiguous Historic District) containing 11 contributing sites, including 3 that are also individually eligible. Nine archaeological sites are present at JB CHS-WS that require further work to determine their eligibility status. No Traditional Cultural Properties (TCP) or Native Indian sacred sites were identified during any of the surveys on JB CHS facilities.

No Installation Development projects are proposed in any areas where known archaeological resources are present. If any unanticipated discoveries of TCP occur, work will be temporarily halted and the procedures outlined in the JB CHS Integrated Cultural Resources Management Plan, Standard Operating Procedure #5 will be followed. Specifically, for discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony, the JB CHS Cultural Resources Manager will be contacted and all appropriate measures will be implemented to protect the remains and any other protected cultural items. JB CHS will immediately inform you of the discovery and invite you to assist in the evaluation of those resources and implementation of procedures to minimize adverse impacts.

Based on the above information, it is our conclusion that implementation of future installation development undertakings will not have an adverse affect on any TCPs or Native Indian sacred sites on or adjacent to JB CHS. I request your input regarding knowledge of any properties on JB CHS of religious or cultural significance that could be affected by future implementation of installation development proposed actions. I would also like to determine if the Eastern Band of Cherokee Nation has a cultural or historical affiliation with the lands of JB CHS or if tribal treaty rights or other rights to natural resources potentially could be affected. In that respect, please identify any potential sites on or adjacent to the three distinctly separate JB CHS facilities shown on the attached maps. I understand that there may be concerns regarding the confidentiality of information on resources of religious, traditional, and cultural importance. In that event, please contact my designees below to develop procedures to maintain the confidentiality of such information. If applicable to the Eastern Band of Cherokee Nation, I respectfully request your written concurrence with our conclusion that implementation of future installation development undertakings will not have an adverse affect on any TCPs or Native Indian sacred sites on or adjacent to JB CHS.

I have appointed two JB CHS staff members to act as agents for JB CHS to execute routine tribal consultations. I respectfully request that you authorize your Tribal Historic Preservation Officer (THPO) or another representative to work directly with them to meet the legal objectives defined by law. My appointed individuals are Mr. Mark Epstein and Mr. Terrence Larimer.

In furtherance of establishing a respectful and open relationship, I welcome you and your staff to visit Joint Base Charleston facilities to become familiar with our location and operations. We are happy to help you determine if any TCP, sacred sites, or resources of interest to the Eastern Band of Cherokee Nation are present on JB CHS.

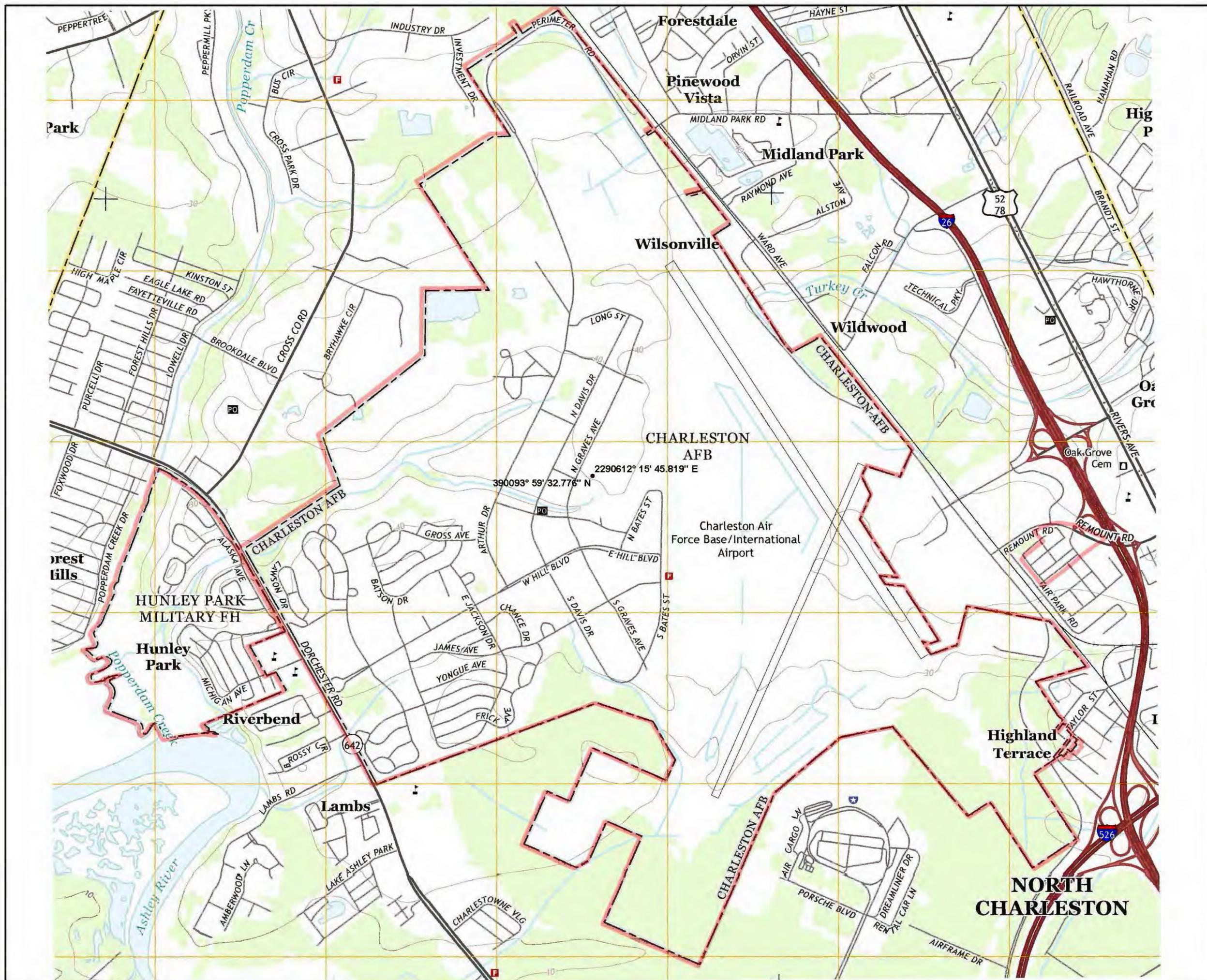
We look forward to hearing from you and your staff. If you have any questions, you may contact me at (843) 963-3419.

Sincerely

JEFFREY W. DEVORE, Colonel, USAF
Commander

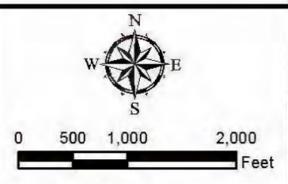
Attachment:
JB CHS Property Maps

Attachment
JB CHS Property Maps



Legend
 Installation Boundary

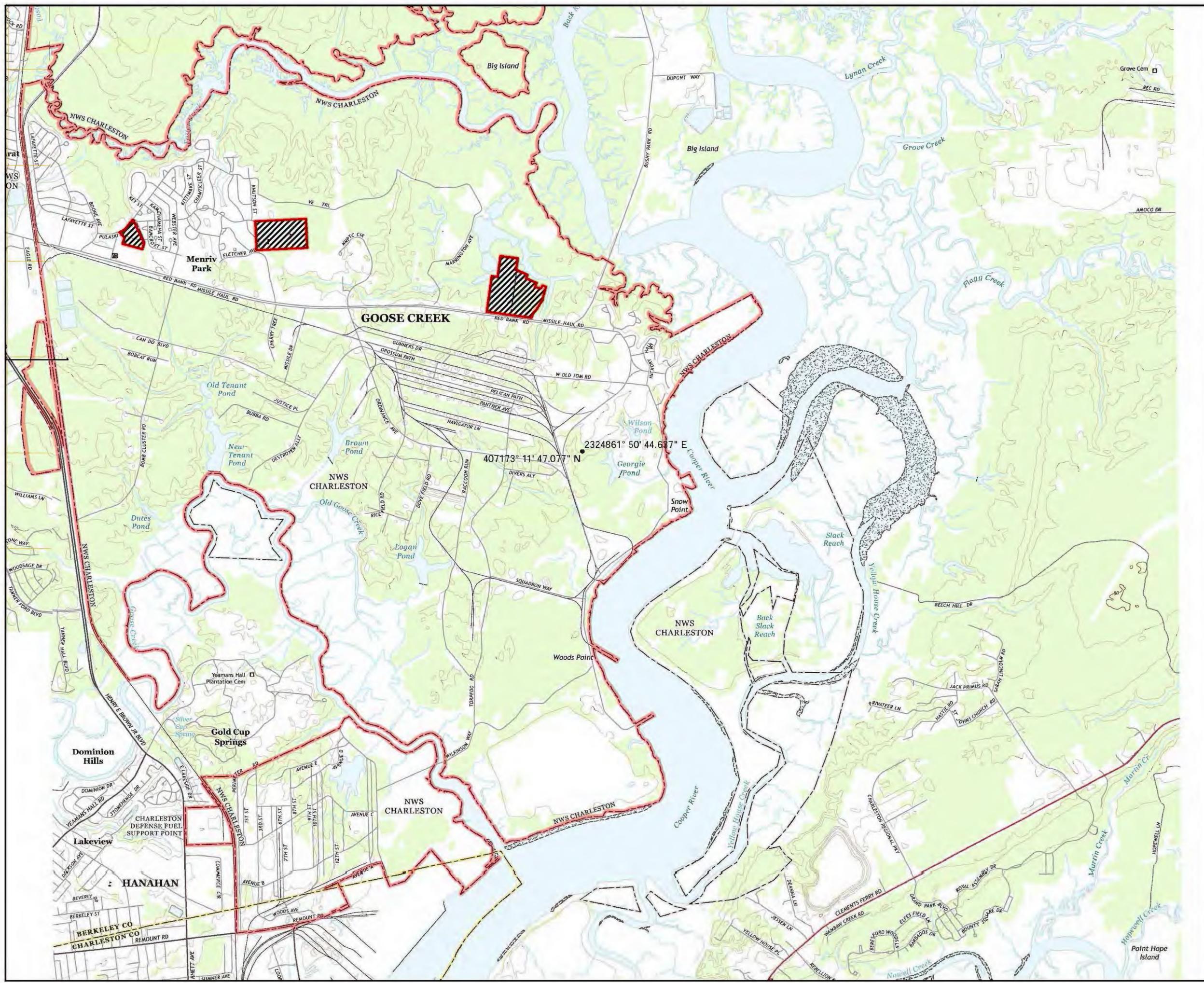
USGS
 Ladson Quad Map
 JB Charleston-AB



COORDINATE SYSTEM: SC STATE PLANE FIPS 3900
 DATUM: NAD 1983
 UNITS: FEET

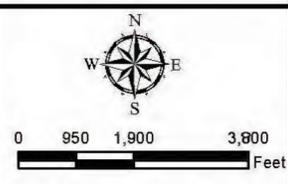
DEPARTMENT OF THE AIR FORCE
Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA
 COMMON INSTALLATION PICTURE (CIP)

628 CIVIL ENGINEER SQUADRON
 Site Development Office
FOR OFFICIAL USE ONLY
 SCALE: 1" = 1,107' DATE: AUG 2014



Legend
 Berkeley County Property
 Installation Boundary

USGS
 N. Charleston Quad Map
 JB Charleston - NWS



COORDINATE SYSTEM : SC STATE PLANE FIPS 3900
 DATUM : NAD 1983
 UNITS : FEET

DEPARTMENT OF THE AIR FORCE

Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA

COMMON INSTALLATION PICTURE
 (CIP)

828 CIVIL ENGINEER SQUADRON
 Site Development Office
 FOR OFFICIAL USE ONLY

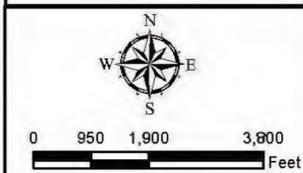
SCALE: 1" = 1,991' DATE: AUG 2014



Legend

- Berkeley County Property
- Installation Boundary

USGS
Kittredge Quad Map
JB Charleston - NWS



COORDINATE SYSTEM : SC STATE PLANE FIPS 3900
DATUM : NAD 1983
UNITS : FEET

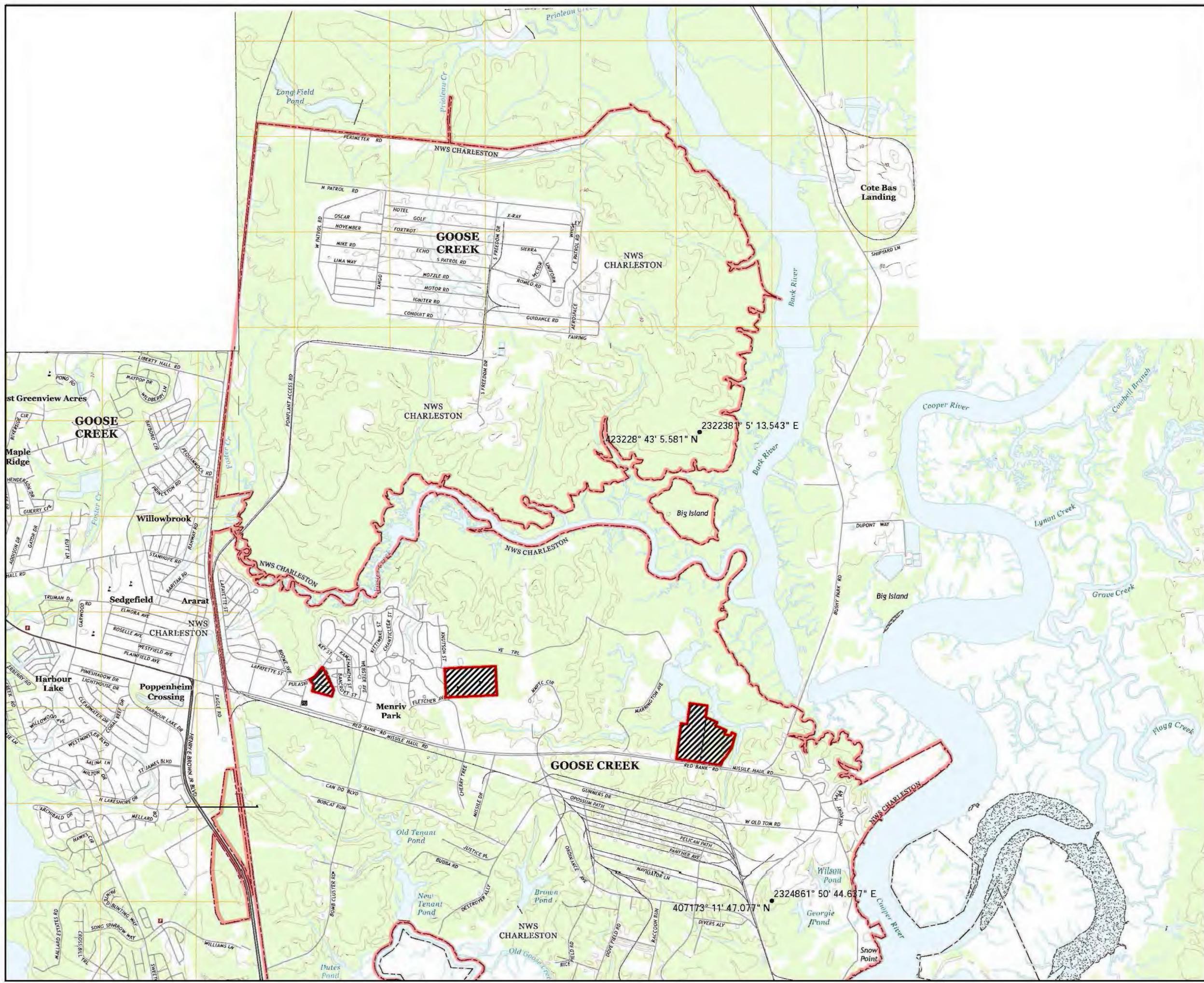
DEPARTMENT OF THE AIR FORCE

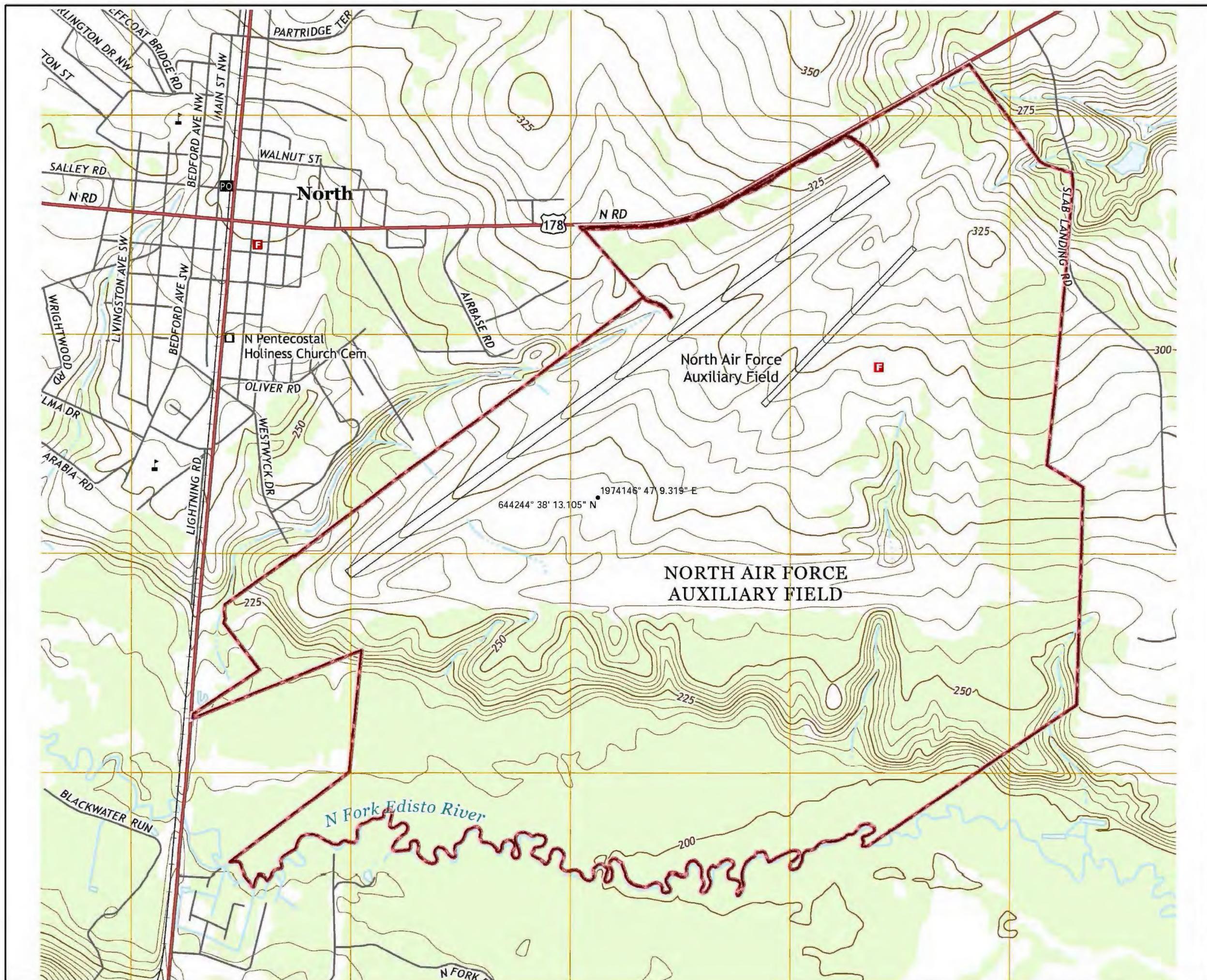
Joint Base Charleston
CHARLESTON, SOUTH CAROLINA

COMMON INSTALLATION PICTURE (CIP)

628 CIVIL ENGINEER SQUADRON
Site Development Office
FOR OFFICIAL USE ONLY

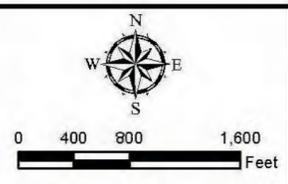
SCALE: 1" = 1,991' DATE: AUG 2014





Legend
 Installation Boundary

USGS
 North Quad Map
 JB Charleston - NAAF



COORDINATE SYSTEM: SC STATE PLANE FIPS 3900
 DATUM: NAD 1983
 UNITS: FEET

DEPARTMENT OF THE AIR FORCE
 Joint Base Charleston
 CHARLESTON, SOUTH CAROLINA
 COMMON INSTALLATION PICTURE (CIP)

828 CIVIL ENGINEER SQUADRON
 Site Development Office
 FOR OFFICIAL USE ONLY

SCALE: 1" = 889' DATE: AUG 2014



Belvedere Estates
AVALON IN THE PINES
Hannah

CHARLESTON AIRFIELD

Joint Base Charleston

Wrenwoods Golf Course

Charleston Air Force Base

SOUTH CHARLESTON OUTSIDE MARK CLARK

Charleston International Airport and Air Force Base



BOULDER BLUFF

B E R K E L E Y

MODA

BRICK BARN
POINTE NORTH

BRICK HOPE
GREENS

e Creek

LONGLEAF

WILLOWBROOK

ES ESTATES

Naval Weapons Station Charleston

SEDFIELD

Green
Creek

PINELAND HEIGHTS

ANTO

ST JAMES
ESTATES

Missile Warehouse

Yellow
House
Creek

LE COVE

EAGLEWOOD TRAILS

AMBERGLEN

River Ave

OLD POINT

WILMANS HALL CLUB

Belvedere Estates

CHARLESTON AIRFIELD

Clematis St

BERESFORD HALL



NORTH AF AUX

North Army Air Base

Savannah Hwy

North Rd

Potomac Ln

Holland St

Westwick Dr

Savannah Hwy

Pond Bluff Rd

N Fork Rd

North Rd

178

321

321

Livingston Pond

Slab Landing Rd

Summer Camp Rd

Forrest St



C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

February 29, 2012

Mr. Patrick O'Donnell
U.S. Army Corp of Engineers
69A Hagood Avenue
Charleston, SC 29403-5107

Re: Environmental Assessment – Army Strategic Logistics Activity Warehouse Project
(ASLAC – MRAP)

Dear Mr. O'Donnell:

The Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (SCDHEC-OCRM) is in receipt of your letter dated December 20, 2011 regarding the Environmental Assessment for the proposed Army Strategic Logistics Activity warehouse project that will involve approximately 94.5 acres of land disturbance at the U.S. Air Force's Joint Base Charleston. Coverage under the NPDES General Permit for Stormwater Discharges from Large and Small Construction Activities is required for this project prior to commencement of construction activities. The Federal agency pursuing permit coverage also needs to prepare a Coastal Zone Consistency Certification and attach it to any State or Federal permit that is required prior to construction of the proposed project. Since this proposed site is located on federally owned lands, the project will need to be evaluated for any potential spillover effects that may result on any adjacent areas not owned by the Federal government. We are available to review more detailed plans of the project as it progresses.

Sincerely,

Shannon Hicks, PE
Manager, Engineering & State Certification
Regulatory Programs Division

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Ocean and Coastal Resource Management

Charleston Office • 1362 McMillan Avenue • Suite 400 • Charleston, SC 29405

Phone: (843) 744-5838 • Fax: (843) 744-5847 • www.scdhec.gov

US ENVIRONMENTAL PROTECTION AGENCY REGION 4 NEPA CHECK LIST

Consistent with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA), Region 4 offers the following general comments/suggestions for your consideration in order to help facilitate your development of a Draft Environmental Assessment (DEA) for the proposed Army Strategic Logistics Activity-Charleston ASLAC-Mine Resistant Ambush Protected (MRAP) storage facility for 3,700 vehicles.

1. DEA development must be consistent with Section 309 of the Clean Air Act and should include clear conclusions why the "Preferred Alternative" was selected. The Preferred Alternative should be individually evaluated, i.e., without solely referencing to the impacts attendant to other alternatives.
2. The DEA should include a complete list of abbreviations, definitions, acronyms and symbols.
3. The DEA should be specific and describe what facilities (or portions of the facilities) will be demolished and when the work will take place. Any deconstruction (demolition) should be done according to the State Historic Preservation Officer (SHPO), the National Historic Preservation Act (NHPA)'s rules, regulations, and guidelines, and should ensure disposal of federal property is done according to federal regulation. Ensure the demolition and construction debris is properly handled by licensed contractors (if needed) and disposed of in licensed sanitary landfills for each type of debris.
4. In construction/demolition projects, the DEA should address: proper handling of hazardous materials removal and disposal (asbestos, PCBs, lead from paint), and waste management (e.g., reuse or recycling as opposed to landfill dumping); wastewater management, indoor air quality, energy and water conservation (e.g., low flow toilets, energy efficient windows and doors, efficient lighting, etc.); other pollution prevention measures (e.g., use of materials with recycled content) as well as impacts to noise, traffic, air and water quality, wildlife and vegetation (could any endangered or threatened species be impacted?), erosion, sedimentation control, and impacts to historic resources.
5. The DEA and draft FONSI should be made available for public inspection at various public locations. It would be beneficial to ensure the public is well informed at all times through public meetings, flyers, and announcements.
6. The DEA should address the required permits, how to obtain them from the various regulatory agencies, and how to implement and comply with them.

7. The DEA should address land to be cleared or forested areas to be clear-cut, and should describe the type and age of trees present. Concerning cumulative impacts, what is the cumulative number of acres of land that have been cleared in the area of the proposed complex?
8. The DEA should make sure decisions made based upon archaeological surveys done in previous years are still valid.
9. The DEA should address impacts to traditional American Indian resources, if any, under the various alternatives. Consultation with the American Indian Tribes/organizations should be made and the DEA should include a list of Tribes and or Native American Indian Organizations consulted on this project along with their responses and comments.
10. The DEA should address the Graves and Repatriation Act – (NAGPRA) to identify National Register-eligible archaeological sites to ensure that proper evaluations are carried out in order to minimize the adverse impacts to historic properties in the project areas. The DEA should note that proper procedures for unexpected discoveries will be followed.
11. The DEA should discuss in some detail if there was any EJ community involvement, follow-up analyses, and/or outreach efforts performed. Also, what impact will the project have on minority businesses?
12. In addition to the noise analyses to be done related to the entire site, the DEA should also discuss what noise effects can be attributed to the temporary (state type and length of time) demolition and construction that will take place on the site.
13. The DEA should establish the contractor's procedures for borrow materials. Excavation and borrow activities should be conducted according to local and state soil conservation rules and regulations, and should ensure the quality of the fill to be used.
14. If there are any reasons to expect the contractor may encounter any contaminated soils, this should be discussed in detail in the DEA, and the proper studies of the site should be done along with the recommended corrective actions before any work commences.
15. Contaminated soils, solid wastes, chemicals, and hazardous materials should be properly handled by licensed contractors and disposed of in licensed sanitary landfills according to the type of waste. Chemicals and hazardous material should be disposed of according to local, state, Clean Water Act, RCRA, and CERCLA rules, regulations, guidelines and requirements.

16. The DEA should address handling of above ground/underground storage tanks (AST/UST), if any, according to the State and Federal rules, regulations, and guidelines. The DEA should address the issue of removing (or not removing) the tanks and should include state and federal documentation concurring/not concurring with the final decision.
17. The DEA should address the potential for impacts from air toxics associated with the project.
18. In general, construction activities should be restricted to existing rights-of-way or Department of Defense lands, if possible, and best management practices (BMPs) should be utilized. Impacts to wetlands, floodplains, and other sensitive resources should be avoided. If avoidance is not possible, mitigation must be offered to minimize adverse impacts. If construction must run through a wetland, the area should be restored to its "natural" state. That is, the affected area should be returned to its original soil horizon as well as original contours. Also, the area should be re-vegetated with indigenous species.
19. If structures must be placed in a floodplain, they should be constructed to minimize the infiltration/inflow (I/I) of flood waters and should be sturdy enough to withstand the uplift and velocity forces of such waters. To minimize impacts to prime farmland and public health, water and sewer lines should not run directly through fields or obstruct the flow of water to crops. The land should be returned to its original contours and re-vegetated with indigenous plant life. Ancillary facilities (e.g., pump stations) should be designed so as not to impede the natural flow of flood waters.
20. The owner should require and monitor the contractor to apply stringent controls to minimize potential adverse impacts on wetlands, groundwater, aquifers, creeks/rivers, lakes, ponds, reservoirs, and water quality per local and state erosion and sediment rules and guidelines, the Clean Water Act, and Executive Order 11988 - Flood Plain Management, and Executive Order 11990 - Protection of Wetlands. Runoff controls should be updated periodically for the duration of the construction (e.g., every 2-3 months) and maintained to help ensure success (e.g., silt fences emptied and hay bales replaced).
21. The DEA should include the latest cumulative impacts (past, present and future) and also the total direct/indirect impacts analysis as they affect the air quality in the area. The owner should encourage the contractors to maintain and operate all construction equipment per manufacturer's specifications and recommendations to minimize air emissions. The owner should also consider offering incentives for contractors to specify the use of retrofitted diesel equipment or purchase of available ultra-low diesel fuel in their bids.

22. The long-term and indirect impacts of the proposed action should be considered. If the proposed facilities could cause further development of an environmentally sensitive area, alternate alignments/sites should be considered.
23. EPA suggests the techniques of “Green Building” be implemented whenever possible. “Green” or “sustainable” building is the practice of creating healthier and more resource-efficient models of construction, renovation, operation, maintenance, and demolition. Research and experience increasingly demonstrates that when buildings are designed and operated with their lifecycle impacts in mind, they can provide great environmental, economic, and social benefits. Elements of Green Building typically include the following categories: Smart Growth and Sustainable Development, Energy Efficiency and Renewable Energy, Water Stewardship, Environmentally Preferable Building Materials and Specifications, Waste Reduction, Toxics, and Indoor Environments., You can find more information on Green Building at:

www.epa.gov/greenbuilding
<http://www.epa.gov/greenbuilding/>
<http://www.greenbuilding.com/>
<http://www.usgbc.org/>
www.greenhighways.org



United States Department of the Interior



FISH AND WILDLIFE SERVICE

176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

December 28, 2011

Mr. Patrick O'Donnell
Chief, Planning and Environmental Branch
U.S. Army Corps of Engineers
69A Hagood Avenue
Charleston, SC 29403-5107

Attn: Greg Wahl

Re: Army Strategic Logistics Activity, Joint Base Charleston, Berkeley County, SC
FWS Log No. 2012-CPA-0040

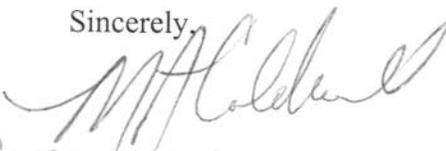
Dear Mr. O'Donnell:

The U.S. Fish and Wildlife Service (Service) has received the U.S. Army Corps of Engineers (Corps) correspondence regarding the warehouse expansion project located at the Joint Base Charleston, Berkeley County, SC. The Corps is in the process of developing an Environmental Assessment to study alternatives and impacts to the proposed project. Preparation of the EA is pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended to review environmental consequences that may occur as a result of Federal projects. Considering the proposed work and relatively small project area the Service believes the preparation EA will provide an adequate review of alternatives and potential environmental impacts.

Service records and the Heritage Trust Database indicate that the red-cocked woodpecker, *Picoides borealis* (RCW), was historically found less than one-half mile west of the project area. The RCW is federally protected under the Endangered Species Act of 1973 (ESA). Currently, there are no known current RCW populations inhabiting the JBC installation; however, suitable habitat for the RCW does exist on the JBC. A bald eagle, *Haliaeetus leucocephalus*, nest is also located near the project site. Due to recovery efforts the bald eagle is no longer protected by the ESA; however, it remains protected under the Migratory Bird Treaty Act as well as the Bald and Golden Eagle Protection Act. We recommend the Corps carefully consider potential impacts to these sensitive and protected species in the EA.

The Service appreciates the opportunity to comment on this project in its early stage of development. If you have any questions on the Service's comments please contact Mr. Mark Caldwell at (843) 727-4707 ext. 215 and reference FWS Log No. 2012-CPA-0040.

Sincerely,

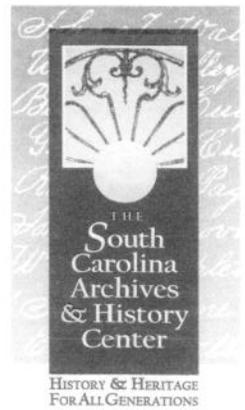


A handwritten signature in cursive script, appearing to read 'M Caldwell', written in dark ink.

for Jay B. Herrington
Field Supervisor

JBH/MAC

September 13, 2013



Bret Walters
Chief, Planning and Environmental Branch
Department of the Army
Charleston District, Corps of Engineers
69A Hagood Avenue
Charleston, SC 29403

Re: ASLAC – Mine Resistant Ambush Protected Project Construction
Berkeley County, South Carolina
SHPO Number: 13-ED0049

Dear Bret Walters:

Thank you for your letter of August 26, which we received on September 3, regarding the above-named project. We also received a project mapping as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to the U.S. Army Corps of Engineers (COE) pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800. Consultation with the SHPO is not a substitution for consultation with Tribal Historic Preservation Offices, other Native American tribes, local governments, or the public.

Based on the location of the Area of Potential Effect (APE) and its proximity to known cultural resources, our office recommends an intensive cultural resources survey of the project portion labeled Site 4.5 on the map provided by your office; the section labeled Site 5 was previously surveyed in 2000 and is not in need of further investigation. The purpose of the recommended survey is to identify historic properties, both architectural and archaeological, and evaluate their eligibility for listing in the National Register of Historic Places (NRHP). The results of this survey will be used to assess whether significant cultural or historic sites will be adversely affected by the proposed project.

All fieldwork, analyses, and report writing shall be performed by, or under the supervision of, individuals who meet the Secretary of Interior's Professional Qualification Standards. Our office will accept an abbreviated report if the survey identifies no sites.

If you have any questions, please contact me at (803) 896-6181 or edale@scdah.state.sc.us.

Sincerely,

A handwritten signature in cursive script, appearing to read "Emily Dale", is written over a horizontal line.

Emily Dale
Staff Archaeologist
State Historic Preservation Office

USFWS SECTION 7 CONSULTATION LETTER



United States Department of the Interior



FISH AND WILDLIFE SERVICE

176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

April 16, 2014

Lt. Colonel John T. Litz
District Engineer
U.S. Army Corps of Engineers
69A Hagood Avenue
Charleston, SC 29403-5107

Attn: Mr. Colton Bowles

Re: Army Strategic Logistics Activity, Joint Base Charleston, Berkeley County, SC
FWS Log No. 2012-CPA-0040

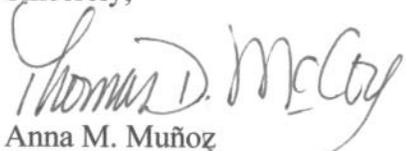
Dear Colonel Litz:

The U.S. Fish and Wildlife Service (Service) has received the U.S. Army Corps of Engineers (Corps) correspondence regarding the warehouse expansion project located at the Joint Base Charleston, Berkeley County, South Carolina. In 2011, the Corps initially requested the Service provide comments for consideration and incorporation into an Environmental Assessment being prepared for the project. In the Service's response of December 28, 2011, we requested that the Corps consider potential impacts to the red-cockaded woodpecker (RCW) and other species. The Corps completed its assessment, considered the potential impacts, and has determined that pursuant to the Endangered Species Act of 1973 (ESA), the proposed project is not likely to have an adverse impact on the RCW.

The Service concurs with your determination that this project is not likely to adversely affect the RCW. In view of this, we believe that the requirements of section 7 of the ESA have been satisfied. However, obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts from this identified action may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

The Service appreciates the opportunity to comment on this project in its early stage of development. If you have any questions on the Service's comments please contact Mr. Mark Caldwell at (843) 727-4707 ext. 215, and reference FWS Log No. 2012-CPA-0040.

Sincerely,


for Anna M. Muñoz
Acting Field Supervisor

AMM/MAC

PRELIMINARY CZM REQUEST



DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

CESAC-PM-P

27 May 2014

Mr. Curtis M. Joyner
Manager, Coastal Zone Consistency Section
Regulatory Division
SCDHEC
1362 McMillan Avenue, Suite 400
Charleston, SC 29405

Subject: Preliminary Coastal Consistency Determination for Establishing Mine Resistant Ambush Protected (MRAP) Vehicle Storage and Repair Facilities at Joint Base Charleston/Army Strategic Logistic Activity Charleston, South Carolina

Dear Mr. Joyner:

The US Army Corps of Engineers, in cooperation with the Department of the Air Force, is preparing an Environmental Assessment to assess the impacts of the proposed facilities expansions at the Army Strategic Logistic Charleston located on Joint Base Charleston. In accordance with the Coastal Zone Management Act, the USACE is requesting a preliminary CZM determination for the proposed activity.

The purpose of the proposed activity is for ASLAC to receive approximately 3,585 MRAP vehicles from various Army locations and be kept at the ASLAC facility for long term storage and maintenance. (In addition, a small subset, 514, of these vehicles will be kept on a ready status for rapid deployment if necessary.) To accomplish this mission, the construction of the following facilities will be necessary: enclosed vehicle storage space consisting of 12 dehumidified metal buildings, each approximately 133,000 square feet (SF) in size; a 53,544 SF, 38-bay, vehicle maintenance facility, and a hardened 9,000 SF armory for weapons and other sensitive equipment. Supporting facilities include utilities and connections, lighting, parking, walkways, curb and gutter, and storm drainage. Sections of existing roads on the ASLAC site would also require reinforcing.

The USACE has reached a preliminary conclusion that the proposed action will be undertaken in a manner consistent, to the maximum extent practicable, with the enforceable policies of the federally approved South Carolina Coastal Management Program.

The USACE requests your concurrence with this determination. Both the USACE and ASLAC are cognizant that this is only a preliminary determination, and, prior to any land disturbance, additional State and Federal permits will be necessary and final CZM determination will be made prior to issuing any permits. It is also acknowledged that a preliminary CZM does not guarantee final CZM determination. Thank you for your time, consideration and assistance in this matter. If you require additional information or have any questions regarding this project, please do not hesitate to me at (843) 329-8051 or at colton.b.bowles@usace.army.mil.

Respectfully

A handwritten signature in black ink, appearing to read "Colt Bowles". The signature is fluid and cursive, with a long horizontal stroke at the end.

Colt Bowles, Plan Formulator

- Enclosures:
1. DHEC OCRM State Coastal Zone Consistency (CZC) Certification Request Form
 2. Project Description with Maps



Policy Group II - Transportation

Project Name: ASLAC MRAP Storage
 TMS: _____

The Agency's Coastal Zone Consistency (CZC) certification review of all activities within the Coastal Zone that require a State permit will be based on the policies contained within project based checklists. For the CZC request to be complete, you must answer the questions contained within the policies segment relative to your project by checking off all that apply. More than one checklist may apply to your project based on the plan proposal. For example, a road or highway project might also require dredging and filling of coastal wetlands.

A) **Port Facilities:**

Required: Will your proposed port project or port plans...

<p>a) <input type="checkbox"/> take place in existing industrialized areas where sufficient support facilities are available including public utilities, rail and highway transportation access, and navigational channels which are already maintained or does the project demonstrate feasible alternatives or an overriding public interest and describe how substantial environmental damage can be minimized?</p> <p><input checked="" type="checkbox"/> or is this N/A?</p>
<p>b) <input type="checkbox"/> occur in areas that have adequate high ground (non-wetland) acreage for proposed development and near-term expansion plans, and related facilities and away from productive salt, brackish or freshwater wetlands or does the project demonstrate that no other feasible alternatives exist or an overriding public interest and any substantial environment damage can be minimized?</p> <p><input checked="" type="checkbox"/> or is this N/A?</p>
<p>c) <input type="checkbox"/> (for filling, ditching, clearing, or excavation of wetlands) demonstrate mitigation sites or practices to offset the losses of wetlands consistent with the Division's Mitigation Guidelines? The types of mitigation include wetland buffers, creation of wetlands, and restoration of existing wetlands, offsite mitigation, and mitigation banking. Provide details of mitigation on an attached document.</p> <p><input checked="" type="checkbox"/> or is this N/A?</p>
<p>d) <input type="checkbox"/> to the extent feasible, be located on existing channels so that the need for initial and maintenance dredging can be minimized?</p> <p><input checked="" type="checkbox"/> or is this N/A?</p>
<p>e) <input type="checkbox"/> be consistent with the Priority of Uses of each listed Geographic Areas of Particular Concern (GAPCs) as discussed in the Geographic Areas of Particular Concern (GAPCs) Polices and Priority of Uses document located on the Resources section of the CZC webpage?</p> <p><input checked="" type="checkbox"/> or is this N/A?</p>
<p>f) <input type="checkbox"/> require maintenance dredging and access to adequate upland (non-wetland) spoil areas, ocean disposal, or other environmentally acceptable alternative disposal techniques to meet the long-term demands for soil disposal?</p> <p><input checked="" type="checkbox"/> or is this N/A?</p>
<p>g) <input type="checkbox"/> provide for the handling of dangerous and volatile cargoes and materials in relatively isolated or restricted areas, so that in the event of accident, measures can be implemented to contain any spills or other contamination with minimal environmental damage and limited threat to the health, safety and welfare of the public?</p> <p><input checked="" type="checkbox"/> or is this N/A?</p>

B) Roads and Highways (including bridges and transit facilities)

Required: Will your proposed road and highway project or plans...

a) <input type="checkbox"/> (bridges and causeways) avoid having a negative impact on navigation, which might restrict port and harbor activities in the area? <input checked="" type="checkbox"/> or is this N/A?
b) <input type="checkbox"/> be aligned to avoid salt, brackish and freshwater wetlands wherever feasible or allows for bridging of any wetlands and all navigable waterways rather than filling to create roadbeds? <input checked="" type="checkbox"/> or is this N/A?
c) <input type="checkbox"/> make use of existing fill areas or embankments for widening and improvement projects, wherever feasible, where the median and right-of-way widths are limited to lessen the impact on salt, brackish, and freshwater wetlands? <input checked="" type="checkbox"/> or is this N/A?
d) <input type="checkbox"/> (for filling, ditching, clearing, or excavation of wetlands) demonstrate mitigation sites or practices to offset the losses of wetlands consistent with DHEC OCRM Mitigation Guidelines? The types of mitigation include wetland buffers, creation of wetlands, and restoration of existing wetlands, offsite mitigation, and mitigation banking. Provide details of mitigation in the summary section below. <input checked="" type="checkbox"/> or is this N/A?
e) <input type="checkbox"/> be designed so as not to cause substantial changes in natural waterflow and circulation through salt, brackish or freshwater wetlands or water bodies? <input checked="" type="checkbox"/> or is this N/A?
f) <input type="checkbox"/> provide adequate clearance for commercial or pleasure craft for bridges over navigable water bodies? <input checked="" type="checkbox"/> or is this N/A?
g) <input type="checkbox"/> be consistent with the Priority of Uses of each listed Geographic Areas of Particular Concern (GAPCs) as discussed in the Geographic Areas of Particular Concern (GAPCs) Polices and Priority of Uses document located on the Resources section of the CZC webpage? <input checked="" type="checkbox"/> or is this N/A?
h) <input type="checkbox"/> minimize direct drainage of roadway runoff into adjacent water bodies by filtering runoff water, such as grass ditching or vegetative buffers during construction and in later maintenance? <input checked="" type="checkbox"/> or is this N/A?
i) <input type="checkbox"/> include a provision for placement of other utilities, such as cables or transmission lines, in the design of road/highway and bridging projects in to reduce the need for future disruption of adjacent wetlands or waterways? <input checked="" type="checkbox"/> or is this N/A?
j) <input type="checkbox"/> be aligned to avoid salt, brackish and freshwater wetlands wherever feasible, and where applicable must provide bridges, culverts or other means to maintain circulation and water flow for the construction of private roadways for private access while incorporating permeable surfaces such as gravel or shell should be used rather than pavement when practicable? <input checked="" type="checkbox"/> or is this N/A?
k) <input type="checkbox"/> include spoil disposal areas associated with a highway project consistent with the Dredging Policies contained in Chapter VIII of the CZMP? <input checked="" type="checkbox"/> or is this N/A?

- e) be consistent with the Priority of Uses of each listed Geographic Areas of Particular Concern (GAPCs) as discussed in the Geographic Areas of Particular Concern (GAPCs) Polices and Priority of Uses document located on the Resources section of the CZC webpage?

or is this N/A?

Recommended policies to be considered for airport projects in the Coastal Zone:

- a. *Consideration of the existing and planned transportation system or network in the area, for example, relationship to other airports and access to adequate transportation service by other modes;*
- b. *Encouragement of joint-use or regional airport facilities where feasible (for example, joint military and civilian airports);*
- c. *Compatibility with character and use of the area; local governments are encouraged to develop plans and procedures which maintain appropriate, compatible use areas around existing airports;*
- d. *Alignment of approach corridors and corresponding noise zones during airport planning should consider any bird rookeries located in the area.*

Required:

As applicant or agent, having completed all appropriate checklists and having read the applicable polices, I certify that this project is consistent with the South Carolina Coastal Zone Management Program based on the information outlined above and supplemental information attached.

Signature and date

D) **Railways:**

Will your proposed railway project or plans...

- a) (bridges and causeways) avoid having a negative impact on navigation, which might restrict port and harbor activities in the area?

or is this N/A?

- b) be located away from salt, brackish or freshwater wetlands to the maximum extent feasible or incorporate bridging rather than filling to create railway beds?

or is this N/A?

- c) (for filling, ditching, clearing, or excavation of wetlands) demonstrate mitigation sites or practices to offset the losses of wetlands consistent with DHEC OCRM Mitigation Guidelines? The types of mitigation include wetland buffers, creation of wetlands, and restoration of existing wetlands, offsite mitigation, and mitigation banking. Provide details of mitigation in the summary section below.

or is this N/A?

- d) be designed so as not to alter natural waterflow or circulation with a bridge or when bridging is not feasible, plan for adequate culverts or other means for water to flow through or under the structure?

or is this N/A?

- e) provide adequate clearance for commercial or pleasure craft, where appropriate for bridges over navigable water bodies?

or is this N/A?

- f) include provisions for future placement of utilities, such as cables or transmission lines, in the design to reduce the need for future disruption of adjacent wetlands or waterways?

or is this N/A?

d) be consistent with the Priority of Uses of each listed Geographic Areas of Particular Concern (GAPCs) as discussed in the Geographic Areas of Particular Concern (GAPCs) Policies and Priority of Uses document located on the Resources section of the CZC webpage?

or is this N/A?

Recommended policies to be considered for parking facilities:

- a. *Use of permeable surface materials such as gravel or shell rather than pavement, where appropriate, with consideration to possible air quality and groundwater impacts;*
- b. *Retaining the maximum possible natural drainage and vegetative cover between parking spaces;*
- c. *Provision of buffer areas around parking areas located adjacent to the critical areas, as visual and storm water runoff buffers.*

Required:

As applicant or agent, having completed all appropriate checklists and having read the applicable policies, I certify that this project is consistent with the South Carolina Coastal Zone Management Program based on the information outlined above and supplemental information attached.

BOWLES.COLTON.B.1263613291

Digitally signed by BOWLES.COLTON.B.1263613291
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=BOWLES.COLTON.B.1263613291
Date: 2014.06.03 10:15:44 -04'00'

Signature and date

Colton B. Bowles 6/3/2014



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

June 30, 2014

Brent Baxter
ASLAC, Support Division Services
103 Guidance Road
Goose Creek, SC 29455

Re: MRAP Vehicle Storage and Repair Facilities at JBS/ASLAC
Berkeley County
Federal Consistency Certification, CZC-14-0526

Dear Brent Baxter:

This letter is in response to your May 27, 2014 request for a preliminary Federal Consistency Certification for the referenced project at the Joint Base Charleston – Naval Weapons Station in Berkeley County. The proposed phased project consists of constructing a Mine Resistant Ambush Protected (MRAP) vehicle storage space, a maintenance facility, armory and other supporting infrastructure.

This project is located on federally excluded land and is not located within the coastal zone. As a result, the proposed isolated wetland impacts are not under the state's jurisdiction however, any wetland impact minimization is preferred. After a review of the policies contained within the South Carolina's Coastal Zone Management Program (CZMP), Coastal Zone Consistency (CZC) staff concurs that the proposed MRAP vehicle storage area and repair facilities will be consistent to the maximum extent practicable as required by 15 CFR § 930, Subpart C as no spillover effects are anticipated to occur as a result of this project.

This preliminary certification does not alleviate responsibility to obtain required local, state and/or federal approvals. Please do not hesitate to contact me at 843-953-0702 or koczerc@dhec.sc.gov should you have any questions.

Respectively,

Christine Koczera
Project Manager
Coastal Zone Consistency Section
DHEC/OCRM - Regulatory Division

Cc: Colt Bowles, USACE - Charleston
Curtis Joyner, DHEC-OCRM

**Preliminary Coastal Zone Consistency
Determination**



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

June 30, 2014

Brent Baxter
ASLAC, Support Division Services
103 Guidance Road
Goose Creek, SC 29455

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Christine Koczera
Project Manager
Coastal Zone Consistency Section
DHEC/OCRM - Regulatory Division

Cc: Colt Bowles, USACE - Charleston
Curtis Joyner, DHEC-OCRM

Jurisdictional Determination



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

July 9, 2014

Regulatory Division

Mr. Colt Bowles
Planning Department
Charleston District U.S. Army Corps of Engineers
69-A Hagood Avenue
Charleston, South Carolina 29403

Dear Mr. Bowles:

This is in response to your letter of July 7, 2014, requesting a Preliminary Jurisdictional Determination (Preliminary), on behalf of USAF-Joint Base Charleston, for a 95 acre tract, located along and adjacent to the northern boundary of the ASLAC on Joint Base Charleston (f/k/a Charleston Naval Weapons Station) in the Town of Goose Creek, Berkeley County, South Carolina. The project area is depicted on the enclosed sketch entitled "Preliminary Wetland Determination" and dated July 8, 2014. A preliminary jurisdictional determination is used to indicate that this office has identified wetlands or other waters on the property and believes these waters may be jurisdictional waters of the United States. Since the Preliminary does not verify the actual jurisdictional status of wetlands and/or waters of the United States on the property, it relies on the presumption of jurisdiction for the purpose of expediting the request for a Preliminary.

Based on an on-site inspection, a review of aerial photography, topographic maps, National Wetland Inventory maps and soil survey information, it has been concluded that the boundaries shown on the referenced sketch or plat are a reasonable approximation of the location and boundaries of the waters found on this site. The property in question contains approximately 0.76 acres of federally defined freshwater wetlands or other waters. You are cautioned that this delineation is approximate, subject to change, and should be used for planning purposes only. This office should be contacted prior to performing any work in or around these wetlands or other waters. In order for a definitive determination to be provided, these areas should be located and marked on-site, sketched or surveyed, platted on a map, and should be accompanied by a request for an Approved Jurisdictional Determination. Upon receipt of such a request, this office can then issue an approved determination as to jurisdiction (rather than the presumption of jurisdiction). You should also be aware that the areas identified as wetlands or other waters may be subject to restrictions or requirements of other state or local government entities.

Please note that since this jurisdictional determination is a Preliminary, it is subject to change and therefore is not an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. If a permit application is forthcoming as a result of this Preliminary, a copy of this letter, as well as the attached sketch or plat should be submitted as part of the application. Otherwise, a delay could occur in confirming that a preliminary jurisdictional determination was performed for the permit project area.

This preliminary jurisdictional determination is a non-binding action and as such has no expiration until it is superseded by an Approved Jurisdictional Determination. If you intend to request an Approved Jurisdictional Determination in the future, you are advised not to commence work in these wetlands and/or waters prior to receiving the Approved Jurisdictional Determination.

This delineation/determination has been conducted to identify the limits of U. S. Army Corps of Engineers (COE) Clean Water Act jurisdiction for the particular site identified in this request. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

In future correspondence concerning this matter, please refer to SAC 2012-00893-2JY. You may still need state or local assent. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management. A copy of this letter is being forwarded to them for their information.

Enclosed are two copies of the Preliminary Jurisdictional Determination Form signed by our office. Please sign both copies, retain one copy for your records and return one signed copy to this office in the enclosed self-addressed envelope.

If you have any questions concerning this matter, please contact David Chamberlain at 843-329-8044 or toll free at 1-866-329-8187.

Respectfully,


Mary Hope Green
Manager, Watershed 2

Enclosures:
Preliminary Jurisdictional Determination Form

Copy Furnished:

South Carolina Department of Health
and Environmental Control Office of
Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405

Preliminary Wetland Determination
ASLAC-MRAP (Joint Base Charleston)
Berkeley County, SC

July 8, 2014 SAC-2012-00893-BUY

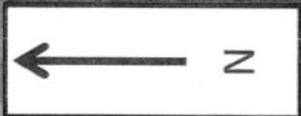
Project Area

33 00 57.99N
79 58 11.70W

33 00 52.38N
79 58 12.58W

33 00 57.99N
79 58 11.70W

33 00 56.95N
79 57 33.76W



Approximate Locations of
Aquatic Resources

6

5

4

3

X-Ray

1033 ft

©2010 Google

SAC-2012-00893-207

APPENDIX D

EFIS Model Methodology

ECONOMIC IMPACT FORECAST SYSTEM (EIFS) MODEL SOCIOECONOMIC IMPACT ASSESSMENT

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls and local procurement contribute to the economic base for the ROI. In this regard, the proposed road improvements and construction of warehouse, maintenance, and storage buildings on JBCHS/ASLAC for the MRAP action would have a multiplier effect on the local and regional economy. With the proposed action, direct jobs would be created (e.g., construction jobs), generating new income and increasing personal spending. This spending generally creates secondary jobs, increases business volume, and increases revenues for schools and other social services.

THE ECONOMIC IMPACT FORECAST SYSTEM

The U.S. Army, with the assistance of many academic and professional economists and regional scientists, developed EIFS to address the economic impacts of NEPA-requiring actions and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS should be used in NEPA assessments. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but still have firm, defensible bases in regional economic theory.

EIFS was developed under a joint project of the U.S. Army Corps of Engineers, the U.S. Army Environmental Policy Institute, and the Computer and Information Science Department of Clark Atlanta University. EIFS is implemented as an on-line system supported by the U.S. Army Corps of Engineers, Mobile District. The system is available to anyone with an approved user-id and password. U.S. Army Corps of Engineers staff is available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to define an economic ROI by identifying the counties, parishes, or cities to be analyzed. Once the ROI is defined, the system aggregates the data, calculates multipliers and other variables used in the various models in EIFS, and prompts the user for forecast input data.

THE EIFS MODEL

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from changes in local expenditures or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to basic economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating aggregate impacts and makes the economic base model ideal for the EA and EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its base sector; for example, a dollar increase in local expenditures due to an

expansion of its military installation. EIFS estimates its multipliers using a location quotient approach based on the concentration of industries within the region relative to the industrial concentrations for the nation.

The user inputs into the model the data elements which describe the proposed action: the change in expenditures, or dollar volume of the proposed project(s); change in civilian or military employment; average annual income of affected civilian or military employees; the percent of civilians expected to relocate due to the proposed action; and the percent of military living on post.

Once these are entered into the EIFS model, a projection of changes in the local economy is provided. These are projected changes in sales volume, income, employment, and population. These four indicator variables are used to measure and evaluate socioeconomic impacts. Sales volume is the direct and indirect change in local business activity and sales (total retail and wholesale trade sales, total selected service receipts, and value-added by manufacturing).

Employment is the total change in local employment due to the proposed action, including not only the direct and secondary changes in local employment, but also those personnel who are initially affected by the proposed action. Income is the total change in local wages and salaries due to the proposed action, which includes the sum of the direct and indirect wages and salaries, plus the income of the civilian and military personnel affected by the proposed action. Population is the increase or decrease in the local population as a result of the proposed action. Implementing the MRAP action at JBCHS/ASLAC would require constructing warehouse, maintenance, and storage buildings and making road improvements on JBCHS/ASLAC. The current working estimate for the cost of these construction and road improvements (about \$262 million) was divided over the projected 6-year initial development period and entered as the change in expenditures (about \$43,700,000 per year). The proposed action would not change the number of military or civilian personnel assigned to JBCHS/ASLAC. At this time no new hires are expected to fulfill the proposed mission requirements.

THE SIGNIFICANCE OF SOCIOECONOMIC IMPACTS

Once model projections are obtained, the Rational Threshold Value (RTV) profile allows the user to evaluate the significance of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, income, employment, and population. These evaluations identify the positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries that provide a basis for comparing an action's impact on the historical fluctuation in a particular area.

Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

		Increase	Decrease
Sales Volume	X	100%	75%
Income	X	100%	67%
Employment	X	100%	67%

Population X 100% 50%

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary, but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economics than are expansion.

The major strengths of the RTV are its specificity to the region under analysis and its basis on actual historical data for the region. The EIFS impact model, in combination with the RTV, has proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

The following are the EIFS input and output data for the proposed action and the RTV values for the ROI.

EIFS REPORT

PROJECT NAME

MRAP JBCHS/ASLAC EA

STUDY AREA

45015 Berkeley County, SC
45019 Charleston County, SC
45035 Dorchester County, SC

FORECAST INPUT

Change In Local Expenditures	\$43,700,000
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	\$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	3.42	
Income Multiplier	3.42	
Sales Volume – Direct	\$43,700,000	
Sales Volume – Induced	\$105,754,000	
Sales Volume – Total	\$149,454,000	0.76%
Income – Direct	\$8,749,697	
Income - Induced	\$21,174,270	
Income – Total (place of work)	\$21,923,960	0.27%
Employment – Direct	232	
Employment – Induced	562	
Employment – Total	795	0.27%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	10.28%	10.11%	3.71%	2.20%
Negative RTV	-5.78%	-5.55%	-2.92%	-1.34%

RTV DETAILED

SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	884718	3866218	0	0	0
1970	974584	4025032	158814	-4163	-0.1
1971	1038455	4112282	87250	-75727	-1.84
1972	1135706	4349754	237472	74495	1.71
1973	1265687	4569130	219376	56399	1.23
1974	1476917	4799980	230850	67873	1.41
1975	1652592	4924724	124744	-38233	-0.78
1976	1880169	5302076	377352	214375	4.04
1977	2054515	5423920	121843	-41134	-0.76
1978	2319680	5706413	282493	119516	2.09
1979	2614540	5778133	71721	-91256	-1.58
1980	2938345	5700389	-77744	-240721	-4.22
1981	3315429	5835155	134766	-28211	-0.48
1982	3529276	5858598	23443	-139534	-2.38
1983	3798631	6115796	257198	94221	1.54
1984	4317362	6648737	532941	369964	5.56
1985	4616440	6878496	229758	66781	0.97
1986	4892814	7143509	265013	102036	1.43
1987	5253767	8143339	999830	836853	10.28
1988	5670278	7711578	-431760	-594737	-7.71
1989	6027059	7774906	63328	-99649	-1.28
1990	6544017	8049141	274235	111258	1.38
1991	6754930	7970817	-78324	-241301	-3.03
1992	7007993	7989112	18295	-144682	-1.81
1993	7142122	7927756	-61356	-224333	-2.83
1994	7107716	7676334	-251422	-414399	-5.4
1995	7050844	7403386	-272948	-435925	-5.89
1996	7277251	7422796	19410	-143567	-1.93
1997	7746067	7746067	323271	160294	2.07
1998	8404650	8236557	490490	327513	3.98
1999	9195810	8827977	591420	428443	4.85
2000	9765031	9081479	253501	90524	1

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	1001918	4378382	0	0	0
1970	1115173	4605665	227283	-27157	-0.59
1971	1204701	4770616	164951	-89489	-1.88
1972	1324945	5074539	303923	49483	0.98
1973	1480789	5345648	271109	16669	0.31
1974	1735887	5641633	295985	41545	0.74
1975	1968895	5867307	225674	-28766	-0.49
1976	2221288	6264032	396725	142285	2.27
1977	2423749	6398698	134666	-119774	-1.87
1978	2744685	6751925	353228	98788	1.46
1979	3116334	6887098	135173	-119267	-1.73
1980	3551989	6890859	3761	-250679	-3.64
1981	4046179	7121275	230416	-24024	-0.34
1982	4367093	7249374	128099	-126341	-1.74
1983	4724755	7606856	357481	103041	1.35
1984	5366172	8263905	657049	402609	4.87
1985	5773429	8602409	338505	84065	0.98
1986	6153016	8983404	380994	126554	1.41
1987	6629921	10276377	1292974	1038534	10.11
1988	7151087	9725478	-550899	-805339	-8.28
1989	7327192	9452077	-273401	-527841	-5.58
1990	8465905	10413063	960986	706546	6.79
1991	8824045	10412373	-691	-255131	-2.45
1992	9224895	10516380	104008	-150432	-1.43
1993	9525536	10573345	56965	-197475	-1.87
1994	9723638	10501529	-71816	-326256	-3.11
1995	9830228	10321739	-179791	-434231	-4.21
1996	10273872	10479349	157610	-96830	-0.92
1997	10946096	10946096	466747	212307	1.94
1998	11824416	11587928	641832	387392	3.34
1999	12685662	12178235	590307	335867	2.76
2000	13462867	12520466	342231	87791	0.7

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	147764	0	0	0
1970	152019	4255	-1382	-0.91
1971	151065	-954	-6591	-4.36
1972	153498	2433	-3204	-2.09
1973	162199	8701	3064	1.89
1974	172213	10014	4377	2.54
1975	176145	3932	-1705	-0.97
1976	183618	7473	1836	1
1977	188037	4419	-1218	-0.65
1978	197655	9618	3981	2.01
1979	204706	7051	1414	0.69
1980	209800	5094	-543	-0.26
1981	217639	7839	2202	1.01
1982	217489	-150	-5787	-2.66
1983	223072	5583	-54	-0.02
1984	237516	14444	8807	3.71
1985	247821	10305	4668	1.88
1986	256642	8821	3184	1.24
1987	264769	8127	2490	0.94
1988	272325	7556	1919	0.7
1989	277402	5077	-560	-0.2
1990	291237	13835	8198	2.81
1991	290011	-1226	-6863	-2.37
1992	285927	-4084	-9721	-3.4
1993	285835	-92	-5729	-2
1994	284127	-1708	-7345	-2.59
1995	284522	395	-5242	-1.84
1996	286335	1813	-3824	-1.34
1997	297792	11457	5820	1.95
1998	309565	11773	6136	1.98
1999	322055	12490	6853	2.13
2000	328144	6089	452	0.14

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	333836	0	0	0
1970	336669	2833	-3936	-1.17
1971	345034	8365	1596	0.46
1972	354123	9089	2320	0.66
1973	362524	8401	1632	0.45
1974	377614	15090	8321	2.2
1975	388945	11331	4562	1.17
1976	402464	13519	6750	1.68
1977	407216	4752	-2017	-0.5
1978	417483	10267	3498	0.84
1979	425158	7675	906	0.21
1980	433615	8457	1688	0.39
1981	445278	11663	4894	1.1
1982	453298	8020	1251	0.28
1983	460906	7608	839	0.18
1984	467325	6419	-350	-0.07
1985	469353	2028	-4741	-1.01
1986	480947	11594	4825	1
1987	490378	9431	2662	0.54
1988	492783	2405	-4364	-0.89
1989	502823	10040	3271	0.65
1990	508851	6028	-741	-0.15
1991	523852	15001	8232	1.57
1992	530382	6530	-239	-0.05
1993	531913	1531	-5238	-0.98
1994	529376	-2537	-9306	-1.76
1995	522192	-7184	-13953	-2.67
1996	517970	-4222	-10991	-2.12
1997	528354	10384	3615	0.68
1998	535674	7320	551	0.1
1999	546169	10495	3726	0.68
2000	550444	4275	-2494	-0.45

***** End of Report *****

APPENDIX E

Air Emission Calculations

ASLAC Construction and Operations Emission Calculations

Table B-10 Construction Equipment Use (JBCHS)

Equipment Type	Number of Units	Days on Site	Hours Per Day	Operating Hours
Excavators Composite	2	230	4	1840
Rollers Composite	10	230	8	18400
Rubber Tired Dozers Composite	10	230	8	18400
Plate Compactors Composite	4	230	4	3680
Trenchers Composite	4	230	8	7360
Air Compressors	4	230	4	3680
Cement & Mortar Mixers	4	230	6	5520
Cranes	4	230	7	6440
Generator Sets	4	230	4	3680
Tractors/Loaders/Backhoes	8	230	7	12880
Pavers Composite	2	230	8	3680
Paving Equipment	4	230	8	7360

Table B-11 Construction Equipment Emissions (Tons per Year) (JBCHS)

Equipment	CO	NO _x	VOC	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Excavators Composite	0.5362	1.2189	0.1559	0.0012	0.0669	0.0669	110.0147
Rollers Composite	3.9937	7.9183	1.2217	0.0071	0.5529	0.5529	616.8866
Rubber Tired Dozers Composite	14.6837	30.0582	3.3525	0.0226	1.2962	1.2962	2199.7719
Plate Compactors Composite	0.0485	0.0604	0.0095	0.0001	0.0038	0.0038	7.9374
Trenchers Composite	1.8695	3.0313	0.6811	0.0026	0.2534	0.2534	216.0943
Air Compressors	0.6958	1.4883	0.2267	0.0013	0.1037	0.1037	117.0375
Cement and Mortar Mixers	0.1235	0.1815	0.0311	0.0003	0.0123	0.0123	20.0049
Cranes	1.9355	5.1843	0.5727	0.0044	0.2304	0.2304	414.3081
Generator Sets	0.6368	1.2843	0.1977	0.0013	0.0791	0.0791	112.2285
Tractors/Loaders/Backhoes	2.6169	4.9882	0.7754	0.0050	0.3856	0.3856	430.2330
Pavers Composite	1.0909	1.9885	0.3612	0.0016	0.1415	0.1415	143.4018
Paving Equipment	0.1959	0.3904	0.0610	0.0006	0.0232	0.0232	46.4707
Total	28.42	57.77	7.65	0.0481	3.15	3.15	4434.39

Table B-12 Painting (JBCHS)

VOC Content	0.84	lbs/gallon	
Coverage	400	sqft/gallon	
Emission Factor	0.0021	lbs/sqft	
Building/Facility	Wall Surface	VOC [lbs]	VOC [tpy]
All Buildings Combined	1600000	6720.0	3.360
Total	1600000	6720.00	3.36

Source: SCAQMD 1993

Table B-13 Delivery of Concrete/Materials for Batch Plant (JBCHS)

Number of Deliveries	20						
Number of Trips	2						
Miles Per Trip	30						
Days of Construction	230						
Total Miles	276000						
Pollutant	CO	NO _x	VOC	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Emission Factor (lbs/mile)	0.0219	0.0237	0.0030	0.0000	0.0009	0.0007	2.7
Total Emissions (lbs)	6057.97	6544.67	825.99	7.08	236.28	204.06	750683.8
Total Emissions (tpy)	3.03	3.27	0.41	0.0035	0.12	0.10	375.28

Source: CARB 2007a

Table B-14 Surface Disturbance (JBCHS)

TSP Emissions	80	lb/acre				
PM ₁₀ /TSP	0.45					
PM _{2.5} /PM ₁₀	0.15					
Period of Disturbance	30	days				
Capture Fraction	0.5					
Building/Facility	Area (acres)	TSP(lbs)	PM ₁₀ (lbs)	PM ₁₀ (tons)	PM _{2.5} (lbs)	PM _{2.5} (tons)
Demolition	47.5	114000	51300	25.65	3848	1.92
Total	47.5	114000	51300	25.65	3848	1.92

Sources: USEPA 1995 and USEPA 2005

Table B-15 Worker Commutes (JBCHS)

Number of Workers	60						
Number of Trips	2						
Miles Per Trip	30						
Days of Construction	230						
Total Miles	828000						
Pollutant	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	CO ₂
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001	1.1
Total Emissions (lbs)	8734.11	913.19	893.57	8.90	70.43	43.82	910412.7
Total Emissions (tpy)	4.37	0.46	0.45	0.0044	0.04	0.02	455.21

Source: CARB 2007a

Table B-16 Total Construction Emissions (Tons per Year) (JBCHS)

Activity/Source	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	CO ₂
Construction Equipment	28.42	57.77	7.85	0.0481	3.15	3.15	4434.39
Painting	0.00	0.00	3.36	0.0000	0.00	0.00	0.00
Delivery of Equipment and Supplies	3.03	3.27	0.41	0.0035	0.12	0.10	375.28
Surface Disturbance	0.00	0.00	0.00	0.0000	25.65	1.92	0.00
Worker Commutes	4.37	0.46	0.45	0.0044	0.04	0.02	455.21
Total Construction Emissions	35.8	61.5	11.9	0.1	29.0	5.2	5264.9

Table B-17 Boiler Emissions (JBCHS)

Gross Area	871200	sf					
Heating Requirements	99000	btu/sf					
Total Annual Heat Required	86249	MMBTU					
Heating Value	150	MMBTU/1000 Gallons					
Total #2 Oil Used	575.0	10 ³ Gallons					
Pollutant	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	
Emission Factor (lb/1000 gal)	5	24	2.493	0.1	2	2	
Total Emissions (tons)	2.7	13.2	1.4	0.1	1.1	1.1	

1. Emission factors for all pollutants were obtained from U.S. EPA's AP-42, Section 1.3. Conservatively assume that PM₁₀ = PM.

2. Assumed sulfur concentration 1%

3. Heating requirements obtained from Commercial Buildings Energy Consumption Survey, DOE 2003

Table B-18 Boiler Emissions (SIAD)

Gross Area	871200	sf					
Heating Requirements	99000	btu/sf					
Total Annual Heat Required	86249	MMBTU					
Heating Value	150	MMBTU/1000 Gallons					
Total #2 Oil Used	575.0	10 ³ Gallons					
Pollutant	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}	
Emission Factor (lb/1000 gal)	5	24	2.493	0.1	2	2	
Total Emissions (tons)	1.44	6.90	0.72	0.03	0.57	0.57	

1. Emission factors for all pollutants were obtained from U.S. EPA's AP-42, Section 1.3. Conservatively assume that PM₁₀ = PM.

2. Assumed sulfur concentration 1%

3. Heating requirements obtained from Commercial Buildings Energy Consumption Survey, DOE 2003

Table B-19 Emergency Generator Emissions (Both Installations)

Pollutant	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}		
Emission Factor [lb/hp-hr]	0.0055	0.024	0.000705	0.00809	0.0007	0.0007		
Generator Rating [kW]	Estimated Run Time (hr/yr)	Annual Power Output [kw-hr/yr]	CO	NO _x	VOC	SO _x	PM ₁₀	PM _{2.5}
100	100	10000	0.04	0.16	0.00	0.05	0.00	0.00
Total Emissions [tpy]			0.04	0.16	0.00	0.05	0.00	0.00

1. Emission factors for all pollutants were obtained from U.S. EPA's AP-42, Section 3.4 Large Stationary Diesel And All Stationary Dual-fuel Engines

Calculation of Train Emissions for Transporting MRAP Fleet from Red River Depot to JBCHS

MRAP Fleet to Transport 3585

Number of MRAPS per Train Shipment 240

Number of Train Shipments to Transport Fleet 15

Estimated Weight of MRAP Fleet 116,199,340 lbs (58,099.67 tons)

Average Tonnage per Train Shipment 3873.311 tons/shipment

CSX Fuel Efficiency 466 mi/t/g (CSX 2012)

Estimated distance from Red River Army Depot to JBCHS 1091 mi

$466 \text{ mi/t/g} \times 3873.31 \text{ tons mi} \times 1 \text{ g/1091 mi} = 1,654.41 \text{ g}$

EPA Emission Factors for Locomotives				
	Emission Factors (g/gal)*	Gallons of Fuel/Trip	Emissions/Trip	Total Emissions (15 Trips)
HC	10	1,654.41	16,544.1 g	248,161.5
CO	26.6	1,654.41	44,007.31 g	660,109.6
NO _x	270	1,654.41	446,690.7 g	670,0361
PM	6.7	1,654.41	11,084.55 g	166,268.2
Source: EPA 1997				

Calculation of Truck Emissions from MRAP Transport to Staging Area

MRAP Fleet 3585

Number of MRAPS per Truck 2

Number of Trips 1793

Average Miles per Trip 10

Estimated Time per Trip 30 Minutes (17,930 Hours)

Air Emissions

Internal Combustion Engines - Reciprocating - Diesel

		Date:	6/19/2013
1	Company Name:	ASLAC	
	Facility Name:	Truck transport	
	Equipment Name:	ASLAC	
2	Enter Rated Mechanical Output (hp)		600
3	Enter Sulfur Content of Diesel Fuel		0.05
4	Enter Number Hours Operated per Year		17930

The calculated emissions will be :

Emission Factors listed below are for **DIESEL Engines**

Greater Than or Equal to 600 hp

Engine Horsepower 600

Pollutant	Emission Factor (lbs/hp-hr)	Emission Rate (lbs/hr) [c x hp Rating]	Emissions (tons/yr) [d x hr/2000]
Particulate Material - PM ₁₀	0.0007	0.420	3.7653
Sulfur Dioxide - SO ₂	0.0004045	0.243	2.1758
Nitrogen Oxides - NO _x	0.024	14.400	129.0960
Volatile Organic Compounds - VOC	0.000705	0.423	3.7922
Carbon Monoxide - CO	0.0055	3.300	29.5845

Source: Utah Department of Environmental Quality- Division of Air Quality

Appendix F
Planned Projects at JBCHS
Over the Next 5 Years

TABLE 1

Proposed Action Purpose and Need*JB CHS Installation Development Environmental Assessment*

Proposed Action Component	Location	Purpose	Need
Construct Air Force Medical Operations Agency/Medical War Reserve Materiel (WRM) Industrial Operation (AFMOA/SGALW); Consolidated Storage and Distribution Center (CSDC) Facility.	JB CHS-AB, North Area	Provide new or expanded operating facility for existing mission	To eliminate the limitations of the current arrangement; the existing General Services Administration (GSA) leased facility is located off-base and is inadequate to accommodate assigned WRM assemblages, tactical assets for outside storage and administrative space for CSDC leadership, procurement, technicians, and biomedical equipment repair work center.
Construct Speciation Operations Low Level (SOLL) II Facility	JB CHS-AB, North Area	Provide new or expanded operating facility for existing mission	To eliminate the limitations of the current arrangement; the existing operations facility is more than 50 years old and is too small, obsolete, and inadequate to support JB CHS mission requirements.
Construct Addition to Passenger Terminal Building 164	JB CHS-AB, South Area	Provide new or expanded operating facility for existing mission	To renovate and construct new additions to the existing facility to provide a state-of-the-art facility that will support the JB CHS-AB mission.
Relocate Simpson Drive	JB CHS-AB, South Area	Install new road between North Davis & Arthur Drives	To provide access and parking for the proposed Visitors Quarters.
Perform Air-Basewide Parking Improvements	JB CHS-AB	Install new road between North Davis & Arthur Drives	To eliminate overflow parking on grassy areas, accommodate parking needs for the proposed new construction projects, streamline the check-in and check-out of Viper CTK government vehicles, provide a cargo laydown area, and provide long-term parking for aircrew.
Demolish Building 550	JB CHS-AB, North Area	Remove building and utilities back to main installation	To accommodate the construction of SOLL II facility.
Perform Repairs and Additions to Taxiway Delta	JB CHS-AB	Resurface and expand runways and taxiways	To comply with Unified Facilities Criteria (UFC) 3-260-01 and AT/FP physical security measures and to eliminate the limitations of the current arrangement; the continued lack of adequate taxiway pavements with modern and properly located lighting systems could jeopardize the ability of the base to provide an appropriate response under crisis conditions. Continued aircraft operations on inadequate and deteriorated taxiways would result in higher maintenance costs, increased frequency of repairs, and an ever-increasing potential for loss of aircraft, equipment, and personnel.

TABLE 1

Proposed Action Purpose and Need*JB CHS Installation Development Environmental Assessment*

Proposed Action Component	Location	Purpose	Need
Perform Repairs and Additions to South Taxiway	JB CHS-AB	Resurface and expand runways and taxiways	To comply with AT/FP physical security measures and eliminate the limitations of the current arrangement; the continued lack of adequate taxiway pavements with modern and properly located lighting systems could jeopardize the ability of the base to provide an appropriate response under crisis conditions. Continued aircraft operations on inadequate and deteriorated taxiways would result in higher maintenance costs, increased frequency of repairs, and an ever-increasing potential for loss of aircraft, equipment, and personnel.
Perform Repairs and Additions to Aeroclub Taxiway	JB CHS-AB	Resurface and expand runways and taxiways	To comply with AT/FP physical security measures and eliminate the limitations of the current arrangement; the continued lack of adequate taxiway pavements with modern and properly located lighting systems could jeopardize the ability of the base to provide an appropriate response under crisis conditions. Continued aircraft operations on inadequate and deteriorated taxiways would result in higher maintenance costs, increased frequency of repairs, and an ever-increasing potential for loss of aircraft, equipment, and personnel.
Perform Repairs and Additions to C-17 Landing Zone/Runway 05/23	JB CHS-AB, NAAF	Resurface and expand runways and taxiways	To reduce maintenance costs, the frequency of major repairs, and the potential for loss of aircraft, equipment, and personnel. Continued lack of an adequate C-17 landing zone could jeopardize the ability of the base to provide appropriate training for short field landings, causing aviation issues and potentially leading to mission degradation.
Perform Repairs and Additions to Taxiways Alpha and Bravo	JB CHS-AB, NAAF	Resurface and expand runways and taxiways	To reduce maintenance costs, the frequency of major repairs, and the potential for loss of aircraft, equipment, and personnel.
Construct Army Strategic Logistics Activity Charleston (ASLAC) Battery Facility	JB CHS-WS, North Side District	Provide new or expanded operating facility for existing mission	To provide a permanent site for dry cell battery storage. Currently dry cell batteries are stored in a large area maintenance shelter (LAMS) on trickle charge. The proposed project would provide enough permanent capacity to discontinue using the LAMS as a battery storage facility.

TABLE 1

Proposed Action Purpose and Need*JB CHS Installation Development Environmental Assessment*

Proposed Action Component	Location	Purpose	Need
Construct ASLAC Tactical Equipment and Paint/Blast Compound	JB CHS-WS, North Side District	Provide new or expanded operating facility for existing mission	To eliminate the limitations of the maintenance bays, provide for more efficient vehicle maintenance, and eliminate use of inefficient buildings designed and constructed for missile maintenance.
Construct ASLAC Consolidated Supply Operations Facility	JB CHS-WS, North Side District	Provide new or expanded operating facility for existing mission	To maintain and upload equipment from Army Prepositioned Stock 3 (APS-3) ships.
Construct ASLAC Medical Supply and Maintenance Facility	JB CHS-WS, North Side District	Provide new or expanded operating facility for existing mission	To consolidate functions for more efficient operation.
Construct ASLAC Logistics Support Facility	JB CHS-WS, North Side District	Provide new or expanded operating facility for existing mission	To accommodate and consolidate government staff who are spread across four facilities.
Construct ASLAC Dehumidified Storage Facilities	JB CHS-WS, North Side District	Provide new or expanded operating facility for existing mission	To protect assets until they are loaded onto APS-3 ships.
Replace Menriv Fire Station	JB CHS-WS, West Side Housing District	Provide new or expanded operating facility for existing mission	To eliminate the limitations of the current arrangement; lack of an adequately sized facility has prevented JB CHS-WS from obtaining a 100-foot ladder truck, the current standard, and also limits the stocking of appropriate equipment in this district to permit an effective emergency response.
Construct New Navy Exchange	JB CHS-WS, West Side Housing District	Provide new or expanded operating facility for existing mission	To consolidate Navy Exchange functions for a more efficient operation.
Construct New Fitness Center	JB CHS-WS, West Side Housing District	Provide new or expanded operating facility for existing mission	To eliminate the limitations of the current arrangement; the existing fitness center is inadequate in size and capability to service the base.
Construct Furniture, Fixtures, and Equipment (FF&E) Warehouse	JB CHS-WS, West Side Housing District	Provide new or expanded operating facility for existing mission	To comply with DoD 4145.19-R-I and AFI 32-6004 and provide adequate warehouse space for mission needs; the existing warehouse is too small and inadequate to accommodate mission needs.
Demolish Building 706, Navy Exchange	JB CHS-WS, West Side Housing District	Remove building and utilities back to main installation	To accommodate construction of a new Navy Exchange facility.
Demolish Buildings 769, 771, 776, 1685, 1686, and 1678	JB CHS-WS, West Side Housing District	Remove buildings and utilities back to main installation	To accommodate construction of the new base fitness center.

TABLE 1

Proposed Action Purpose and Need*JB CHS Installation Development Environmental Assessment*

Proposed Action Component	Location	Purpose	Need
Construct New Headquarters Fire Station	JB CHS-WS, East Side Housing District	Provide new or expanded operating facility for existing mission	To eliminate the limitations of the current arrangement; the Headquarters Fire Station does not meet the AT/FP standoff distance requirements and is vulnerable to attack. Lack of an adequately sized facility has prevented JB CHS-WS from obtaining a 100-foot ladder truck. The centrally located Headquarters Fire Station (Station 1) in District 1 has an equipment bay large enough to accommodate the assigned 55-foot ladder truck, but not to accommodate the recommended 100-foot ladder truck.
Construct Addition to Building 90	JB CHS-WS, East Side Housing District	Provide new or expanded operating facility for existing mission	To provide a modern fire/rescue station which conforms to current USAF and DON standards for location, size, and interior configuration, and also maximizes base fire protection, ensures the safety of station personnel, and supports the primary mission.
Construct Construction Material Shed in B2033 Area	JB CHS-WS, East Side Housing District	Provide new or expanded operating facility for existing mission	To prevent runoff of building materials into the storm drain system.
Install ARMAG Portable Arms Vault	JB CHS-WS, East Side Housing District	Provide new or expanded operating facility for existing mission	To eliminate the limitations of the current arrangement; the armory is too small and inadequate to properly store the weapons and equipment required for daily use.
Demolish Building 90	JB CHS-WS, East Side Housing District	Remove building and utilities back to main installation	To accommodate construction of a new Headquarters Fire Station.
Demolish Buildings 5, 36, and 71	JB CHS-WS, East Side Housing District	Remove buildings and utilities back to main installation	To eliminate the limitations of the current arrangement; the buildings were built in the 1940s and are obsolete and beyond their projected useful life; repair/rehabilitation would be cost-prohibitive.
Construct Naval Munitions Command Transfer Facility	JB CHS-WS, Ordnance District	Provide new or expanded operating facility for existing mission	To provide an adequate and efficiently configured ordnance transfer facility to load and download ordnance into and out of ISO (International Organization for Standardization) containers for the USMC and Army Maritime Prepositioning Fleet programs.
Demolish Buildings 58, 65, 91, 96, 296, 940, and 967	JB CHS-WS, Ordnance District	Remove buildings and utilities back to main installation	To accommodate construction of a Navy Munitions Command (NMC) transfer facility.

TABLE 1

Proposed Action Purpose and Need*JB CHS Installation Development Environmental Assessment*

Proposed Action Component	Location	Purpose	Need
Construct Port Ops Storage/Maintenance Facility	JB CHS-WS, Waterfront District	Provide new or expanded operating facility for existing mission	To replace the demolished Building 32.
Construct Space and Naval Warfare Systems Center (SPAWAR) Satellite Communications Facility	JB CHS-WS, South Annex District	Provide new or expanded operating facility for existing mission	To provide additional laboratory space to accommodate existing and future Software Defined Radio (SDR) projects.
Construct SPAWAR Cyber Information Facilities	JB CHS-WS, South Annex District	Provide new or expanded operating facility for existing mission	To provide additional laboratory and testing space to support research, development, and testing of network defense, network exploit, and network attack tools and capabilities.
Construct SPAWAR Research, Development, Test, and Evaluation (RDT&E) Lab Facility	JB CHS-WS, South Annex District	Provide new or expanded operating facility for existing mission	To provide additional laboratory and testing space to accommodate computer servers, telecommunications interface equipment, and other directly related equipment.
Construct South Annex Fire Station	JB CHS-WS, South Annex District	Provide new or expanded operating facility for existing mission	To provide an adequate and efficiently configured facility for fire protection.
Demolish Building 3305	JB CHS-WS, South Annex District	Remove building and utilities back to main installation	To accommodate construction of a new South Annex Fire Station.
Perform Weapons-Basewide Parking Improvements	JB CHS-WS	Provide more parking spaces closer to operating facilities	To eliminate overflow parking on grassy areas and accommodate parking needs for the proposed new construction projects

