
DRAFT ENVIRONMENTAL ASSESSMENT
& DRAFT FINDING OF NO SIGNIFICANT IMPACT
FOR
RUNWAY VEGETATIVE OBSTRUCTION REMOVAL
AT
HUNTER ARMY AIRFIELD, GEORGIA



OCTOBER 2016

In compliance with the National Environmental Policy Act of 1969

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AT HUNTER ARMY AIRFIELD, GEORGIA**

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DRAFT FINDING OF NO SIGNIFICANT IMPACT (FNSI)

1.0 Introduction

The Army's mission is to fight and win the nation's wars, respond to national security threats, and promote peace. The Army does this by providing troops trained, organized, and equipped to provide rapid and sustained military operations, from peacekeeping and security operations to high intensity military conflicts. Hunter Army Airfield (HAAF) is a geographically separated component of Fort Stewart located approximately 40 miles to its east. HAAF encompasses 5,400 acres of land in Chatham County, Georgia, and forms a common boundary with the City of Savannah. The primary purpose of HAAF is to operate as a Strategic Deployment Airfield for the 3rd Infantry Division (3ID), as well as to provide aviation support for the Installation's tenant units. HAAF also supports General Support Aviation Missions, Joint Operations Support Airlift Command flights, and other Department of Defense mission requirements, to include contingency operations and aviation training. Maintaining the operational capacity, peak safety, and efficiency levels of its airfield is accordingly of prime importance.

Department of the Army and Federal Aviation Administration (FAA) safety standards require the removal of all obstructions on airfields, unless the obstruction has been determined necessary by an FAA aeronautical study, such as navigational aids. The FAA standards used to determine an obstruction to air navigation are consistent with Army airfield safety measures as identified in United Facilities Criteria (UFC) 3-260-01, *Airfield and Heliport Planning and Design*. A survey conducted in 2011 on HAAF identified several areas of obstructive vegetation on HAAF, obstructions which were determined to pose a potential safety hazard for aviation assets at HAAF (Appendix A). Since the 2011 survey, additional vegetative obstructions have grown into the runway approach and safety zones of the airfield.

This Draft Environmental Assessment will analyze the potential environmental impacts associated with removal of runway vegetative obstructions at HAAF, and is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code Section [USC] 4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations that implement NEPA (Title 40 Code of Federal Regulations [CFR], Parts 1500 to 1508); and Army Regulation 200-2, *Environmental Effects of Army Actions*, as promulgated in 32 CFR 651.

2.0 Purpose and Need

The purpose of the proposed action is to remedy immediate safety concerns associated with vegetation surrounding the runway and to prevent future airspace obstructions. The proposed action is necessary to reduce the potential of obstructive harm to aircraft and passengers that could occur from vegetation penetrating the airspace.

3.0 Description of the Proposed Action and Alternatives

Proposed Action: The U.S. Army proposes to remove all current vegetative airfield safety hazards, totaling approximately 350 acres, and proactively establish a maintenance footprint to prevent future airspace vegetative obstructions.

Alternative I: Clearing with Select Grubbing and Grading (preferred). Under this alternative, all of the vegetation within the 350 acre project footprint that has been identified as airfield safety obstructions will

be removed. Approximately 240 acres are uplands and will be grubbed and graded, including stump removal. Where bare soil remains, grass seed will be applied to establish permanent ground cover. Vegetation in wetland areas (approximately 110 acres) will be cleared by hand, mowed, or removed using special equipment (such as mats), down to within six inches of the ground surface, with no grubbing and grading. This will ensure wetland areas remain unhindered in their ability to filter and/or maintain the flow of water and will prevent the fill of wetland systems. Future maintenance will consist of mowing established grassy areas and selectively mowing / hand clearing wetland areas in a manner that does not compromise aquatic function.

Alternative II: Clearing with Grubbing and Grading. Under this alternative, all vegetation that has been identified as airfield safety obstructions will be removed and the entire 350 acre footprint (uplands and wetlands) will be grubbed and graded, with grass seed applied to bare soil to establish permanent ground cover. Future maintenance will consist of mowing established grass.

Alternative III: No Action / Status Quo. Under this alternative, none of the vegetation identified as airfield safety obstructions will be removed. This alternative does not meet the purpose and need for the proposed action; however, the CEQ regulations that implement NEPA require that the decision-maker and the reader be presented with a clear basis for choice among alternatives, which includes the no action alternative (40 CFR 1502.14[d]). It also serves as a benchmark against which to compare the impacts of the action alternatives.

4.0 Environmental Analysis

Chapter 3 of the Draft EA provides a description of the existing environmental conditions at and surrounding the proposed action area. In the same section, the Draft EA also analyzed potential impacts of the alternatives on Water Quality and Resources; Cultural Resources; Land Use, Visual, and Recreational Resources; and Health and Safety. Impacts are not anticipated to Groundwater, Biological Resources, Air Quality, Noise, Socioeconomics, Provision for the Handicapped/Environmental Justice/Protection of Children, and Transportation; accordingly, these resources are not discussed in detail in the main body of the Draft EA, but are instead briefly summarized in its Appendix B. Table 1 summarizes the finding of Draft EA Chapter 3, including cumulative impacts.

Type of Impact	Alternative I Select Grubbing and Grading (Preferred)	Alternative II Grubbing and Grading	Alternative III (No Action/Status Quo)
Water Quality and Resources			
Direct / Indirect	Minor Adverse	Moderate Adverse	None
Cumulative	Negligible Adverse	Minor Adverse	None

Cultural Resources			
Direct / Indirect	Negligible Minor	Minor Adverse	None
Cumulative	Negligible Adverse	Negligible Adverse	None
Land Use, Visual Resources, and Recreation			
Direct / Indirect	Negligible Adverse	Negligible Adverse	None
Cumulative	Negligible Beneficial	Negligible Beneficial	None
Health and Safety			
Direct / Indirect	Moderate Beneficial	Moderate Beneficial	Minor Adverse
Cumulative	Minor Beneficial	Minor Beneficial	Minor Adverse

Table 1: Summary of Environmental Impacts

5.0 Mitigation and Monitoring Measures

Implementation of the preferred alternative (Alternative I) will require environmental mitigation and monitoring measures as described in detail in EA Chapter 3 and summarized below.

Water Resources. HAAF will comply with Georgia erosion and sedimentation control regulations by preparing an erosion and sedimentation pollution control plan which will entail low impact development features to meet the same or better pre-construction runoff flow rates as expected under Section 438 of the Energy Independence and Security Act and the Coastal Stormwater Supplement.

Impacts to water quality will be minimized through the use of standard construction best management practices (BMPs) for minimizing soil erosion and any other potential contamination from construction activities. Stormwater will be managed through the design and implementation of standard stormwater engineering controls, such as low impact development and maintaining natural drainage patterns. All required stormwater protection measures, BMPs, and minimization efforts will be undertaken to limit impacts from runoff which will be verified through weekly inspections by Installation environmental staff. Wetland areas will be flagged / marked on the ground prior to vegetation removal to ensure the contractor clearly understands the physical demarcation limits of all wetland areas. Periodic inspections of wetland areas will occur throughout the duration vegetation removal activities to ensure these boundaries are maintained. The discharge of dredged or fill material into streams and wetlands is not permitted.

The Installation is responsible for properly closing the identified abandoned well in accordance with State of Georgia and Federal Safe Drinking Water Act requirements, and all work shall be accomplished by a certified well drill and/or certified geologist. The contractor will be required to avoid the abandoned well until the Army has properly closed it.

Cultural Resources. Although the City of Savannah and the U.S Air Force (*owner and operator of HAAF lands at that time*) exhumed all known remains previous cemetery locations and relocated them to an off-Post cemetery in 1951, there is still a possibility that unmarked graves may have been missed and are still on site. Accordingly, the construction contractor shall contact the Installation Environmental Office prior

to initiating any vegetation removal at these cemetery locations. This will allow appropriate Installation environmental staff to monitor all ground disturbance and halt work if human remains and/or burial goods are discovered. Although no maps indicating the location of these cemeteries is included in the Draft EA, the construction contractor will be provided with the cemetery locations and the known limits of their boundaries prior to the start of work in order to coordinate and plan the vegetation removal and monitoring schedule.

Health and Safety. The construction contractor will be required to prepare and submit a health and safety plan to the Installation Safety Office who must approve the plan prior to the start of work.

6.0 Public Review and Comments

The *Draft EA for Runway Vegetative Obstructions Removal on HAAF, Georgia* will be available for a 30-day public review period (October 21-November 19, 2016) at the Live Oak and Oglethorpe Mall Branches of the Savannah Public Library, the Live Oak Public Library in Hinesville, and the Post Library on Fort Stewart. The Notice of Availability of the Draft EA/FNSI will be published in the *Savannah Morning News*, *Coastal Courier*, and *The Frontline* in the Savannah/Fort Stewart and City of Savannah area. Notification of the Draft EA/Draft FNSI's availability will also be mailed to the members of the regulatory community and joint land use partners with whom the Installation consults, to include the U.S. Army Corps of Engineers (Wetland Regulatory Division) and the Cities of Hinesville and Savannah, Georgia, among others. Comments received on the draft documents will be incorporated into the Final EA and included at Appendix F of the Final EA.

7.0 Conclusions

In accordance with the Council on Environmental Quality regulations, 40 CFR 1506 - 1508, implementing the National Environmental Policy Act of 1969, as amended, and Environmental Analysis of Army Actions; Final Rule, 32 CFR 651, based on the environmental analysis included in the Draft EA for Runway Vegetative Obstructions Removal on HAAF, Georgia, I conclude that the Preferred Alternative (Alternative I) will have no significant or potential significant environmental impacts; thus, preparation of an Environmental Impact Statement is not warranted

TOWNLEY R. HEDRICK
Colonel, U.S. Army
Commanding

Date

ENVIRONMENTAL ASSESSMENT

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1.0 INTRODUCTION

The Army's mission is to fight and win the nation's wars, respond to national security threats, and promote peace. The Army does this by providing troops trained, organized, and equipped to provide rapid and sustained military operations, from peacekeeping and security operations to high intensity military conflicts. Hunter Army Airfield (HAAF) is a geographically separated component of Fort Stewart located approximately 40 miles to its east. HAAF encompasses 5,400 acres of land in Chatham County, Georgia, and forms a common boundary with the City of Savannah (Figure 1). The primary purpose of HAAF is to operate as a Strategic Deployment Airfield for the 3rd Infantry Division (3ID), as well as to provide aviation support for the Installation's tenant units. HAAF also supports General Support Aviation Missions, Joint Operations Support Airlift Command flights, and other Department of Defense (DoD) mission requirements, to include contingency operations and aviation training. Maintaining the operational capacity, peak safety, and efficiency levels of its airfield is accordingly of prime importance.

In accordance with Title 14 Code of Federal Regulations (CFR), Part 139 Section 331, *Obstructions*, and United Facilities Criteria (UFC) 3-260-01, *Airfield and Heliport Planning and Design*, any physical obstruction located on an airfield that may interfere with the safety of its operations must be removed. However, there are exceptions to this requirement for manmade obstructions determined necessary for the safe operations of the airfield, as determined by the Federal Aviation Administration (FAA). These include antennae and other navigational aids, which are clearly marked and/or lighted and are factored into the airfield's official landscape for pilots utilizing the airfield. A survey conducted in 2011 on HAAF identified its existing manmade and natural obstructions. This included areas of obstructive vegetation that were determined to pose a potential safety hazard for aviation assets at HAAF (Appendix A). Since the 2011 survey, additional vegetative obstructions have grown into the runway approach and safety zones of the airfield.

This Draft EA analyzes the potential environmental impacts associated with removing runway vegetative obstructions at HAAF, and was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code Section [USC] 4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations that implement NEPA (Title 40 Code of Federal Regulations [CFR], Parts 1500 to 1508); and Army Regulation 200-2, *Environmental Effects of Army Actions*, as promulgated in 32 CFR 651.

1.1 INSTALLATION BACKGROUND

HAAF was founded in 1929 to serve as the future site of the Savannah Municipal Airport. However, in 1940 the U.S. government approved construction of an Army Air Corps base and in 1941 the Savannah Air Base opened. During World War II, the air base supported all types of bomber, fighter, transport, and cargo aircraft. In 1948, the 2nd Bomb Wing moved from Arizona to Savannah (to Chatham Field or what is now the Savannah / Hilton Head International Airport), and then to Hunter Field in 1950. Bombers predominated the airfield throughout the 1950s and most of the 1960s, until management of the field transferred from the Air Force to the Army in 1967. From that time forward, helicopters represented the majority of the aircraft located at the airfield. In 1973, HAAF went into caretaker status but in 1975 was reopened as a support facility for the reactivated mechanized infantry division at Fort Stewart. In 1980, the 24th Infantry Division (Mechanized) became part of the nation's rapid deployment force and for Fort

Stewart, the combination of Savannah's deep ports and HAAF's long runway made this region the ideal location for rapid deployment of troops and heavy mechanized equipment.

Currently, HAAF is home to the aviation elements of the 3ID (Mechanized) headquartered at FSGA, as well as a number of non-divisional units, including the 3d Aviation Brigade, 603d Aviation Support Battalion, and 260th Quartermaster Battalion; the 1st Battalion, 75th Ranger Regiment; the 3d Battalion, 160th Special Operations Aviation Regiment (Airborne); and the 224th Military Intelligence Battalion (Aerial Exploitation). Coast Guard Air Station Savannah is also located on HAAF, which is the largest helicopter unit in the Coast Guard, providing Coastal Georgia with around-the-clock search and rescue coverage of the area. The Georgia Army National Guard, Air Force and other DoD components also have either resident or temporary tenure on HAAF, due to its premiere training capabilities and strategic location.

1.2 PURPOSE AND NEED

The purpose of the proposed action is to remedy immediate safety concerns associated with vegetation surrounding the runway and to prevent future airspace obstructions. The proposed action is necessary to reduce the potential of obstructive harm to aircraft and passengers that could occur from vegetation penetrating the airspace.

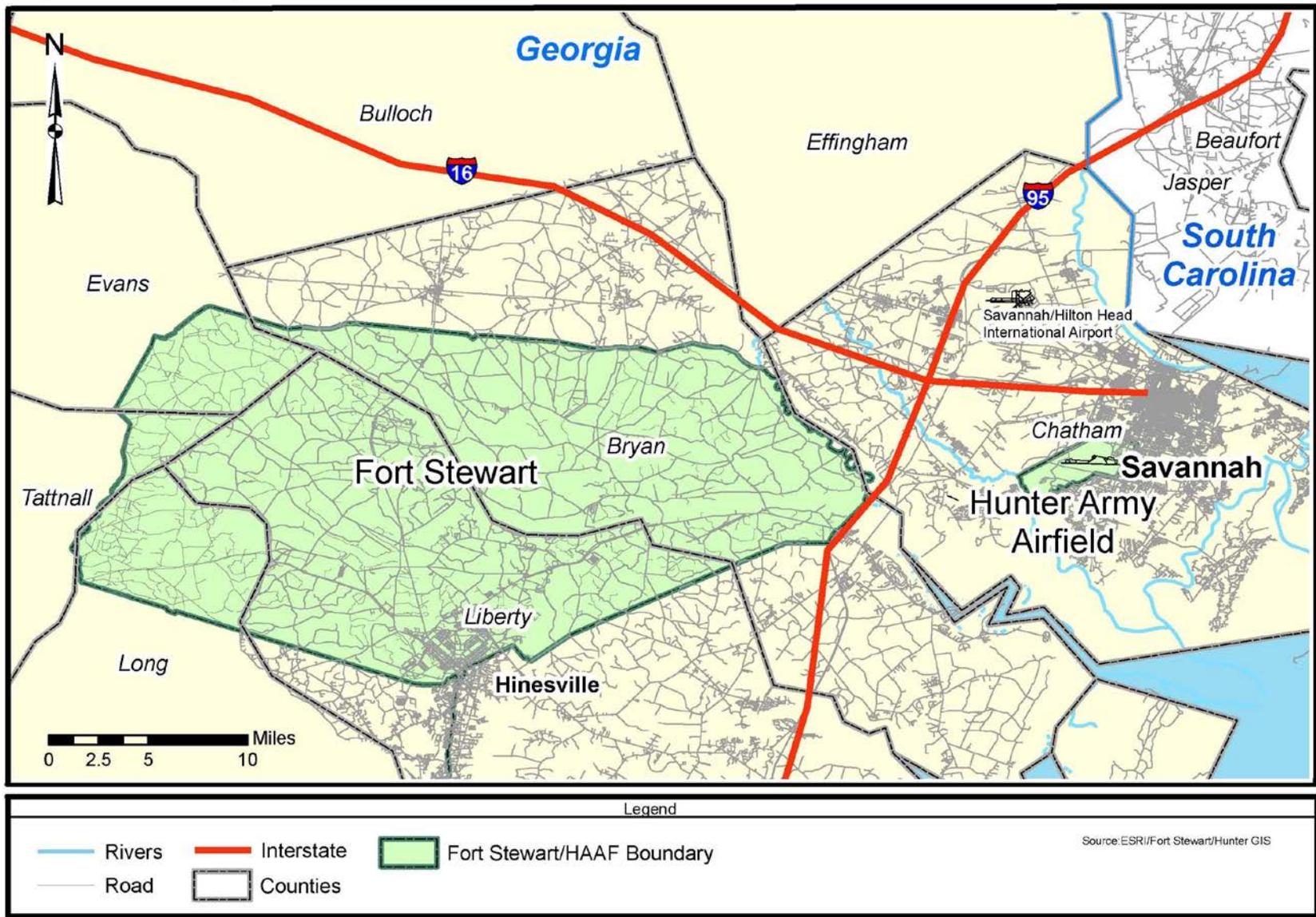


Figure 1. Location of Fort Stewart and Hunter Army Airfield.

2.0 DESCRIPTION OF THE PROPOSED ACTION & ALTERNATIVES

2.1 INTRODUCTION

For an action alternative to be considered feasible, it must meet the purpose and need of the proposed action. Chapter 2.0 provides a description of the proposed action and a description of the action alternatives determined feasible and carried forward for detailed discussion in the Draft EA. The No Action Alternative is also described.

2.2 PROPOSED ACTION

The U.S. Army proposes to remove all current vegetative airfield safety hazards, totaling approximately 350 acres, and proactively establish a maintenance footprint to prevent future airspace vegetative obstructions.

2.3 ALTERNATIVES

2.3.1 ALTERNATIVE I: CLEARING WITH SELECT GRUBBING AND GRADING (PREFERRED)

Under this alternative, all vegetation within the 350 acre footprint that has been identified as airfield safety obstructions will be removed (denoted in red on Figure 2). Approximately 240 acres are uplands and will be grubbed and graded, including stump removal. Where bare soil remains, grass seed will be applied to establish permanent ground cover. Vegetation in wetland areas (approximately 110 acres) will be cleared by hand, mowed, or removed using special equipment (such as mats), down to within six inches of the ground surface, with no grubbing and grading. This will ensure wetland areas remain unhindered in their ability to filter and/or maintain the flow of water and will prevent the fill of wetland systems. Future maintenance will consist of mowing established grassy areas and selectively mowing / hand clearing wetland areas in a manner that does not compromise aquatic function.

2.3.2 ALTERNATIVE II: CLEARING WITH GRUBBING AND GRADING

Under this alternative, all vegetation identified as airfield safety obstructions will be removed as described under Alternative I and as identified in red on Figure 2; however, under this alternative, the entire 350 acre footprint (uplands and wetlands) will be grubbed and graded, with grass seed applied to bare soil to establish permanent ground cover. Future maintenance will consist of mowing established grass.

2.3.3 ALTERNATIVE III: NO ACTION / STATUS QUO

Under this alternative, none of the vegetation identified as airfield safety obstructions will be removed. This alternative does not meet the purpose and need for the proposed action; however, the CEQ regulations that implement NEPA require that the decision-maker and the reader be presented with a clear basis for choice among alternatives, which includes the no action alternative (40 CFR 1502.14[d]). It also serves as a benchmark against which to compare the impacts of the action alternatives.

Figure Redacted

Figure 2. HAAF Runway Vegetative Obstruction Removal Action Alternatives Location.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter focuses on those components of the natural and human environment potentially impacted by the proposed action alternatives. Potential direct, indirect, and cumulative impacts to the affected environment are discussed as they relate to each alternative. Direct impacts are those caused specifically by each alternative and that occur at the same time and place. Indirect impacts are also caused by each alternative, but later in time or farther in distance. Cumulative impacts “result from the incremental impact of the action” when added to “other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or what person undertakes such other actions” (Canter et. al, 2007). The levels of intensity of potential impacts are described as follows:

- *Adverse*. A negative net impact.
- *Beneficial*. A positive net impact.
- *Negligible*. No measurable impacts are expected. Any environmental impact would be barely perceptible, combined to a single location, or would not require a long recovery period (days to months).
- *Minor*. Short-term but measurable impacts are expected. The resource would recover in a relatively short period of time (days to months).
- *Moderate*. Measureable and long term impacts that may not remain localized. Recovery may require several years or decades.
- *Significant*. Impact that would result in substantial change to or the loss of a resource.

3.1 STUDY AREA

The scope of the affected environment involves both the geographic extent of the effects and the time in which the effects may occur. The environmental consequences analysis is confined to within the physical boundaries of HAAF. Actions not occurring within this area are not considered in the analysis since they would be unlikely to interact with the proposed action in a cumulative manner. Thus, the affected environment consists of a 540 acre Study Area located upstream of Henry Creek and within the Lamar Canal drainage area. The Study Area also includes military training areas and the HAAF Golf Course. Refer to Figure 3 for a depiction of the Study Area.

3.2 RESOURCES ANALYZED

Implementing the action or no action alternatives may impact Water Quality and Resources; Cultural Resources; Land Use, Visual Resources and Recreation; and Health and Safety; therefore, these resources and how they may be impacted are discussed in detail in this section of the Draft EA. Perceptible impacts to Groundwater, Coastal Zone Management, Air Quality, Noise, Socioeconomics, Provision for the Handicapped/Environmental Justice/Protection of Children, and Transportation are not anticipated; accordingly, these resources are not discussed in detail in the main body of the Draft EA, but are instead briefly summarized in its Appendix B. These resources and their potential impacts have also been programmatically assessed in the Aviation Modularity Transformation EA (Fort Stewart, 2005).

3.3 PAST AND PRESENT ACTIONS

HAAF is an active military Installation that undergoes continuous changes in its mission and training requirements. This process of change is consistent with the Department of Defense policy that the Army must be ready to respond to threats to American interests throughout the world. Several mission and training requirements have resulted in facility construction and upgrades on the Installation. Most of these changes and possible future changes derive from the Army's transformation process.

Past actions within the Study Area include activities associated with the development of HAAF. These include the development of its transportation network, such as roads, bridges, and railroads, and the construction of its support buildings, which provide facilities for its personnel and Soldiers. Infrastructure projects such as the aircraft runway and drainage systems were also completed in the past. This existing transportation, facilities, and infrastructure network is updated and upgraded as needed.

The western portion of the Study Area is located in a transitional area of a salt marsh system that has been consistently altered for more than 100 years, and which feeds a tidal creek known as Henry Creek. Maps from the late 1800s indicate that a county road was constructed across the salt marsh adjacent to Henry Creek, connecting the railroad to the land now owned and operated by HAAF. The Buckhalter Canal and adjacent wetlands flowed into Henry Creek and the area impounded by this county road. These maps also show the Buckhalter Canal as a dredged, but more sinuous, channel flowing through portions of what is currently the runway at HAAF. In the mid-1950s, Buckhalter Canal was subsequently filled and the drainage was relocated north of the runway, into a feature now known as the Lamar Canal.

3.4 FUTURE POTENTIAL ACTIONS

Future potential actions at the Study Area include the establishment of a saltwater marsh restoration area on a 273 acre site, of which 85 acres are within the proposed action footprint (Figure 4). Reasonably foreseeable future actions throughout the remainder of the Study Area also include the regular maintenance of the newly established runway safety zones that will be created under the proposed action.

Figure Redacted

Figure 3. Study Area.

Figure Redacted

Figure 4. Potential Future 273-acre Saltwater Marsh Restoration Area.

3.5 WATER QUALITY AND RESOURCES

3.5.1 AFFECTED ENVIRONMENT

Water resources are inclusive of surface waters like that in streams, rivers, lakes, and estuaries; groundwater, wetlands, and floodplains. Water resources management requirements are typically derived from the Clean Water Act (CWA), Safe Drinking Water Act, and water rights laws that vary from state to state.

Groundwater. While groundwater resources are not expected to be impacted and thus not discussed in the main body of the Draft EA, site surveys identified an abandoned well within the northeastern portion of the proposed action area. This well is also discussed under Cultural Resources Section 3.6 of the Draft EA. Irrespective of the proposed action, the Installation is responsible for properly closing the identified abandoned well in accordance with State of Georgia and Federal Safe Drinking Water Act requirements, and all work shall be accomplished by a certified well drill and/or certified geologist. The contractor will be required to avoid the abandoned well until the Army has properly closed it. Although abandoned, the well is not in a state of deterioration sufficient to result in adverse impacts to groundwater when vegetative removal actions occur in this portion of the project footprint.

Surface Waters. The Little Ogeechee River forms the southwestern boundary of HAAF and drains most of the Installation. Tides exert a great influence on the river and salt water is carried upstream for some distance. Fresh to brackish tidal marshes have developed along much of the shore and the river is not a significant source of drinking water. Due to the large area of impervious surface associated with the airfield and cantonment area, large volumes of runoff are directed to the Little Ogeechee salt marsh/river system (Prentice Thomas and Associates, Inc. 1996). Drainage from these areas flows west through a storm drain system including a series of ditches to the Lamar Canal, which flows southwest to the Little Ogeechee River. Surface water resources at HAAF include 12 miles of brackish water streams and several small impoundments ranging in size from 4.3 to 9.7 acres. Although there are no known impaired streams [CWA, Section 303(d)] within the Study Area (GA EPD, 2016), HAAF applies management practices, in accordance with Georgia Department of Natural Resources (DNR) guidance throughout the Installation to limit sedimentation into any waterway. These practices include:

- Implementing an Erosion Sedimentation Pollution Control Plan (ESPCP) for land disturbing activities to meet the requirements of the Georgia Erosion and Sedimentation Control Act (ESCA),
- Using Georgia Forestry Commission Best Management Practices (BMPs) for timber harvests,
- Adoption Natural Resources Conservation Service (NRCS) conservation practices,
- Adopting unpaved road maintenance practices, and
- Repairing and preventing stream bank erosion due to increased stream flow velocities caused by urban runoff.

The surface waters within the Study Area are conveyance systems that feed into Lamar Canal and are considered State Waters. Where vegetation has been wrested by normal stream flow, a 25' vegetative buffer must be maintained. If adverse impacts are necessary that prevent the vegetative buffer from supporting existing stream protection, a stream buffer variance (SBV) is required from GA DNR. From a site visit

and follow up correspondence from GA DNR in April 2016 (Appendix D), of the State Waters within the proposed action footprint, Lamar Canal is considered to have wrested vegetation which would require a buffer meeting GA DNR rules.

Wetlands. Wetlands are defined, per 33 CFR Part 328.3(b) of the CWA, as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Section 404 of the CWA regulates the discharge of dredge or fill material into waters of the United States, and the U.S. Army Corps of Engineers (USACE) holds the primary federal authority for regulation of these discharges. A Nationwide Permit is required for activities resulting in minimal individual and cumulative potential environmental impacts, and an Individual Permit is required for activities that do not qualify for the Nationwide Permit program. Section 401 of the CWA requires that the state in which the activity occurs issue a Water Quality Certification for any activity requiring a Federal permit that may result in a discharge to state waters. This certification states that applicable effluent limits and water quality standards will not be violated.

Executive Order 11990, *Protection of Wetlands*, requires federal agencies to avoid new construction in wetlands unless it finds that there is no practicable alternative to such construction, and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. Given their prevalence on the Installation, HAAF has made avoidance and minimization of wetlands impacts a top priority and wetlands are one of the primary factors to be considered when planning a new project.

The National Wetlands Inventory (NWI), a nationwide inventory of wetlands and deep-water habitats across the United States, was established by the U.S. Fish and Wildlife Service (USFWS) for the purposes of management, research, and planning purposes, and is a tool utilized by the Army when planning its projects. Per the NWI, HAAF contains approximately 1,670 acres of freshwater wetlands, which include vegetative species such as pond cypress (*Taxodium ascendens*), bald cypress (*T. distichum*), black tupelo (*Nyssa sylvatica*), swamp tupelo (*N. aquatica*), sweetgum (*Liquidambar styraciflua*), pond pine (*Pinus serotina*), water oak (*Quercus nigra*), redbay (*Persea borbonia*), and fetterbush lyonia (*Lyonia lucida*).

In August/September 2016, the Army conducted a wetlands field study of the proposed action area. This delineation, in conjunction with prior delineations at and around the airfield, resulted in the identification and demarcation of approximately 110 acres of jurisdictional wetlands.

Floodplains. In accordance with Executive Order 11988, *Floodplain Management*, all federal agencies are directed to avoid adverse impacts to floodplains to the greatest extent possible. Where impacts to floodplains are unavoidable or not practicable, the Army documents all steps taken to avoid adverse impacts, designs and/or modifies the actions it takes to minimize adverse impacts, and explains why no practicable alternative to impacting the floodplain exists. Floodplains are of great value due to their ability to link adjacent streams and rivers and they serve a multitude of functions, including water storage and conveyance, filtration of nutrients and other pollutants from runoff, erosion control, and groundwater recharge, as well as a valuable habitat for fish and wildlife. Areas regulated under this Executive Order include those lands subject to a 1% or greater chance of flooding in any given year, referred to as the 100-year floodplain.

The Federal Emergency Management Agency is responsible for mapping flood-prone areas. Floodplains are a link to adjacent streams and rivers, and serve various functions, including water storage and conveyance, filtration of nutrients and other pollutants from runoff, erosion control, groundwater recharge, fish and wildlife habitat, and recreation. To the greatest extent possible, HAAF avoids construction and other activities within these sensitive resources; however, in some cases, total avoidance is neither possible nor feasible, due to the predominance of wet conditions and/or low elevations found on HAAF. Approximately 135 acres of the 100-year Floodplain exist within the proposed action footprint.

3.5.2 ENVIRONMENTAL CONSEQUENCES

3.5.2.1 Alternative I: Clearing with Select Grubbing and Grading (Preferred)

Under this alternative, because of the erosion and sedimentation control measures that are an embedded part of HAAF's planning and construction phases, direct and indirect impacts to water quality and resources will be minor adverse.

Surface Waters and Floodplains. Direct and indirect impacts to surface waters, their streambanks, and their ability to convey water will be short-term and recoverable. The vegetative buffer area of Lamar Canal is also considered a wetland and site clearing will follow the conditions outlined in the wetland section, below, as well as follow site-specific BMPs to be identified on the project's ESPCP. Thus, an SBV will not be required. The remaining surface waters and their streambanks do not contain vegetative obstructions as they are regularly maintained by the Army with grass already established along the drainage systems; therefore, they will not be disturbed.

In the proposed action's natural, undisturbed environment rain that falls is quickly absorbed by trees, other vegetation, and the ground. Most rainfall that is not intercepted by leaves infiltrates into the ground or is returned to the atmosphere by the process of evapotranspiration. Very little rainfall becomes stormwater runoff in permeable soil, and runoff generally only occurs with larger precipitation events. There are no impervious surfaces proposed. Less wetland and surface water avoidance areas, the remaining footprint will consist of compacted soil material with grass established. Therefore, runoff rates post-construction will be much less than traditional development practices covering large areas of ground with impervious surfaces such as roads, sidewalks, and buildings.

The purpose of Section 438 of the Energy Independence and Security Act (EISA) is to replicate pre-development hydrology to protect and preserve both the water resources onsite and those downstream. The Army complies with EISA Section 438 by designing facilities based on the goal of maintaining pre-development hydrology on a site-specific basis and an objective methodology with which to determine appropriate practices to protect the receiving environment. Coupled with EISA Section 438, HAAF also specifies the requirement for site designers to utilize Georgia's Coastal Stormwater Supplement (CSS). The purpose of the CSS is to protect Georgia's existing water quality standards, particularly those of the State's coastal waters. By utilizing the CSS, post-construction stormwater runoff rates and volumes are reduced through the use of low impact development practices to help maintain pre-development site hydrology, help prevent downstream water quality degradation, and to help prevent downstream flooding and erosion. Not only does this approach protect water resources from pollutant stresses including sedimentation loads, it minimizes potential harm to or within the 100-year floodplain consistent with Executive Order 11988.

The Georgia Water Quality Act (GWQA) (Official Code of Georgia [OCGA] § 12-5-20), and Georgia ESCA (OCGA § 12-7-1) requires permitting and the establishment of erosion control measures prior to land disturbance. The control measures that must be established are referred to as BMPs which are identified on an ESPCP to be developed by the Army for the proposed action. These BMPs must be utilized by the contractor and will be inspected by the Army periodically for adequacy and to have the contractor correct any deficiencies as measured by turbidity samples and physical examination of downstream areas. The ESPCP will also include requirements identified in the *Manual for Erosion & Sedimentation Control for the State of Georgia*, the CSS, EISA Section 438, and local stormwater control requirements found on Fort Stewart's website: <http://www.stewart.army.mil/info/?id=443&p=1>.

Permitting associated with state erosion and sedimentation control rules also requires fees in the amount of \$80.00/disturbed acre and must be paid to the Georgia EPD. The project's executing agency (U.S. Army) or contractor will provide a copy of the fee submission to the Installation Environmental Office along with a prepared and initialed Notice of Intent (NOI) for coverage under the State's National Pollutant Discharge Elimination System (NPDES) Permit. Land disturbance may not commence until 14 days from the date of certified mailing of the NOI packet to Georgia EPD.

During construction, the State requires a Level 1A Erosion and Sedimentation Control certified individual to be on the site during any land disturbance activity. The contractor is expected to comply with this requirement. In order for the Army to accept the project as complete, the site must be stabilized to prevent silts and sediments from leaving the construction site. The Installation must agree that the project site meets necessary site stabilization parameters as required by the State of Georgia prior to project acceptance by the Army.

Wetlands. In accordance with the CWA and Executive Order 11990, HAAF is required to implement measures to avoid, minimize and compensate for wetland impacts. Vegetation within approximately 110 acres of wetlands will be removed without grubbing and grading. Removing vegetation in wetlands will be conducted using mats to stabilize mechanized equipment as they reach into the wetland for trees marked for removal. Removal by hand (i.e., chainsaw) will be necessary in areas where mechanized equipment mats cannot be utilized. Vegetation felled within wetlands may fall and remain in place where feasible (i.e., not causing the wetland to lose its aquatic function as determined through periodic inspections by the Installation environmental personnel). In cases where such impacts are occurring, vegetation will be removed with minimal disturbance. Wetland areas will be flagged / marked on the ground prior to vegetation removal to ensure the contractor clearly understands the physical demarcation limits of all wetland areas. Periodic inspections of wetland areas will occur throughout the duration vegetation removal activities to ensure these boundaries are maintained. The discharge of dredged or fill material into streams and wetlands is not permitted and doing so will require prior coordination and permitting through the USACE-Regulatory Branch (Wetlands).

3.5.2.2 Alternative II: Clearing with Grubbing and Grading

Under this alternative, moderate adverse direct and indirect impacts to water quality and resources are expected. While the erosion and sedimentation control measures that are an embedded part of HAAF's

planning and construction phases will be implemented, this alternative also calls for filling (through grubbing and grading land) 110 acres of jurisdictional wetlands and the stream buffer of Lamar Canal to facilitate a more feasible long-term maintenance regime through mowing.

Surface Waters and Floodplains. Impacts to surface waters, their streambanks, and their ability to convey water are similar in part to what is expected under Alternative I. However, the vegetative buffer of Lamar Canal will change from supporting stream protection with a variety of wetland plants to a grassed streambank. As such, an SBV from GA DNR will be required prior to such disturbance, meeting the rules found in DNR Rule 391-3-7.05. If these rules are not met, Lamar Canal's vegetative buffer will remain in its current state. The remaining conveyance systems will not be disturbed as they do not contain vegetative obstructions and instead will continue to be maintained through mowing by the Army.

Excluding the conveyance systems, the footprint will consist of compacted soil material with grass established and thus runoff rates post-construction will be much less than traditional development practices covering large areas of ground with impervious surfaces. Because Alternative II will involve site disturbing activities, prior to implementing the action, as similarly expressed in the Alternative I impacts discussion, the Army will comply with EISA Section 438 and Georgia's CSS to maintain pre-development hydrology on a site-specific basis and will determine appropriate practices to protect the receiving environment. This approach will protect water resources from pollutant stresses including sedimentation loads and minimize potential harm to or within the 100-year floodplain consistent with Executive Order 11988.

The Army will also prepare an ESPCP meeting the expectations of the GWQA and ESCA (OCGA § 12-7-1) and identify site-specific erosion control BMPs prior to land disturbance. These BMPs must be utilized by the contractor and will be inspected by the Army periodically for adequacy and to have the contractor correct any deficiencies as measured by turbidity samples and physical examination of downstream areas. The ESPCP will also include requirements identified in the *Manual for Erosion & Sedimentation Control for the State of Georgia*, the CSS, EISA Section 438, and local stormwater control requirements found on Fort Stewart's website: <http://www.stewart.army.mil/info/?id=443&p=1>.

Permitting associated with state erosion and sedimentation control rules also requires fees in the amount of \$80.00/disturbed acre and must be paid to the Georgia EPD. The project's executing agency (U.S. Army) or contractor will provide a copy of the fee submission to the Installation Environmental Office along with a prepared and initialed NOI for coverage under the State's NPDES Permit. Land disturbance may not commence until 14 days from the date of certified mailing of the NOI packet to Georgia EPD.

During construction, the State requires a Level 1A Erosion and Sedimentation Control certified individual to be on the site during any land disturbance activity. The contractor is expected to comply with this requirement. In order for the Army to accept the project as complete, the site must be stabilized to prevent silts and sediments from leaving the construction site. The Installation must agree that the project site meets necessary site stabilization parameters as required by the State of Georgia prior to project acceptance by the Army.

Wetland areas will be flagged / marked on the ground prior to the start of any work to ensure the contractor clearly understands the physical demarcation limits of all wetlands and utilizes appropriate equipment and

techniques for felling and removing vegetation. The grubbing, grading, and its associated discharge of dredged or fill material into streams and wetlands requires prior coordination with and permitting through the USACE-Regulatory Branch (Wetlands). The FSGA/HAAF Wetlands POC will assist in the completion of all CWA Section 404 permitting requirements and will ensure all required approvals and permits have been obtained prior to the timber harvest contractor commencing any work for this action.

Wetlands. Alternative II cannot avoid filling 110 acres of wetlands because it is necessary to establish a long-term maintenance mowing regime by the Army; however, minimization efforts as expected under the CWA and Executive Order 11990 are reasonable. For example, design solutions could maintain connected wetland branch systems so that the hydrologic functions of the impacted wetland could be effectively replaced, and flow to the downstream areas would not be impaired.

HAAF will apply for an Individual Permit to seek approval from the USACE-Regulatory Branch to fill unavoidable wetland areas within the proposed action footprint. Wetland impact minimization efforts will also be documented during the proposed action design phase to assist with completion of the Individual Permit application. Wetland mitigation will consist of utilizing the Savannah District USACE-Regulatory Branch's standard operating procedure for calculating compensatory mitigation requirements. Wetland credits will be utilized from either the primary or secondary service area to adequately offset losses in aquatic function. The primary and secondary service areas' compensatory mitigation banks have aquatic resources similar in function to those in the proposed action footprint, along with credits available.

3.5.2.3 Alternative III: No Action/Status Quo

Under this alternative, there will be no impacts to water quality and resources as vegetation removal will not occur. Periodic maintenance of existing open areas on the airfield proper will continue, for which no historic adverse impacts to surface waters, floodplains, or wetlands has been observed.

3.5.3 CUMULATIVE IMPACTS

3.5.3.1 Alternative I: Clearing with Select Grubbing and Grading (Preferred)

Implementing the proposed action when combined with past, present, and future foreseeable actions will have a cumulative negligible impact to water quality and resources under Alternative I.

Surface Waters and Floodplains. Past actions resulted in increased stormwater runoff rates that were accounted for through the development of HAAF's major conveyance systems. This changed the natural drainage patterns in the Study Area. Overtime, maintaining existing hydrological conditions became more important for flood control and maintaining water quality standards, thus, decreasing adverse cumulative impacts to surface waters and floodplains. The potential future saltwater marsh restoration area would restore the historic water storage and conveyance system within the western side of the Study Area for which the conveyance systems within the proposed action naturally drains. It also has the potential to impact approximately 15,000 linear feet of freshwater streams found within the Study Area, although the affects would mostly occur from their transition to tidal systems.

Wetlands. Well before wetland regulations were created, past actions creating the drainage infrastructure as it exists today in the Study Area resulted in changes to the original wetland makeup at HAAF. Under Alternative I, the proposed action will avoid filling wetlands and adversely impacting the aquatic function of these systems. The potential future saltwater marsh restoration area has the potential to disturb approximately 20 acres of jurisdictional freshwater wetland areas; however, the restoration could provide a beneficial impact by providing an unaltered salt marsh ecosystem.

3.5.3.2 Alternative II: Clearing with Grubbing and Grading

Implementing the proposed action when combined with past, present, and future foreseeable actions will have a cumulative minor adverse impact to water quality and resources under Alternative II.

Surface Waters and Floodplains. As with Alternative I, past actions caused HAAF to create its sophisticated drainage infrastructure and impacts from present actions in the Study Area are largely controlled by maintaining current hydrological conditions. The proposed action under Alternative II will still maintain pre-construction flows but the natural freshwater vegetation stabilization buffer along Lamar Canal will change to grass (unless an SBV is disapproved by GA DNR) for ease of maintenance. In the short-term, greater runoff rates must be considered and controlled to protect downstream waters and floodplain; however, the potential future saltwater marsh restoration area will restore the natural drainage pattern of the western Study Area, reverting 15,000 liner feet of freshwater streams to tidal systems.

Wetlands. The proposed action under Alternative II calls for 110 acres of wetlands within the proposed action footprint to be filled through grubbing and grading activities. Altering the wetland systems within the Study Area in addition to past actions will change the hydrological function as it exists today. Yet, minimization efforts along with appropriate mitigation as determined by the USACE Regulatory Branch will reduce the severity of impacts. The saltwater marsh restoration project would still potentially occur, offsetting adverse impacts from the grubbing and grading in approximately 80 acres of freshwater wetlands in the proposed action area.

3.5.3.3 Alternative II: No Action/Status Quo

Under this alternative, there will be no cumulative impacts to water quality and resources, as no vegetation removal will occur.

3.6 CULTURAL RESOURCES

3.6.1 AFFECTED ENVIRONMENT

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources are divided into three major categories: archaeological resources (prehistoric and historic), architectural resources, and areas of Tribal interest. Historic districts may fall within all three of the three categories, depending upon what they contain.

The Installation's Integrated Cultural Resources Management Plan (ICRMP) incorporates federal and Army cultural resource laws and regulations into an internal document outlining how Fort Stewart manages its cultural resources (Maggioni et al, 2013). Utilizing this guidance, FSGA and the GA State Historic Preservation Office (SHPO) developed a Programmatic Agreement (PA) that provides the Installation with a flexible tool to manage its cultural resources, meeting the requirements of cultural resource review of undertakings with no effect or no adverse effect without waiting for the standard 30-day response from the SHPO on each Installation action. In short, the PA is the cultural resource program's regulatory backbone, guiding and streamlining the program's compliance with the National Historic Preservation Act (NHPA), while providing a timely, effective method of managing the Installation's cultural resources.

Under the NHPA, as amended, only historic properties warrant consideration of impacts from a proposed action and any associated proposed mitigation, and are defined by the NHPA as any districts, sites, buildings, structures, or objects included on or eligible for inclusion on the National Register of Historic Places (NRHP). Historic properties may also include traditional cultural properties and, in general, must be more than 50 years old to be considered for protection under the NHPA, although they may also warrant consideration if they are associated with important national events or are "exceptionally significant" in another way. To be considered significant, archaeological or architectural resources must meet one or more specific NHPA criteria, which include: association with events that have made a significant contribution to the broad patterns of history; association with the lives of persons significant to our past; embody a distinctive characteristic of a type, period, or method of construction; or that have yielded or may be likely to yield information important to history or prehistory.

In addition to consideration of impacts to historic properties in accordance with the NHPA, other cultural resource considerations are also taken into account in accordance with NEPA. These include, but are not limited to: impacts to Sacred Sites (i.e. properties or landscapes deemed sacred to the expression of religion by Native American Tribes); impacts to Native American burials and associated cultural items in accordance with the Native American Graves Protection & Repatriation Act (NAGPRA); impacts to archaeological resources that are at least 100 years old and are of archaeological interest in accordance with the Archaeological Resources Protection Act (ARPA); and historical, scientific, or paleontological resources in accordance with the Archaeological and Historic Preservation Act (AHPA) and Archeological Data Preservation Act (ADPA).

No areas of Tribal interest (i.e., Sacred Sites, Traditional Cultural Properties and/or items with Native American Graves Protection and Repatriation Act-related concerns) or areas of paleontological concern have been identified on or in proximity to the alternative locations; accordingly, these cultural resources are not discussed further in the Draft EA. However, surveys did identify 16 archaeological sites and isolated finds, a previously unidentified abandoned well, and two previously relocated cemeteries at the location of the proposed action and its alternatives. Accordingly, potential impacts to architectural and archaeological resources are discussed below. *Note: due to site sensitivity, no maps are provided in this section of the Draft EA.*

3.6.2 ENVIRONMENTAL CONSEQUENCES

Under these alternatives, negligible-to-minor adverse impacts to cultural resources are anticipated. Although Alternative I involves select grubbing and grading, versus complete grubbing and grading under Alternative II, both will cover the same area of potential affect and are accordingly discussed together in

this section. See Appendix E, Cultural Resource Impact Analysis Report, for additional details regarding impacts to cultural resources.

3.6.2.1 Alternatives I and II: Clearing with Grubbing and Grading (Select and Full)

FSGA/HAAF conducted surveys within the area of potential affect, which identified 16 archaeological sites and isolated finds, six linear/architectural features, and three previously relocated cemeteries. Analysis of the archaeological sites determined them ineligible for the NRHP; accordingly, no adverse effect to archaeological resources will occur. Per the terms of the Installation's PA with the GA SHPO, when a determination of no adverse effect to historic properties is concluded, the summary of findings are included within an Annual Report to the SHPO for all Section 106 undertakings executed by the Installation. As such, a copy of the Cultural Resource Impact Analysis Report for this proposed action (Available at Appendix E) will be included within the FSGA/HAAF FY16 Annual Report.

Six linear/architectural features have been previously identified within the western portions of the project area (within the marsh). The features are related to the late 19th to early 20th century canal system development along the western portions of the project area. Four of the six features have been recommended as potentially eligible for the NRHP, pending further Phase II investigations. Under Alternative I, no adverse effects to these features are anticipated. The construction contractor will maintain a 25-foot vegetative buffer around the Lamar Canal, as required for Waters of the State, and erosion/sedimentation BMPs will be implemented. In addition, no grubbing/grading will occur within the associated wetland areas under this alternative, where all mechanical work will remain within six inches of the ground surface. Under Alternative II, there is a potential for minor adverse effects to the features as the result of grubbing and grading of the landscape within the wetland areas, although the buffers around Lamar Canal will still be established and maintained. Should Alternative II be implemented, additional avoidance measures will be implemented, in order to avoid adverse impacts to these resources that are potentially eligible for the NRHP.

The former Flowersville, Buckhalter, Sycamore, and Oakland Cemeteries are located within the western portion of the area of potential affect. Although the City of Savannah and the U.S Air Force (*owner and operator of HAAF lands at that time*) exhumed all known remains from these locations and relocated them to an off-Post cemetery in 1951, there is still a possibility that unmarked graves may have been missed and are still on site. Accordingly, the timber removal contractor shall contact the DPW Environmental Division CRM POC prior to initiating any vegetation removal at these cemetery locations. This will allow the CRM POC to monitor all ground disturbance and halt work if human remains and/or burial goods are discovered. Although no maps indicating the location of these cemeteries is included in the Draft EA, the timber removal contractor will be provided with the cemetery locations and the known limits of their boundaries prior to the start of work in order to coordinate and plan the timber removal and monitoring schedule. Overall, negligible impacts to cultural resources are anticipated under Alternative I and minor impacts to cultural resources are anticipated under Alternative II.

3.6.2.2 Alternative III: No Action/Status Quo

Under this alternative, there will be no impacts to cultural resources, as no ground disturbance will occur.

3.6.3 CUMULATIVE IMPACTS

3.6.3.1 Alternatives I and II: Clearing with Grubbing and Grading (Select and Full)

Overall, this alternative would result in negligible adverse cumulative impacts to cultural resources. Past actions within the Study Area include the construction of the Installation and its various components, a great deal of which occurred prior to the institution of cultural resources laws and regulations. Accordingly, it is possible that cultural resources were lost, damaged, and/or destroyed during this time, resulting in potential adverse cumulative impacts to cultural resources. Present actions within the Study Area are reviewed by Installation CRM personnel prior to implementation, to include the proposed vegetative obstruction removal, thereby minimizing the potential for adverse cumulative impacts to a level of negligible-to-none. Future actions within the Study Area include the potential future establishment of a saltwater marsh restoration area. This is not anticipated to result in adverse cumulative impacts to cultural resources, as the only NRHP-eligible resources associated with that action (the earthen dam, canal elements, and partially submerged wooden structure) will be protected and not demolished to restore the natural water flow, actions for which consultation was completed in 2011 (Appendix E).

3.6.3.2 Alternative III: No Action/Status Quo

No cumulative impacts to cultural resources are anticipated as a result of implementation of this alternative, as no direct or indirect impacts are expected.

3.7 LAND USE, VISUAL RESOURCES, AND RECREATION

3.7.1 AFFECTED ENVIRONMENT

Land Use. Land use generally refers to human modification of land, often for residential, commercial, industrial, agricultural, recreational, and economic purposes, but may also refer to the use of land for preservation or protection of natural resources such as wildlife habitat, vegetation, or unique features, to include visual resources. Land uses are frequently regulated by management plans, policies, ordinances, and regulations that determine the types of activities that are allowed or that protect specially designated or environmentally sensitive uses. The process through which land uses may be transferred to other uses (AR 350-19) involves Garrison Command, environmental and planning staff, and Installation Management Command. This extensive process ensures the continued safety of the site as the Army's needs transform.

The majority of land at HAAF (2,870 acres, or 60%) is undeveloped forest lands; the remaining 943 acres (or 40%) consists of the cantonment area and its associated components. Currently, the lands comprising the area of the alternatives is categorized for training and is designated as light maneuver training area, of which HAAF currently contains 1,855 acres. Light maneuver training area consists of open forested space for ground and air combat forces to conduct ground-based movements and tactics. The "light" designation refers to areas where maneuver may be restricted to only small units or units having only wheeled vehicles (Training Circular 25-1, *Training Land*). This land may also be utilized for land navigation training purposes.

Visual Resources. Visual resources are the natural and man-made features that make up the landscape of an area. Natural features include water surfaces, vegetation, and topography, and man-made features include buildings, towers, roads, and airfields. These features combine to give an area its unique characteristics and are inherent to the structure and function of that landscape. The relative importance of a change to these visual resources is influenced by the value it has to the viewer, public awareness of the area, and general community concern for visual resources in the area. The primary visual resources potentially impacted by the alternatives include the cantonment area to the north and northeast, the HAAF golf course to the southeast, both of which are very developed, and the marsh system to the west and southwest, which is natural and undeveloped. There are also varying-sized parcels of forested land along the airfield that are not utilized for any specific purpose but which are designated for light maneuver training.

Recreation. Recreational resources consist of the activities, both indoor and outdoor, that are available to a population in a certain area. Potential impacts to recreational resources are evaluated by the effect of a proposed action to the facilities or natural resources that support these activities. The forest, streams, and marsh system on HAAF provide a valuable outdoor recreational resource for the Soldiers, their Families, and civilians, for activities including hunting, fishing, camping, and boating. Although not designated for recreation, the lands making up the Study Area include a marsh system, located to the west of the airfield, and the HAAF golf course, located along the airfield's southeastern boundary, all areas heavily utilized for recreational purposes by the Installation's residents.

3.7.2 ENVIRONMENTAL CONSEQUENCES

Although Alternative I involves select grubbing and grading, versus complete grubbing and grading under Alternative II, both will cover the same area of potential affect and are accordingly discussed together in this section.

3.7.2.1 Alternatives I and II: Clearing with Grubbing and Grading (Select and Full)

Overall, negligible adverse direct and indirect impacts to land use, visual resources, and recreation are predicted.

Land Use. Implementation of either alternative will result in the removal of 310 acres of light maneuver land from the Installation's current inventory of 1,855 acres, or a 17% reduction in light maneuver training lands. However, it will not require a change in Land Use, which will remain under its current designation, nor will it result in a conflict with adjacent land uses, which will also remain under their current designation. Overall, implementation will result in negligible adverse impacts to land use.

Visual Resources. Implementation will result in the removal of 15 acres of vegetation from the golf course property (outlined in green on Figure 5), as well as an additional 20 acres (outlined in yellow on Figure 5) that serves as a visual buffer between the golf course and the airfield. The buffer may be restored through the establishment of low-growing vegetation or some other means that may be developed via coordination between the airfield and the Directorate of Morale, Welfare and Recreation (MWR) personnel, who manage the course. Vegetation removal will also occur along the southwestern portion of the Study Area, which is categorized as light maneuver training land; however, sufficient acreage will remain to serve as a visual buffer between training activities at this location and the airfield, minimizing potential adverse effects. Tree

removal from areas adjacent to the northern and northeastern portions of the airfield will remove portions of the visual buffers between the airfield and the cantonment area and Installation roadways, for which no adverse visual impacts are anticipated.

Recreation. Implementation will result in a disruption in services at the golf course while timber harvest and debris removal are occurring. Accordingly, disruption to golf play will occur that will require a temporary adjustment to the course layout; however, this is not expected to cause an economic detriment to the HAAF golf course. The portions western Study Area, where timber removal will occur, are not typically accessed for hunting, fishing, boating, or other recreational activities. Accordingly, negligible adverse impacts to recreation are anticipated.

3.7.2.2 Alternative III: No Action/Status Quo

Under this alternative, there will be no impacts to land use, visual resources, or recreational resources, as no vegetation removal will occur.

3.7.3 CUMULATIVE IMPACTS

3.7.3.1 Alternatives I and II: Vegetation Removal (Full and Reduced)

Overall, this alternative would result in negligible beneficial cumulative impacts to land use, visual resources, and recreation. Past actions within the Study Area include the construction of the Installation and its various components, including its cantonment area, airfield proper, and transportation network, as detailed in EA Section 3.3. This would have contributed to adverse cumulative impacts to land use, visual resources, and recreational resources, as the land was converted from undeveloped, pristine forestland to a military airfield. Future actions within the Study Area include the proposed clearing of vegetative obstructions around the airfield, followed by routine maintenance of the newly established runway safety zones, both of which are consistent with the current land use and which will result in negligible adverse impacts to visual and recreational resources. The future potential establishment of the saltwater marsh restoration area would result in a potential change in land use, although the exact determination is pending; however, no cumulative impact from this land use change is anticipated. The restoration of the historic saltwater marsh, tidal, creek, and upland buffer would result in beneficial cumulative impacts to visual and recreational resources within the Study Area.

3.7.3.2 Alternative III: No Action/Status Quo

No cumulative impacts to land use, visual resources, and recreation are anticipated as a result of implementation of this alternative, as no direct or indirect impacts are expected.

Figure Redacted

Figure 5. HAAF Golf Course.

3.8 HEALTH AND SAFETY

3.8.1 AFFECTED ENVIRONMENT

Health and Safety includes the evaluation of fire and police protection, healthcare services availability, and safety danger zones (SDZ) associated with on-Post training ranges and airfields, as well as worker safety issues during construction, operations, repairs/maintenance on Installation job sites and facilities, and range/training safety. Occupational health and safety applies to on-the-job safety and implements the requirements of 29 CFR 1926 et seq, the Occupational Safety and Health Act (OSHA). All construction and demolition on Post is required to be performed in accordance with applicable OSHA regulations to protect human health and minimize safety risks.

Fire and Police Protection and Healthcare Services Availability. There will be no impacts to fire and police protection and healthcare services availability as a result of the proposed action and its alternatives, as logging, debris removal, and other associated activities will occur off of the main transportation network and not hamper emergency vehicle access throughout the Installation. The vegetation removal will also occur during daylight hours only and not impede any emergency vehicle access during the evening. Accordingly, this will not be discussed further in this Draft EA.

Range Safety. The “Range Safety Program,” implemented under Army Regulation (AR) 385-63, governs Army policies, responsibilities, and procedures for firing ammunitions, lasers, guided missiles, demolitions, explosives, rockets, and the delivery of bombs on Army and Marine Corps ranges and live-fire training facilities (DA, 2012). The program is applicable to operational ranges, non-range training lands, bombing ranges, artillery impact areas, target areas, all live fire weapons firing areas, recreational ranges utilized for rod and gun clubs, and test and evaluation ranges. While there are no munition SDZs from military ranges (either former or current) in the Study Area, the non-range training lands identified in EA Section 3.7 are also available for either archery or shotgun hunting. Because there are competing requirements for use of training land, a range scheduling process is managed by the Installation’s Range Control Office for safety reasons. All military unit training, natural resource management, and maintenance personnel will utilize this process to schedule associated requirements. Because of this established process and the education provided to personnel working and training on the Installation, Range Safety will not be discussed further in this Draft EA.

Worker Safety. The “Army Safety Program,” implemented under Army Regulation (AR) 385-10, governs Army policies, responsibilities, and procedures to protect and preserve Army personnel and property against accident loss (DA, 2013b). This provides for operational safety and mandates compliance with applicable safety laws and regulations. To ensure worker health, compliance with OSHA standards and the Army Safety Program is required and only authorized personnel will be allowed within the footprint for construction; in addition, all workers must adhere to safety standards established by OSHA.

Aviation Safety. All Army runways must be free of obstructions that present a safety hazard to military aircraft and the personnel within them, in accordance with FAA regulations, 14 CFR Part 139 Section 331, *Obstructions*, and UFC 3-260-01, *Airfield and Heliport Planning and Design*. This applies specifically to natural obstructions, such as trees and brush. Man-made obstructions such as windsocks, antennae, and other navigational aids, which assist in safe aircraft operations, do not require removal and are factored into the airfield’s landscape for its pilots.

3.8.2 ENVIRONMENTAL CONSEQUENCES

Although Alternative I involves select grubbing and grading, versus complete grubbing and grading under Alternative II, both will cover the same area of potential affect for safety concerns, will result in the removal of all vegetative obstruction from HAAF's runway, and are accordingly discussed together in this section.

3.8.2.1 Alternatives I and II: Vegetation Removal (Full and Reduced)

Under either alternative, there will be moderate beneficial impacts to safety as a result of the removal of all vegetative obstructions on lands adjacent to HAAF's runway.

Worker Safety. Prior to any land disturbance, all activities must be coordinated between the construction contractor and the HAAF Safety Office, to include approval of the contractor's Health and Safety Plan by the HAAF Safety Office. All workers on site shall adhere to requirements in the Plan, to include wearing safety helmets and ear plugs during work shifts. Workers felling trees in especially sensitive wetland areas (such as in the western portion of the project footprint) may do so utilizing hand-held equipment, to include chainsaws, and should be appropriately briefed on the safe use of this equipment.

Traffic hazards may increase slightly during timber harvest as logging trucks enter and exit the HAAF/City of Savannah traffic network each day. This may result in traffic delays, especially during heavy traffic flows common early in the morning and in the middle of the afternoon, when most people head into/out of work. However, these impacts will be temporary and cease once vegetation removal is complete. Vehicles supporting debris removal should not add substantially to traffic congestion, as they are smaller (typically dump trucks) than logging trucks.

Aviation Safety. Approximately 350 acres of land surrounding HAAF's runway will be cleared of identified vegetative obstructions to ensure it is in compliance with FAA, CFR, and UFC requirements for Army airfields. This will result in overall moderate beneficial impacts to safety.

3.8.2.2 Alternative III: No Action/Status Quo

Under this alternative, there will be minor adverse impacts to safety as a result of not removing the identified vegetative obstructions at HAAF.

There will be no impacts to worker safety as a result of this alternative, as there will be no workers on site. However, failure to remove identified vegetative obstructions will result in adverse impacts to safety at the airfield as it will enable identified airfield safety hazards to remain in place and cause HAAF's runway to remain out of compliance with CFR and UFC for Army airfields. Accordingly, minor adverse impacts are anticipated

3.8.3 CUMULATIVE IMPACTS

3.8.3.1 Alternatives I and II: Clearing with Grubbing and Grading (Select and Full)

Overall, minor cumulative beneficial impacts are anticipated. Past actions within the Study Area include the construction of the Installation and its airfield. Present actions within the Study Area are reviewed by Installation personnel prior to implementation, to include project-specific health and safety plans and site

inspections occur on a regular basis to ensure worker safety is a top priority. The 2011 HAAF FAA survey identified the required vegetative obstruction removal requirements, the future implementation of which will bring the airfield back up to safety standards. Future maintenance of the airfield safety zones will ensure vegetative obstructions do not recur and put the airfield back in danger of being out of compliance with FAA, CFR and UFC requirements for Army airfields. The future potential establishment of the saltwater marsh restoration area will be planned in accordance with all worker safety requirements and vegetation within its limits will not be allowed to become an obstruction to the adjacent airfield.

3.8.3.2 Alternative III: No Action/Status Quo

Past actions within the Study Area included the construction of the airfield proper, which is currently out of compliance with FAA, UFC and CFR requirements for Army airfields. Implementation of this alternative will result in minor adverse cumulative impacts, as HAAF's runway will continue to be out of compliance with CFR and UFC requirements for Army airfields.

4.0 CONCLUSIONS

The *Draft EA for Runway Vegetative Obstruction Removal on HAAF, Georgia*, was prepared to analyze the potential environmental impacts associated with the removal of vegetative obstructions that may result in HAAF's runway being out of compliance with FAA, CFR and UFC safety requirements. These actions will ensure that the airfield is operating in accordance with all applicable standards and regulations, and ensure the mission readiness of the nation's present and future warfighting requirements. It is the conclusion of this analysis that the implementation of the proposed action under either alternative will not result in potentially significant impacts. Implementation of the No Action Alternative, although failing to meet the purpose and need of the proposed action, will likewise not result in potentially significant impacts. Table 2 provides a summary of anticipated environmental impacts.

Type of Impact	Alternative I Select Grubbing and Grading (Preferred)	Alternative II Grubbing and Grading	Alternative III (No Action/Status Quo)
Water Quality and Resources			
Direct / Indirect	Minor Adverse	Moderate Adverse	None
Cumulative	Negligible Adverse	Minor Adverse	None
Cultural Resources			
Direct / Indirect	Negligible Adverse	Minor Adverse	None
Cumulative	Negligible Adverse	Negligible Adverse	None
Land Use, Visual Resources, and Recreation			
Direct / Indirect	Negligible Adverse	Negligible Adverse	None
Cumulative	Negligible Beneficial	Negligible Beneficial	None
Health and Safety			
Direct / Indirect	Moderate Beneficial	Moderate Beneficial	Minor Adverse
Cumulative	Minor Beneficial	Minor Beneficial	Minor Adverse

Table 1: Summary of Environmental Impact

5.0 ABBREVIATIONS AND ACRONYMS

AGL	Above Ground Level
AR	Army Regulation
ATC	Air Traffic Control
BCT	Brigade Combat Team
BN	Battalion
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DA	Department of the Army
DoD	Department of Defense
DNR	Department of Natural Resources
DPW	Directorate of Public Works
DPTMS	Directorate of Plans, Training, Mobilization, and Security
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EN	Engineer
EO	Executive Order
EPA	(U.S.) Environmental Protection Agency
EPD	Environmental Protection Division
ESCA	Erosion and Sediment Control Act
ESPC	Erosion and Sedimentation Pollution Control (Plan)
DNR	Department of Natural Resources
FAA	Federal Aviation Administration
FNSI	Finding of No Significant Impact
HAAF	Hunter Army Airfield
MBTA	Migratory Bird Treaty Act
MEC	Munitions and Explosives of Concern
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Act
ROI	Region of Influence
SHPO	State Historic Preservation Office
TLS	Threshold Level of Significance
UFC	United Facilities Criteria
USC	U.S. Code

USFWS United States Fish and Wildlife Service
UXO Unexploded Ordnance

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APPENDIX A

**HUNTER AAF (KSVN)
FORT STEWART, GEORGIA
SURVEYORS REPORT**

PRIME CONTRACT #W9128F-09-D-0033
DELIVERY ORDER: 0008
DATE: AUGUST 2011- NOVEMBER 2011

Prepared by:



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**Surveyor's Report
Airport Obstruction Survey
Hunter Army Airfield
Fort Stewart, Georgia
August 2011 thru November 2011**

1. Introduction

a. Background

This report presents the results of a geodetic survey conducted for the purpose of updating the Federal Aviation Administration (FAA) 405 survey for the United States Aeronautical Services Agency (USAASA) to submit to the FAA for recertification of the facility's airfield. This includes verification of Primary Airfield Control Stations (PACS) and Secondary Airfield Control Stations (SACS) locating navigational aids, airfield reference points, and obstructions at the subject facility.

b. Job Identification Number

Midland Surveying, Inc. and Lamp Rynearson & Associates completed this survey under USACE, Omaha District Contract Number W9128F-09-D-0033, Delivery Order #0008, an indefinite delivery contract for airfield obstruction surveys at various military and civilian airfields located throughout Conus, Alaska and Hawaii. Any questions or comments pertaining to the enclosed information should be directed to Troy L. Hayes at 660-582-8633 or R. Curtis McAdams at 816-233-7900.

c. Survey Crew/Survey Dates

Field work for this survey was completed between August 2011 and September of 2011. Survey crew members for this project included R. Curtis McAdams PLS, Jake Stiens, Crew Chief, and Jake Mattson, Surveyors Assistant.

2. Project Summary

On July 19, 2011, Midland Surveying, Inc. was awarded a contract from the U.S. Army Corps of Engineers, Omaha District, to complete an FAA 405 Obstruction Chart Survey of Hunter Army Airfield, Fort Stewart, Georgia, as required to support the 5-year interval for the recertification of the facility's airfield. The scope of work for this project involved a geodetic survey and positioning of existing airfield conditions including location of NAVAIDS, runway ends, vertical profiles of runways, and the creation of an airfield obstruction chart and runway markings chart. A combination of Global Positioning System (GPS) surveying and conventional surveying methods were used to complete the FAA 405 airport obstruction survey. The obstruction chart was completed in accordance with the specifications listed in UFC 3-260-01 and FAA No. 405 Fourth Edition (1996).

3. Field Survey

a. Reconnaissance:

On August 15, 2011 R. Curtis McAdams (Survey Manager) met with Richard Mansford, Airfield Operations Officer, at Hunter Army Airfield. Ms. Mansford's contact information is:

Rick Mansford
Airfield Operations Officer
Airfield Division, DPTMS
240 South Lightning Road, Building 9601, Suite 205
Hunter Army Airfield, Georgia 31409-5517
Telephone – (912) 315-2523
E-mail – rick.mansford@us.army.mil

Mr. Mansford indicated that the airfield currently has the following electronic and visual NAVAIDS located on or near the airfield, VOR, NDB, Fixed Base PAR, PAPI, ILS Glideslope Antenna, Localizer, Four windsocks, and a radio receiver. The airfield also has and two FMQ19 weather stations. There will be no restrictions in accessing the NAVAIDS located at the airfield. An escort will be necessary to access the NDB located off of the airfield.

There have been minor changes to the airfield and airfield environment since the last obstruction survey was completed. These changes include expanding the aprons located at Sabre Hall, and the construction of Taxiway 8. There are no planned changes to the airfield.

There has been obstruction clearing since the last survey was completed which included removing some shrubs. Current plans for additional clearing will be determined after the Obstruction survey is completed. There is a new building located on Abercorn Street that may be a possible obstruction which was not there in the previous survey.

b. Primary Airfield Control Stations (PACS):

The horizontal position of the PACS monument designated KSVN-1 was established by Static GPS observation which included two (2) 4-hour sessions processed using NGS CORS stations SCWT, GASK, GABK, SCJR, and SAV5 and one (1) 4-hour session processed using single line vectors from NGS FBN station MOODY. The vertical position of the PACS monument was established by the 2) 4-hour sessions processed from the CORS stations and by a 4-hour session processed using single line vectors between NGS 1st order Benchmark V-212 RESET and NGS 1st order Benchmark MOODY and the PACS

monument designated KSVN-1. GPS data was processed using Sokkia Spectrum Survey Version 4.22.

c. Secondary Airfield Control Stations (SACS)\Temporary Control Points:

The horizontal and vertical position of the SACS monument designated KSVN-2 and HUNTER COMPASS ROSE were established by two (2) 1 ½ hour Static GPS sessions between the PACS and SACS monuments. Single line vectors were processed using Sokkia Spectrum Survey Version 4.22 between the fixed position of the PACS monument and the SACS monuments. After processing the data, a Network Adjustment was performed using Sokkia Spectrum Survey Version 4.22 to compute the fixed positions of the SACS monuments.

d. End of Runways/Centerline Helipads:

The locations of the ends of runway 10-28 were established using GPS Real Time Kinematic (RTK) surveying techniques. These points were occupied with a GPS receiver and a minimum of 50 readings were taken with the average of these readings producing the end of runway positions. The RTK horizontal and vertical tolerance levels were set at 0.010 meters horizontal and 0.015 meters vertical. The PACS and SACS monuments were utilized for the horizontal and vertical control for the data collection at the airfield.

e. Navigational Aids/Meteorological Apparatus:

The horizontal survey point and the vertical survey point of the VOR, NDB, Fixed Base PAR, PAPI, PAR Reflectors, ILS Glide Slope Antenna, Localizer, windsocks, Rotating Beacon, Radio Receiver, and FMQ19 were all obtained by a combination of conventional survey techniques and GPS Real Time Kinematic procedures utilizing the PACS and SACS monuments for the horizontal and vertical control.

f. Obstructions:

Horizontal and Vertical control was established to locate potential obstructions by GPS Real Time Kinematic methods. The horizontal position of the potential obstructions was obtained by conventional survey methods from the supplemental control. The vertical position of the potential obstructions was obtained through the remote sensing function in the Robotic Total Station. Both the ground elevation and the top of the potential obstructions were obtained.

4. Computations and Analysis

a. Primary Airfield Control Stations (PACS):

The position of the PACS monument designated KSVN-1 was established by static GPS observation which included two (2) four-hour sessions processed using NGS CORS stations SCWT, GASK, GABK, SCJR, and SAV5, and one (1) four-hour sessions processed using single line vectors from NGS FBN Station MOODY. The vertical position of the PACS was verified by a four-hour sessions processed between NGS first order benchmark V-212 RESET and NGS first order benchmark MOODY, and the PACS monument designated KSVN-1. GPS data was processed using Sokkia Spectrum Survey Version 4.22. A summary of the GPS data is attached to this report.

b. Secondary Airfield Control Stations (SACS)\Temporary Survey Control:

The horizontal and vertical datum for the SACS monuments were established by running two (2) 1½-hour sessions between the PACS and SACS monuments. Single line vectors were then processed between the PACS and SACS monuments utilizing spectrum survey version 4.22, using the fixed position of the PACS monument. After all vectors were processed, a network adjustment was completed in Spectrum Survey Version 4.22 to establish the horizontal and vertical position for the SACS monuments.

c. End of Runways/Runway Profiles/Helipads/NAVAIDS:

The horizontal and vertical position of the end of runways, runway profile points, and helipads were established using GPS Real Time Kinematic positioning. The GPS base was configured by reading the GPS position and localizing on the existing PACS and SACS monuments. Fixed positions were obtained when the Horizontal Root Mean Square (HRMS) and Vertical Root Mean Square (VRMS) reached an accuracy of 0.020 meters. The horizontal and vertical locations of the NAVAIDS were located by conventional survey methods from supplemental control points established by RTK.

d. Supplemental Control Points/Obstructions:

Horizontal and Vertical control for the supplemental control points was established by GPS Real Time Kinematic methods utilizing the PACS and SACS for the horizontal and vertical position. Horizontal and vertical accuracy checks were completed on existing NGS monuments and benchmarks. The supplemental control points were then occupied by a Robotic Total Station and the location of the obstructions were obtained by angle and distance from the supplemental control points. The heights of the obstructions were obtained through the remote sensing functions in the Total Station. The heights of the obstructions are representative of the highest point of each object.

5. Summary of Field Equipment and Software

a. Field Equipment

Sokkia Radian 2700 ISX GPS Receiver – Serial #NCD07250015
Sokkia Radian 2700 ISX GPS Receiver – Serial #NCD09410005

Sokkia Radian 2700 ISX GPS Receiver – Serial #NCD09410002
Sokkia Radian IS – Serial #NPV01090012
Sokkia Radian IS – Serial #NPV01090040
Sokkia Set 3-30R3 Total Station -- Serial #136348
Sokkia SRX3 Robotic Total Station Serial # 102475
Allegro Data Collector Serial # 73067
Allegro Data Collector Serial # 104175
Carlson Explorer Data Collector Serial # HH272167
Carlson Explorer 600+ Data Collector -- Serial #HH339518

b. Software

Sokkia Spectrum Survey Version 4.22 Serial #GCT00825/0827Y42100A09

APPENDIX B

As discussed in Chapter 3 of the Draft EA, the proposed action alternatives have the potential to result in impacts to Water Quality and Resources; Cultural Resources; Land Use, Visual Resources and Recreation; and Health and Safety, and these resources are discussed in detail in the Draft EA. Local resource experts have anticipated no impacts to Groundwater, Coastal Zone Management, Air Quality, Socioeconomics, Noise, Provision for the Handicapped/Environmental Justice/Protection of Children, and Transportation. The basis for excluding these resources is discussed below.

Biological Resources. Common Wildlife. Common wildlife which would be expected to occur on HAAF include white-tailed deer (*Odocoileus virginianus*), wild boar (*Sus scrofa*), foxes (*Felis* spp.), bobcat (*Lynx rufus*), rabbits (*Sylvilagus* spp.), squirrels (*Sciurus* spp.), and a variety of smaller mammals. In addition to a diverse assemblage of forest songbirds, wild turkey (*Meleagris gallopavo*), bobwhite quail (*Colinus virginianus*), and several other species are important game birds on the Installation (FSGA, 2005). Impacts to wildlife would be temporary and occur only during timber, brush, and remaining debris removal, when animals would flush from these areas. The wildlife would return once these activities cease, and no adverse impacts to these species are anticipated. Accordingly, this resource is not discussed further.

Migratory Birds. There are approximately 170 species of birds protected under the Migratory Bird Treaty Act (MBTA) that could occur on FSGA/ HAAF, either seasonally or year round, and many of these species are expected to occur at least temporarily in the area of the action alternatives on HAAF (FSGA, 2005). The Installation complies with the MBTA by implementing Army Policy Guidance of 17 August 2001 and Executive Order 13186 (*Responsibilities of Federal Agencies to Migratory Bird Treaty Act*, 11 January 2001). FSGA/HAAF work to manage and conserve migratory bird species through implementation of its Integrated Natural Resources Management Plan and consider effects to migratory birds in any proposed action through the NEPA process. As with wildlife, migratory birds would temporarily flush from the areas where timber, brush, and debris removal is occurring and relocate to areas of non-disturbance, but would return to their original areas once activities cease, resulting in no adverse impacts to these species. Therefore, this resource will not be discussed further.

Protected Species. Protected species include those that are listed or proposed for listing as threatened or endangered by the USFWS, as well as those state-protected species that are listed as rare, threatened, and/or endangered by the GA DNR. HAAF is not managed for protected species and contains no critical habitat vital to their support. Review by Installation SMEs determined there would be no impact to these species as a result of implementation of the action alternatives. Accordingly, this resource will not be discussed.

Plants. HAAF is located in the Atlantic Coastal Plain of southeastern Georgia and includes mixed upland forests with a canopy dominated by loblolly pine (*Pinus taeda*), slash pine (*Pinus elliottii*), water oak (*Quercus nigra*), pignut hickory (*Carya glabra*), sweet-gum (*Liquidambar styraciflua*), southern magnolia (*Magnolia grandiflora*), and black-gum (*Nyssa sylvatica*). These forests are characterized by a sub-canopy, scrub-shrub, and herbaceous layer of sand laurel oak (*Quercus hemisphaerica*), water oak, sweet-gum, southern magnolia, cabbage palmetto (*Sabal palmetto*), American holly (*Ilex opaca*), highbush blueberry (*Vaccinium corymbosum*), wax myrtle (*Myrica cerifera*), muscadine (*Vitis rotundifolia*), and bracken fern (*Pteridium aquilinum*) (FSGA, 2005).

The forests within the boundaries of HAAF are not actively managed for timber production/sales or longleaf pine regeneration, and forest management activities on HAAF consist primarily of clearing and thinning in

support of Army construction projects or for the periodic control of southern pine beetle infestations. Because the proposed action does not contain merchantable timber, the Installation's Forestry Office will not harvest the vegetation. Instead, the construction contractor will remove the vegetation and dispose of the debris in an approved disposal facility off-Post. Thus, timber resources are not discussed.

Groundwater. The groundwater resources of coastal Georgia are recognized as some of the most productive in North America (Harland Bartholomew and Associates 1993). The Floridan is the principal artesian aquifer and provides most of the fresh water for cities and communities throughout southeastern Georgia, to include the City of Savannah and HAAF, where it lies between 300 and 450 feet below the surface. The principal aquifer recharge zone is located approximately 100-miles northwest of the City of Savannah, where the upper boundary of the aquifer's confining layer outcrops at the surface (Harland Bartholomew and Associates 1993). The ground disturbance associated with the proposed action is temporary and will not result in disturbance at a depth sufficient to result in adverse impacts to the aquifer system in this area.

Coastal Zone Management. Chatham County, which includes HAAF, is located within the coastal zone of Georgia and is required to conform to state coastal zone requirements. The Georgia Coastal Management Program is authorized by the Coastal Zone Management Act (CZMA) and administered by the Georgia Department of Natural Resources (GA DNR), Coastal Resources Division, and a network of state agencies. In Georgia, an action is considered consistent with the CZMA if it complies with all relevant federal and state laws, to which implementation of the proposed action and its alternatives will adhere. There are no anticipated direct, indirect, or cumulative impacts to Georgia's coastal zone. The current coastal marshland jurisdictional boundary is approximately half a mile from the nearest point of the proposed action area. Because the Army will require an ESPCP in accordance with the CWA, GWQA, and GA ESCA, and will periodically monitor the action to ensure sensitive resource impacts, to include surface waters in and near the action area, are avoided. The Army will require the contractor to correct any deficiencies immediately. The Army will also consult with the GA DNR-Coastal Resources Division as part of the NEPA process for this action. As such, this resource is not carried forward for further analysis.

Air Quality. Air quality in a given location is described by the concentration of various pollutants in the atmosphere, with the significance of the pollutant concentration determined by comparing it to the Federal and State National Ambient Air Quality Standards (NAAQS). HAAF's air quality is better than the NAAQS and implementation of the proposed action will not change this status. Therefore, this resource is not carried forward for further analysis.

Noise. Noise is any undesirable sound that interferes with communication, is intense enough to damage hearing, diminishes the quality of the environment, and/or is otherwise annoying. Response to noise varies by the type and characteristics of the noise source, distance from the source, receptor sensitivity, and time of day. Noise can be intermittent or continuous, steady or impulsive, and may come from either stationary or mobile sources. Helicopter and aircraft operations and maintenance activities dominate the noise environment on HAAF, which range between 65 and 85 ADNL, although the daily operation of motor vehicles in and around HAAF is also considered a minor source of noise and typically ranges from 50 dB (for light traffic) to 80 dB for diesel trucks. The trees and vegetation to be removed as part of the action alternatives do not provide an effective buffer for aircraft noise associated with current airfield operations. The trees provide a minimal line of site buffer, which can affect a listener's perception of noise. However,

the change in line of site will be minimal, particularly in the direction of residential areas, and implementation of the proposed action is not expected to result in a change to the current noise environment of HAAF. Therefore, this resource is not carried forward for further analysis.

Socioeconomics/Environmental Justice/Protection of Children. Socioeconomics focuses on the general features of the local economy that could be affected by the proposed action. Completion of the proposed action is not expected to result in the creation of new jobs and/or a change in the local economy, as it will occur entirely within the Installation boundary, where no low-income or minority populations reside, and where there are no children residing and/or frequently visiting, environmental justice and protection of children are also not carried forward for further analysis.

Provision for the Handicapped. The Americans with Disabilities Act (ADA) guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications. The proposed action does not fall under the purview of the ADA; therefore, this provision has been eliminated from further analysis in this Draft EA.

Transportation. Adverse impacts are not expected because any contractors working on the proposed action will be required to coordinate with the Installation prior to working on the site. A plan will be developed to ensure on-Post traffic remains as unhindered as possible. Should the No Action Alternative be chosen, there would be even less of a change in the existing transportation network/environment on HAAF, as no timber harvest will occur. Therefore, this resource is not carried forward for further analysis.

APPENDIX C



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, US ARMY GARRISON, FORT STEWART / HUNTER ARMY AIRFIELD
DIRECTORATE OF PUBLIC WORKS
1587 FRANK COCHRAN DRIVE
FORT STEWART, GEORGIA 31314

REPLY TO
ATTENTION OF

IMSH-PW

MEMORANDUM FOR CONTRACTORS

SUBJECT: DPW Policy Letter #10 – Dry Detention Basins (Revised 14 March 2012)

1. REFERENCES.

- a. Federal Clean Water Act (CWA), as amended (33 U.S.C.1251 et seq.), and Clean Water Act stormwater regulations 40 CFR 122.26.
- b. Executive Orders #13423 Energy Independence and Security Act-2007, and #13514 Federal Leadership in Environmental, Energy, and Economic Performance-2009; Section 438-Stormwater.
- c. Policy Memo 19 JAN 10, Office of the Under Secretary of Defense, DoD Implementation of Stormwater Requirements under Section 438 of the Energy Independence and Security Act.
- d. Georgia Water Quality Control Act, as amended, O.C.G.A. §12-5-20, *et seq.*, and the Rules for Water Quality Control, Chapter 391-3-6, promulgated pursuant thereto, as amended
- e. Erosion & Sedimentation Control Act, as amended, O.C.G.A §12-7-1, *et seq.*, and the Rules for Erosion & Sedimentation, Chapter 391-3-7, promulgated pursuant thereto, as amended

2. PURPOSE. This memorandum replaces the former Policy Letter #10 and re-establishes the Directorate of Public Works policy concerning erosion and sedimentation controls, standards, and specifications for dry detention basins and stormwater controls for flooding.

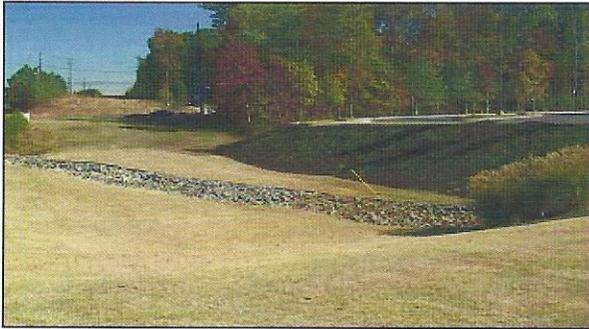
3. APPLICABILITY. This policy applies to all contractors and government employees at Fort Stewart and Hunter Army Airfield.

4. RESPONSIBILITIES. The following are the minimum standards for contractors to use to ensure uniformity of the use of dry detention basins throughout the Installation.

- a. Fort Stewart/Hunter Army Airfield (FS/HAAF) must comply with the State of Georgia National Pollutant Discharge Elimination Systems Permitting reference; the DPW Stormwater Policy #11, FS/HAAF Construction Site Runoff Control and FS/HAAF Post-Construction New-Redevelopment requirements which can be found with other Stormwater Management documents at the following web link: http://www.stewart.army.mil/dpw/EN_Downloads.asp.

Therefore, overall stormwater designs must focus on maintaining or restoring the hydrologic performance of the watershed in its pre-development condition. Traditional, centralized stormwater management connects impervious surfaces to efficiently route stormwater to regional or site specific detention facilities to mitigate peak flow. Although these facilities may be successful in reducing the peak flow rate to the pre-development level immediately downstream of these facilities they serve, this approach may become ineffective in addressing the water quality of surface runoff and reducing downstream flooding since a greater volume of stormwater still runs off from these developed areas below the peak flow rate.

As noted above, centralized stormwater practices must now be replaced with *Low Impact Development (LID)* and *Green Infrastructure (LID/GI)* stormwater control practices. The LID/GI approach focuses on disconnecting the impervious surfaces and intercepts and treats surface runoff at the source. LID/GI stormwater control practices utilize *Best Management Practices (BMPs)*, such as bio-retention, rain gardens, vegetative enhanced swales, and other infiltration practices, which increase groundwater recharge, and improves surface water quality along with detention and extended detention basins, which protect stream channels, and reduces downstream flooding. The objective of the LID/GI method is to reduce the volume of stormwater required to be detained and effectively improve water quality via the treatment train LID/GI BMPs.



Dry Detention Basins-Description:

A dry detention basin is a surface storage basin or facility designed to provide water quantity control through detention of stormwater runoff.



Extended Detention Basins (EDBs)-Description

An extended detention basin (EDB) is a basin designed to detain stormwater for many hours after storm runoff ends. This BMP is similar to a detention basin used for flood control, however; the EDB uses a much smaller outlet that extends the emptying time of the more frequently occurring runoff events to facilitate pollutant removal. The EDBs drain time for the water quality volume (WQv) is recommended to remove a significant portion of total suspended solids (TSS).

- b. As referenced within the *Georgia Stormwater Management Manual and Coastal Stormwater Supplement (GASWMM/CSS)*, water *quantity* management practices can only be used to *manage* the post-construction stormwater runoff rates and volumes generated by larger, less frequent rainfall events (e.g., 1-year, 24-hour event, 25-year, 24-hour event). They provide little, if any, stormwater runoff reduction or stormwater quality protection (Storm Water Management [SWM])

Criteria #1 & #2, respectively). Consequently, it is recommended they be used in conjunction with LID/GI practices and general application stormwater management practices to completely satisfy the aquatic resource protection (SWM Criteria #3), overbank flood protection (SWM Criteria #4) and extreme flood protection (SWM Criteria #5) criteria presented in the GASWMM/CSS. Two (2) of the water quantity management practices that may be used in coastal Georgia with LID/GI treatment trains include:

- Dry Detention Basins
- Extended Detention Basins

c. General Description

Dry detention basins or Extended Detention basins (EDBs) are surface facilities intended to provide for the temporary storage of stormwater runoff to reduce downstream water quantity impacts. These facilities temporarily detain stormwater runoff, releasing the flow over a period of time. They are designed to completely drain following a storm event and are normally dry between rain events.

Dry detention basins are intended to provide overbank flood protection (peak flow reduction of the 25-year storm) and can be designed to control the extreme flood (100-year) storm event.

Dry EDBs provide downstream channel protection through extended detention of the channel protection volume, and can also provide 25-year and 100-year control.

Both dry detention and EDBs provide limited pollutant removal benefits and are not intended for water quality treatment. Detention-only facilities must be utilized with a treatment train approach with other LID/GI structural control BMPs which provide treatment of the water quality volume requirements. Compatible multi-objective use of dry detention facilities is strongly encouraged.

d. Design Criteria and Specifications

Dry Detention and EDBs should be incorporated into the overall stormwater design for development and redevelopment projects as follows:

e. Location

Dry detention and EDBs are to be located downstream of other LID/GI general application structural controls (*bioretention, sand filters, infiltration trench and enhanced swale*) which are typically used in combination with detention controls for treatment of the water quality volume (WQv). The detention facilities are located downstream from the water quality controls either on-site or combined into a regional or neighborhood facility. See Section 3.1 GASWMM/CSS and the United States Environmental Protection Agency Technical Guidance for Implementation of Section 438 for more information on the use of multiple structural controls such as LID/GI in a treatment train.

- The maximum contributing drainage area to be served by a single dry detention or EDB is 75 acres.
- EDBs are well suited for watersheds with at least five impervious acres up to approximately one square mile of watershed. Smaller watersheds can result in an orifice size prone to clogging. Larger

watersheds and watersheds with base flows can complicate the design and reduce the level of treatment provided. EDBs are also well suited where flood detention is incorporated into the same basin. The depth of the seasonable high groundwater table should be investigated. Groundwater depth should be one (1) or more feet below the bottom of the basin in order to keep this area dry and maintainable.

- Always maximize the distance between the inlet and the outlet. It is best to have a basin length (measured along the flow path from inlet to outlet) to width ratio of at least 2:1. A longer flow path from inlet to outlet will minimize short circuiting and improve reduction of TSS. To achieve this ratio, it may be necessary to modify the inlet and outlet points through the use of pipes or swales.

f. General Design

- Dry detention basins are sized to temporarily store the volume of runoff required for a minimum of 24 hours and to provide overbank flood protection (i.e., reduce the post-development peak flow of the 25-year storm event to the pre-development rate), and control the 100-year storm.

EDBs are sized to provide extended detention of the channel protection volume for a minimum of 72 hours and can also provide additional storage volume for normal detention (peak flow reduction) of the 25-year and 100-year storms.

Routing calculations must be used to demonstrate that the storage volume is adequate. Hydraulic considerations are needed to ensure the basin is sized to store the entire (or remaining volume after installation of LID/GI BMPs) water quality design volume (removal of Total Suspended Solids [TSS] by 80%) and the outlet structure must be sized as to provide desired hydraulic detention time of 24 hours as a minimum for the 1-year, 24-hour storm.

- Storage volumes greater than 100 acre-feet are subject to the requirements of the Georgia Safe Dams Act (see Appendix H of the GASWMM) unless the facility is excavated to this depth.
- Vegetated embankments shall have side slopes no steeper than 3:1 or 4:1 (horizontal to vertical). The basin side slopes should be stable and gentle to facilitate maintenance and access. Slopes that are flatter should be utilized to allow for conventional maintenance equipment, and for improved safety and aesthetics. Riprap-protected embankments shall be no steeper than 3:1.
- The maximum depth of the basin should not exceed 4 feet. The final grade of the basin floor shall be no deeper than one (1) foot above seasonal high water table.
- Areas above the normal high water elevations of the detention facility should be sloped toward the basin to allow drainage. Careful finish grading is required to avoid creation of upland surface depressions that may retain runoff. A low flow or pilot channel across the facility bottom from the inlet to the outlet (often constructed with geotextile underlayment and riprap) is recommended to convey low flows and prevent standing water conditions.
- Forebay Designs for EDBs: The forebay provides an opportunity for larger particles to settle out in an area that can be easily maintained. The length of the flow path through the forebay should be maximized, and the slope minimized to encourage settling.

- a) The appropriate size of the forebay may be as much a function of the level of development in the tributary area as it is a percentage of the WQv.
- b) When portions of the watershed may remain disturbed for an extended period of time, the forebay size will need to be increased due to the potentially high sediment load. The forebay outlet should be sized to release 2% of the un-detained peak 100-year discharge.
- c) A soil riprap berm with 3:1 side slopes (or flatter) and a pipe outlet or a concrete wall with a notch outlet should be constructed between the forebay and the main EDB.
- d) Micropool EDBs: Micropool extended detention basins are a variation of the standard wet extended detention pond that have only a small permanent pool (i.e., micropool). The “micropool” provides enough storage for approximately 10% of the stormwater runoff volume generated by the target runoff reduction rainfall event (e.g., 85th percentile rainfall event). The remainder of the stormwater runoff volume generated by the target runoff reduction rainfall event is managed in an extended detention zone provided immediately above the “micropool” and released over an extended 24-hour period.

- The following areas will be sodded: (1) Bottom of the detention basin, (2) Inside side slopes of the detention basin, and (3) Outward, ten feet from the edge of the detention basin. All other disturbed areas will be seeded with temporary and permanent grasses; contact the Natural Resources Conservation Service for appropriate seasonal seed mixes. Utilization of erosion control blankets, permanent and/or temporary, as required, for prevention of erosion rills is required.
- Adequate maintenance access must be provided for all detention basins.
- All detention basins within one-thousand (1000) feet of any housing and/or school facility shall be secured with a four (4) foot chain link style fence.
- During construction of any project on FS/HAAF the following erosion and sedimentation best management practices are not permitted:
 - 1) Man made “haybales”
 - 2) The use of slotted board dams as a retrofit on less than 30 acres is not allowed. Instead, a perforated half-round pipe with a stone filter ring must be utilized.

g. Inlet and Outlet Structures

There are a wide variety of outlet structure types, the most common of which are, orifices, perforated risers, pipes/culverts, sharp-crested weirs, broad-crested weirs, V-notch weirs, proportional weirs, and combination outlets. Reference Section 2.3 of the GASWMM/CSS for more information on the design criteria for *Outlet Structures*.

Each of the above outlet types has a different design purpose and application:

- 1) Water quality and channel protection flows are normally handled with smaller, more protected outlet structures such as reverse slope pipes, hooded orifices, orifices located within screened pipes or risers, perforated plates or risers, and V-notch weirs.

2) Larger flows, such as overbank protection and extreme flood flows, are typically handled through a riser with different sized openings, through an overflow at the top of a riser (drop inlet structure), or a flow over a broad crested weir or spillway through the embankment. Overflow weirs can also be of different heights and configurations to handle control of multiple design flows.

- Inflow channels are to be stabilized with flared riprap aprons, or the equivalent. A sediment forebay sized to 0.10 inches per impervious acre of contributing drainage should be provided for dry detention and EDBs that are in a treatment train with off-line ⁽¹⁾ water quality treatment structural controls.

⁽¹⁾ Structural stormwater controls are designed to be either "on-line" or "off-line." On-line structural controls must be able to handle the entire range of storm flows. Off-line facilities such as bioretention areas, and infiltration trenches on the other hand are designed to receive only a specified flow rate through the use of a flow regulator (i.e. diversion structure, flow splitter, etc). Flow regulators are typically used to divert the WQv to an off-line structural control sized and designed to treat and control the WQv. After the design runoff flow has been treated and/or controlled meeting this WQv, it is returned to the conveyance system or "on-line" structure.

A key decision whether to locate a BMP on-line or off-line. On-line refers to locating a BMP such that all of the runoff from the upstream watershed is intercepted and treated by the BMP. A single on-line BMP should be designed to treat both onsite runoff and upstream (offsite) runoff. Locating BMPs off-line requires that all onsite catchment areas flow through the BMP(s) prior to combining with flows from the upstream (offsite) watershed.

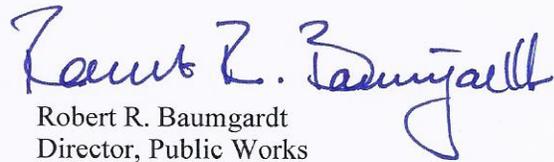
Designers should also be aware that WQv BMPs, especially those that promote infiltration, could result in volume reductions for flood storage. These volume reductions are most pronounced for frequently occurring events, but even in the major event, some reduction in detention storage volume can be achieved if WQv-reduction BMPs are widely used on a site.

- For a dry detention basin, the outlet structure must be sized as to provide desired hydraulic detention time of 24 hours as a minimum for the 1-year, 24-hour storm (based upon hydrologic routing calculations) and can consist of a weir, orifice, outlet pipe, combination outlet, or other acceptable control structure. Small outlets that will be subject to clogging or are difficult to maintain are not acceptable.

The Inlet and Outlet structures must be separated as much as possible to avoid short-circuiting and the positioning of these structures and/or orifices should be above the dry detention basin bottom to provide space for captured sediments and to minimize resuspension of any TSS captured in the basin. The inlet must be designed to safely bypass flows which would exceed the design volume and dissipate flow energy at concentrated points of inflow. This also will limit erosion and promote particle sedimentation.

- For EDBs, a low flow orifice capable of releasing the channel protection volume over 24 hours must be provided. The channel protection orifice should have a minimum diameter of 3 inches and should be adequately protected from clogging by an acceptable external trash rack. The orifice diameter may be reduced to 1 inch if internal orifice protection is used (e.g., an over perforated vertical stand pipe with 0.5-inch orifices or slots that are protected by wirecloth and a stone filtering jacket). Adjustable gate valves can also be used to achieve this equivalent diameter. Reference Section 2.3.1 (*Outlet Structures*) of the GASWMM/CSS for more information on the design of outlet works.

- Seepage control or anti-seep collars should be provided for all outlet pipes.
 - A conveyance shall be installed from all inlets to outlets. The inlet and outlet conveyance final grade is to be a minimum of one (1) foot above the seasonal high water table elevation. The conveyance is required to be lined with geo-textile and with four inches (4") of stone over same (Graded 2"- 4" stone). The conveyance is to be a minimum of 4 feet wide.
 - Riprap, plunge pools or pads, or other energy dissipators are to be placed at the end of the outlet to prevent scouring and erosion (See Section 4.5 of the GASWMM, *Energy Dissipation Design*, for more guidance).
 - An emergency spillway is to be included in the stormwater basins design to safely pass the extreme flood flow. The spillway prevents pond water levels from overtopping the embankment and causing structural damage. The emergency spillway must be designed to State of Georgia guidelines for dam safety (see Appendix H of the GASWMM) and must be located so that downstream structures will not be impacted by spillway discharges.
 - A minimum of 1 foot of freeboard must be provided, measured from the top of the water surface elevation for the extreme flood, to the lowest point of the embankment not counting the emergency spillway.
5. PROPONENT: The Directorate of Public Works (DPW) is the proponent for this policy. The point of contact is DPW, Environmental Division, at commercial (912) 767-2010 or DSN 870-2010.


Robert R. Baumgardt
Director, Public Works

NOV 04 2011

MEMORANDUM FROM DPW

MEMORANDUM FOR CONTRACTORS AND TENANTS

SUBJECT: DPW Policy Letter # 11 - Stormwater Management Program

1. REFERENCES.

a. Federal Clean Water Act (CWA) at 33 U.S.C. §1251, *et seq.*; and its implementing regulations found at 40 CFR § 122.26, *et seq.*

b. Section 438 of the Energy Independence and Security Act at 42 U.S.C. §17094.

c. Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, 5 October 2009.

d. Georgia Water Quality Control Act, O.C.G.A. §12-5-20, *et seq.*, and its implementing rules found at Ga. Admin. Comp. ch. 391-3-6, *et seq.*

e. Georgia Erosion & Sedimentation Control Act, O.C.G.A. §12-7-1, *et seq.*, and its implementing rules found at Ga. Admin. Comp. ch. 391-3-7, *et seq.*

f. Deputy Under Secretary of Defense (Installations and Environment) Memorandum, DoD Implementation of Storm Water Requirements under Section 438 of the Energy Independence and Security Act, 19 January 2010.

g. AR 200-1, Environmental Protection and Enhancement, 13 December 2007.

2. APPLICABILITY. This policy is applicable to Contractors and Tenants on Fort Stewart/Hunter Army Airfield.

3. PURPOSE. To provide guidance on the Stormwater Management Program.

4. POLICY. The Installation's stormwater systems are regulated under National Pollutant Discharge Elimination System (NPDES) Permits, as defined in above references.

a. To protect water quality, the Installation is required to have a stormwater management program that reduces the discharge of pollutants from industrial activities, construction activities, and

IMSE-STW-PW

SUBJECT: DPW Policy Letter # 11 - Stormwater Management Program

the Municipal Separate Storm Sewer System (MS4) to the "maximum extent technically feasible."

b. For any new development and redevelopment that occurs on the Installation, the stormwater management program must include best management practices (BMPs) for construction site stormwater runoff control and post-construction stormwater management.

c. For new development or redevelopment of 5,000 sq ft or greater that occurs on the Installation, the stormwater management program must include, to the "maximum extent technically feasible," additional stormwater low impact development BMPs.

d. All personnel are required to comply with the Installation's Stormwater Management Plan, as detailed in the following documents located on the Team Stewart web site at http://www.stewart.army.mil/dpw/EN_Downloads.asp.

(1) Stormwater Pollution Prevention Plan (SWP3) for Industrial Activities

(2) Municipal Separate Storm Sewer Systems (MS4) Notices of Intent

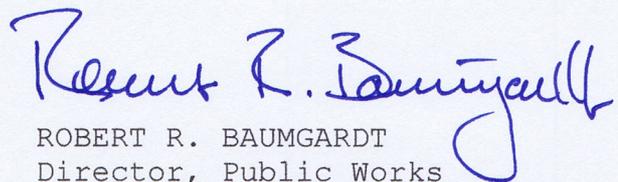
(3) Illicit Discharge, Detection and Elimination (IDDE) Plan

(4) Stormwater Guidance for Construction Site Stormwater Runoff Control

(5) Post-Construction Stormwater Management Guidance for New Development and Redevelopment

(6) Stormwater Maintenance Standard Operating Procedures

5. PROPONENT. The DPW Environmental Division is the proponent for this policy at commercial (912) 767-2010.


ROBERT R. BAUMGARDT
Director, Public Works

APPENDIX D

Kendrick, Melissa B CIV USARMY IMCOM ATLANTIC (US)

From: Winsness, Shannon <Shannon.Winsness@dnr.ga.gov>
Sent: Friday, April 29, 2016 1:07 PM
To: Montano, Christian K CTR USARMY IMCOM ATLANTIC (US)
Cc: McCormick, Amber E CIV USARMY USAG (US); Kendrick, Melissa B CIV USARMY IMCOM ATLANTIC (US); Frazier, Veronica G CIV USARMY IMCOM ATLANTIC (US); Stewart, Robert S CTR (US); Wiley, Kiersten B CTR USARMY IMCOM ATLANTIC (US); Freeman, James L CTR USARMY (US); william.wright@ga.usda.gov; Harris, George A CTR USARMY IMCOM ATLANTIC (US); Coursey, Jesse W CTR USARMY IMCOM ATLANTIC (US)
Subject: [Non-DoD Source] Re: Remove Vegetation at HAAF Runway

EPD will concur with this summary of our site visit to Hunters on 4/28/2016. Please identify all the sites on the plans as non-buffered state waters. No buffer variance requirements.

From: Montano, Christian K CTR USARMY IMCOM ATLANTIC (US) <christian.k.montano.ctr@mail.mil>
Sent: Friday, April 29, 2016 8:47:47 AM
To: Winsness, Shannon
Cc: McCormick, Amber E CIV USARMY USAG (US); Kendrick, Melissa B CIV USARMY IMCOM ATLANTIC (US); Frazier, Veronica G CIV USARMY IMCOM ATLANTIC (US); Stewart, Robert S CTR (US); Wiley, Kiersten B CTR USARMY IMCOM ATLANTIC (US); Freeman, James L CTR USARMY (US); william.wright@ga.usda.gov; Harris, George A CTR USARMY IMCOM ATLANTIC (US); Coursey, Jesse W CTR USARMY IMCOM ATLANTIC (US)
Subject: Remove Vegetation at HAAF Runway

Shannon,

To summaries the site visit yesterday, we visited all the areas where land disturbing activities are planned to take place that had a potential need for a Stream Buffer Variance. GA EPD has determined that all the areas are "Waters of the State", but no definitive wrested vegetation could be identified. As such, GA EPD classifies all these areas as "State Waters without Buffers" and a Stream Buffer Variance is not required. The E&SPCP is required to have the stream in these areas marked as "State Waters without Buffers".

Thanks,
Christian Montano
CTR, Aerostar SES
Environmental Services
DPW Environmental Division
FS Office (912)767-2171
Cell (912)320-0762
HAAF Office (912)315-5537
Christian.Montano@us.army.mil

Any unattributed opinions expressed herein are my own and not those of my employer or the United States Government.

APPENDIX E

Cultural Resource Impact Analysis of the Proposed Runway Vegetative Obstruction Removal at Hunter Army Airfield, Chatham County, Georgia

Prepared by: Brian K. Greer & Ashley E. Moss

Prepared under the supervision of:

Brian K. Greer, M.A., Principal Investigator



**Cultural Resource Management
Prevention & Compliance Branch
Environmental Division
U.S. Army Garrison, Fort Stewart, Georgia
October 12, 2016**

PURPOSE: This Cultural Resource Impact Analysis (CRIA) summarizes the potential impacts to cultural resources and documents the efforts to analyze and determine effects for the purposes of complying with the National Historic Preservation Act and the Installation's Programmatic Agreement (PA) with the Georgia State Historic Preservation Office (SHPO) and other applicable cultural resource laws and regulations. The results of this CRIA are summarized and incorporated into the Installation's Cultural Resource Management Annual Report to the SHPO in accordance with the PA.

PROPOSED ACTION AND AREA OF POTENTIAL EFFECT: The Army proposes to remedy immediate safety concerns associated with vegetation surrounding the runway and to prevent future airspace obstructions. The proposed action is necessary to reduce the potential of obstructive harm to aircraft and passengers that could occur from vegetation penetrating the airspace. The Army proposes to remove all current airfield safety hazards along the Hunter Army Airfield flightline and proactively establish a maintenance footprint to prevent future airspace obstructions.

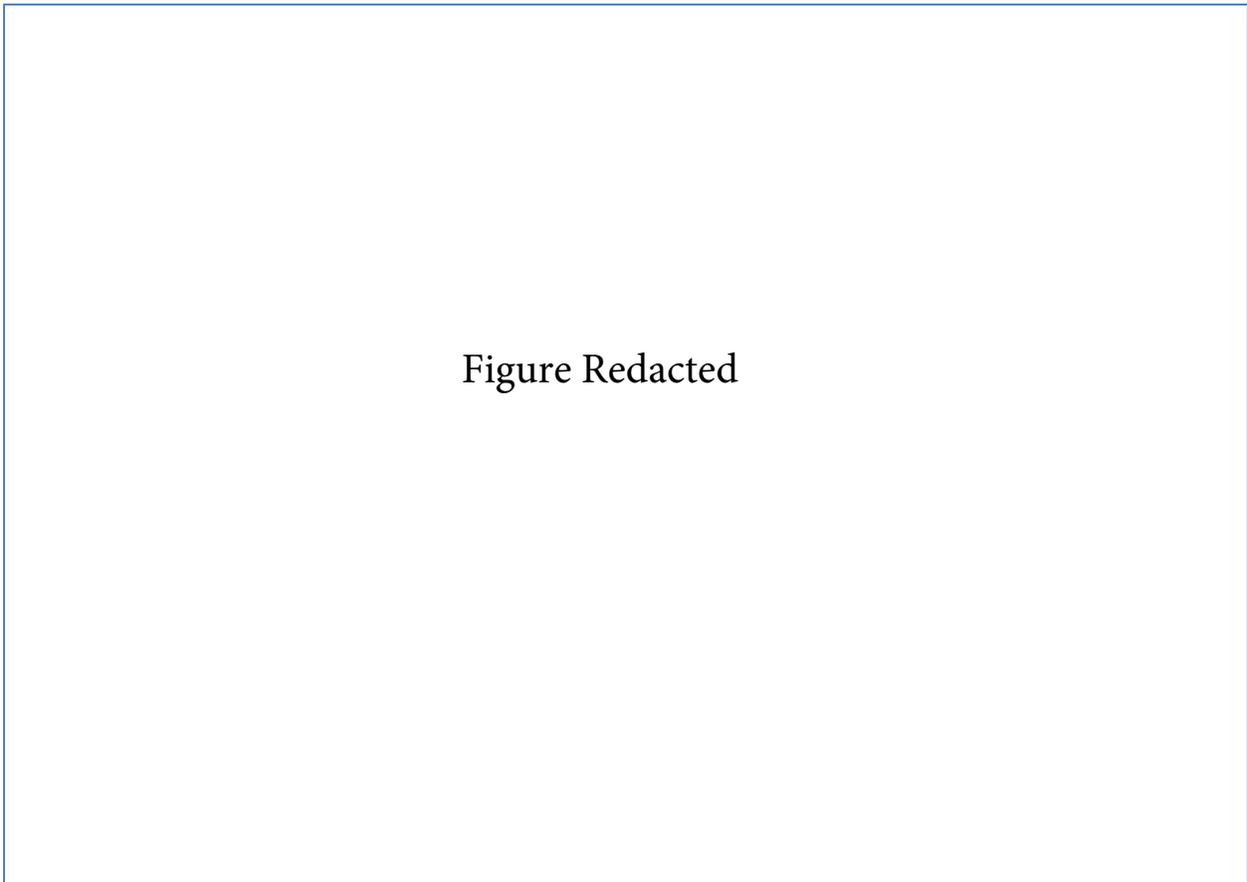


Figure 1: Areas of Potential Effect for Alternatives I & II

ALTERNATIVE I – Clearing with Select Grubbing and Grading (Preferred): Under this alternative, all vegetation identified as airfield safety obstructions will be removed (see Figure 1). Of the areas identified for clearing, approximately 240 acres are upland lands that will be grubbed and graded, including stump removal. Where bare soil

remains, grass seed will be applied to establish permanent ground cover. In wetland areas, consisting of approximately 110 acres, vegetation will be cleared by hand, mowed, or removed using special equipment (such as mats), with no grubbing and grading, and with all mechanical work remaining within six inches from the ground's surface. In essence, this will ensure wetland areas remain unhindered in their ability to filter and/or maintain the flow of water and will prevent the fill of wetland systems. Future maintenance will consist of mowing established grassy areas and selectively mowing / hand clearing wetland areas in a manner that does not compromise aquatic function.

The proposed footprint has been previously surveyed for cultural resources (Smith et al. 1984; Rock et al. 2012). A total of 16 archaeological sites, six linear architectural features, and three relocated historic period cemeteries have been identified within the Area of Potential Effect (see Tables 1-3 and Figure 2). All 16 of the archaeological sites have been determined ineligible for the National Register. Four of the seven linear architectural sites have been recommended potentially eligible for the National Register. The three relocated cemeteries are considered ineligible for the National Register but are *areas of concern* that require archaeological monitoring during any ground disturbing activities.

Figure Redacted

Figure 2: Cultural resources within the Area of Potential Effect

Table 1: Archaeological Resources within the Area of Potential Effect

Site Number	Datum NAD27	NRHP Recommendation	Contractor	Site Type
9CH724	All Coordinates	Ineligible	Brockington FY10	Prehistoric Artifact Scatter/Historic Artifact Scatter
9CH1037	Redacted Due to Site Sensitivity	Ineligible	FSCRM FY05	Historic Building Foundation
9CH1042		Ineligible	Brockington FY10	Prehistoric Isolated Artifact/Historic Artifact Scatter
9CH1044		ISO	FSCRM FY05	Prehistoric Isolated Artifact
9CH1045		ISO	FSCRM FY05	Prehistoric Isolated Artifacts/Historic Isolated Artifacts
9CH1060		ISO	FSCRM FY05	Historic Artifact Scatter
9CH1061		Ineligible	FSCRM FY05	Historic Military Architecture
9CH1234		Ineligible	Brockington FY10	Historic Artifact Scatter
9CH1242		Ineligible	Brockington FY10	Trash Disposal Area
9CH1243		Ineligible	Brockington FY10	Historic Artifact Scatter
9CH1253		Ineligible	Brockington FY10	Trash Disposal Area
9CH1254		Ineligible	Brockington FY10	Historic Artifact Scatter
9CH1259		Ineligible	Brockington FY10	Homestead
9CH1263		Ineligible	Brockington FY10	Prehistoric Artifact Scatter/Historic Artifact Scatter
9CH1265		ISO	Brockington FY10	Isolated Artifact
Field Site# 16.08.01		Ineligible	FSCRM FY16	Early to mid-20 th century artifact scatter and possible well house

During an onsite inspection of the northeastern portion of the project area, an abandoned well and portions of a small structure were discovered within the previously surveyed area (see Figure 3). This archeological site (Field Site Number 16.08.01) was not initially discovered during the previous survey so FSCRM conducted a site delineation and National Register evaluation of the site. Shovel testing produced a light scatter of machine made brick, clear glass, brown glass, unidentified metal fragments, 1 small Coastal Plain chert flake, and a small amount of container glass. Based on the findings, the site appears to be an early to mid- 20th century artifact scatter and remnants of a possible well house. The assessment suggests that the site may be associated with the former College Park Normal and Industrial College which operated from 1914 to 1929. This former African American college was part of the Morris Brown charter of schools established by the African Methodist Episcopal Church of Georgia. According to a former resident of the area, the college consisted of a four-story brick structure and was torn down by the Army in 1941 when it was acquired (Harris 2002). It is not clear as to the exact location of the former building since the Central Park Land Corporation held several tracts at the time of Army acquisition. No evidence of the main building (should it have

existed at this location) was noted at this site. It is probable that any other related structures were razed during the construction of the airfield located to the south of the site.

Table 2: Linear/Architectural Resources within the Area of Potential Effect

Feature Name	Resource Type	North/West Terminus Easting/Northing NAD27	South/East Terminus Easting/Northing NAD27	NRHP Eligibility Recommendations
J	Ditch/Berm	483300 3541675	483423 3541403	Potentially Eligible
K	Ditch/Berm	482964 3541435	483309 3541329	Ineligible
L	Mound (Historic)	483384 3541641		Potentially Eligible
M	Mound (Historic)	483358 3541648		Potentially Eligible
N	Ditch	483329 3541690	483344 3541602	Potentially Eligible
O	Canal	483814 3541664	482285 3540476	Ineligible

Figure Redacted

Figure 3: Linear/Architectural Features identified within Area of Potential Effect

Six previously identified linear/architectural features are within the Area of Potential Effect (Rock et al. 2012; Greer 2011). The linear/architectural features are related to the late 19th century-early 20th century canal system that was developed along the western portions of the project area (see Figures 2 & 3).

Feature “J” consists of a linear architectural feature running on a roughly northwest-by-southeast axis for approximately 284 meters and is composed of a ditch with an average depth of three feet and an average width of eight feet running parallel on the south side of a raised earthen berm measuring approximately two to 2.5 feet tall in most places. The ditch running alongside the south side of the berm is where existing soil was likely extracted (cut) and reinstated in place to create (fill) the raised berm with spoil from the ditch. Feature “J” appears to be an altered extension of a naturally occurring drainage or tributary of the Lamar (formerly Buckhalter) Canal (Feature “O”).

The construction date and original function of Feature “J” is unclear. Little historical documentation for Feature “J” was discovered during the literature review conducted by Brockington & Associates (Rock et al. 2012). Although based upon an initial historic map review, it is presumed that it was constructed sometime before 1890. A likely representation of Feature “J” is depicted on a map of the Savannah area by R. A. Blandford from about 1890. Based off a review of available literature, the main purpose of Feature “J” was likely to facilitate the drainage of low, wetland areas located to the west to make the land more suitable for agriculture or commerce typical to the low country of coastal Georgia, although further research into the original function and exact dates of construction of “Feature J” has been recommended.

More information is needed to determine Feature “J”’s original function and date of construction and to establish its level of integrity in the areas of location, design, materials, workmanship, setting, feeling, and associations with important persons or events, as well the potential for it to represent distinctive characteristics of a type, period, or method of construction. Initially, it was assumed that Feature “J” was part of the 1950s era maintenance on the canal and was recommended ineligible for the NRHP (Greer 2011). However, based on additional information collected by Brockington, Inc., it has been recommended that further investigations be conducted to determine Feature “J”’s definitive eligibility for listing on the NRHP under Criteria A, B, C, or D. Additional research including, but not limited to, a supplementary review of archival and written literature and historic records, a comprehensive historic map and aerial photography comparison, and general investigations into the history of land use in the study area may yield additional details about Feature “J”. Until such time, Feature “J” is considered potentially eligible for the NRHP. (Rock et al. 2012)

Feature “K” consists of a linear architectural feature running on a roughly northwest-by-southeast axis for approximately 370 meters and is composed of a ditch with an average depth of three feet and an average width of eight feet (see Figure 2). The ditch running alongside the south side of the berm is where existing soil was likely extracted (cut) and reinstated in place to create (fill) the raised berm with spoil from the ditch. Feature “K” appears to be an altered extension of a naturally occurring drainage or tributary of the Lamar (formerly Buckhalter) Canal (Feature “O”).

The construction date and original function of Feature “K” is unknown, although it likely occurred during the modifications made to the Buckhalter Canal in the 1950s (Greer 2011:6). Little historical documentation for FID-K was discovered during the preliminary literature review, and it is not featured on any historic maps. The original purpose of Feature “K” was likely to facilitate the drainage of low, wetland areas surrounding it to make the land more suitable for agriculture or commerce typical to the low country of coastal Georgia.

While Feature “K” appears to retain integrity in the areas of location, design, materials, and workmanship, it does not possess any historical significance beyond its association with the Buckhalter Canal. This feature was determined ineligible for the NRHP in consultation with the Georgia State Historic Preservation Office during consultation regarding a proposed Saltmarsh Mitigation Bank project in 2011 (Greer 2011).

Features “L”, “M”, and “N”, located within the western portion of the project area consist of two small earthen mounds (Features “L” and “M”) and a drainage ditch (Feature “N”) which consists of a linear architectural feature running on a roughly north-south axis for approximately 90 meters. Feature “N” has an average depth of approximately five feet and an average width of 4.5 feet. Feature “L” and “M” are small earthen mounds measuring approximately five to six feet tall with an average diameter of 10 feet at the base of each. Feature “L” and “M” were likely formed when soil was extracted (cut) from Feature “N” and reinstated in place to create (fill) the two mounds with spoil from Feature “N”.

The construction dates and original functions of Features “L”, “M”, and “N” are unknown. Little historical documentation for them was discovered during the preliminary literature review, and they are not featured on any historic maps. Based off their physical proximity with the nearby Seaboard Coast Line Railroad corridor located to the north, the main purpose of Feature “N” was likely to facilitate the drainage of the railroad corridor, although further research into the original function and exact dates of construction of the three features has been recommended.

More information is needed to determine Features “L”, “M”, and “N”’s original functions and dates of construction and to establish their level of integrity in the areas of location, design, materials, workmanship, setting, feeling, and associations with important persons or events, as well the potential for them to represent distinctive characteristics of a type, period, or method of construction. It is recommended that further investigations be conducted to determine FID-J’s definitive eligibility for listing on the NRHP under Criteria A, B, C, or D. Additional research including, but not limited to, a supplementary review of archival and written literature and historic records, a comprehensive historic map and aerial photography comparison, systematic metal-detector testing, and general investigations into the history of land use in the study area may yield additional details about Features “L”, “M”, and “N”. Until such time, Features “L”, “M”, and “N” are considered potentially eligible for the NRHP.

Feature “O” consists of a linear architectural feature running northwest from its

confluence with Henry Creek near for approximately 2,175 meters within the project area (see Figure 3). Feature “O” is composed of a drainage canal varying in width from 12 to 20 meters wide and appears to be an altered section of a naturally occurring drainage known as Henry Creek.

Although Feature “O” was originally constructed in the late 1890s by Chatham County as part of a greater public works program known as the Chatham County Drainage System, it lacks integrity in the areas of design, materials, workmanship, and feeling due to multiple alterations to its form and function, both in the 1950s and again in the 1990s. Brockington’s study concurred with Maggioni and Greer’s findings that Feature O is ineligible for listing as an individual resource on the NRHP (Maggioni 2009:19; Greer 2011).

Table 3: Relocated Historic Period Cemeteries

Cemetery ID	Cemetery Name	Disposition
BSF-1	Buckhalter, Sycamore, and Flowersville Cemetery 1	Relocated to BSF-2 initially. Subsequently relocated to the Zion-White Bluff Colored Baptist Church Cemetery and the Eureka/Belmont Cemetery.
BSF-2	Buckhalter, Sycamore, and Flowersville, Cemetery 2	Relocated to the Zion-White Bluff Colored Baptist Church Cemetery
Oakland	Oakland Cemetery	Relocated to Zion-White Bluff Colored Baptist Church Cemetery

Figure Redacted

Figure 4: Relocated Cemeteries within the Area of Potential Effect

There are three previously relocated cemeteries within the Area of Potential Effect within the southern central portion of the project area (See Figures 2 & 4). These three cemeteries were located in the former community of Flowersville. In 1951, when the US Air Force began construction of the 10,500 foot runway to accommodate its new B-47 jet bombers, there were three cemeteries in the path: the old *Buckhalter, Sycamore, and Flowersville Cemetery* (BSF-1), the new *Buckhalter, Sycamore, and Flowersville Cemetery* (BSF-2), and the *Oakland Cemetery*. BSF Cemetery 1 was formally established in 1908, when Diederich Grimm conveyed portions of Lots N-8 and N-9 of the Grimm Subdivision to the Cemetery owners on March 31 of that year (Chatham County Deed Book 9R: 256). The US government condemned BSF Cemetery 1 in 1942 as Hunter Field expanded westward to Buckhalter Road as part of its buildup during the early stages of World War II (United States District Court 1944). After condemnation, the ownersⁱ of BSF Cemetery 1 acquired 4.7 acres of land for a new cemetery, south across Buckhalter Road opposite BSF Cemetery 1. They also called this new cemetery the *Buckhalter, Sycamore, and Flowersville Cemetery* (BSF-2). The new BSF Cemetery 2 was established adjacent to an existing burial ground, the one-acre Oakland Cemetery (the development date and origin of this cemetery is unknown).

In early 1951, the Air Force owned the BSF Cemetery 1 property, while private owners held title to the BSF Cemetery 2 and Oakland Cemeteries. However, the Air Force wished to expand Hunter Air Force Base across Buckhalter Road, primarily to accommodate a new, longer runway for jet bombers. This expansion included both BSF Cemetery 2 and Oakland Cemeteries. Pursuant to this effort, the City of Savannah worked hand-in-hand with the federal government to resolve all property issues (Savannah Morning News, January 24, 1951).

Prior to construction on the new runway, the Air Force surveyed BSF Cemetery 1 to locate remains for removal. This was almost ten years after BSF Cemetery 1 had been condemned. The Installation identified 127 marked graves in BSF Cemetery 1, and on May 31, 1951, the U.S. District Court, Southern District of Georgia, approved the Air Force request for the removal of the remains (Corps of Engineers 1951). The federal government contracted with a local funeral home in Savannah to remove the remains from BSF-1 to the Zion-White Bluff Colored Baptist Church Cemetery on White Bluff Road (off-post and three miles from the project area) in June 1951 (Hester 1951, Odell 1952). Across Buckhalter Road, in anticipation of federal condemnation of BSF-2 and Oakland Cemeteries, the City of Savannah contracted with the same funeral home to remove these cemeteries' graves (No author 1951). 32 graves were removed from BSF-2 and 25 graves at Oakland Cemetery in August 1951 (Hester 1951). The US government then condemned BSF Cemetery 2 and Oakland Cemeteries in September (Chatham County Deed Book 54L: 361).

Work then began on the new runway. However, on October 24, 1951, Corps of Engineers and contract personnel began uncovering additional graves on or near the site of *BSF 1*. From October 24-25, 1951, personnel found 46 graves. On October 26, the Savannah District Engineer halted runway construction until all the bodies recovered up to that point

had been reburied on the Installation in a “temporary location” designated by Air Force authorities, as Zion-White Bluff Cemetery had already been filled to capacity with the removal of the other remains from BSF Cemetery 1, BSF Cemetery 2, and Oakland Cemeteries. This “temporary location” was originally called *Eureka Cemetery* and later re-designated as a permanent facility, known as *Belmont Relocation Cemetery*.

After this, work on the runway continued with the funeral home on-site for any required reinternments to Eureka/Belmont Cemetery. Bodies continued to be found on-site up through November 6, 1951. By the following day, the funeral home had moved a total of 155 sets of remains to Eureka/Belmont Cemetery. All of the remains were from BSF-1. None came from BSF Cemetery 2 or the Oakland Cemetery (Odell 1952).

ALTERNATIVE II – Clearing with Grubbing and Grading: Under this alternative, all vegetation identified as airfield safety obstructions will be removed and the entire footprint (uplands and wetlands) will be grubbed and graded, with grass seed applied to bare soil to establish permanent ground cover. Future maintenance will consist of mowing established grass. Alternative II’s footprint is identical to Alternative I, the difference being the degree of potential ground disturbance within the wetland areas.

ALTERNATIVE III – No Action/Status Quo: Under this alternative, no vegetation identified as airfield safety obstructions will be removed. No cultural resources will be affected by this alternative.

CONCLUSION

Under Alternative I, all archaeological resources have been determined ineligible for the National Register of Historic Places. Per the terms of the Programmatic Agreement between the Installation and the Georgia State Historic Preservation Office, when a determination of no adverse effect to historic properties is concluded, the summary of findings are included within an Annual Report to the SHPO for all Section 106 undertakings executed by the Installation. As such, a copy of the Cultural Resource Impact Analysis Report will be included within the FY16 Annual Report.

Regarding the Linear/Architectural features identified within Alternative I, there are no anticipated adverse effects that will occur from the proposed vegetative clearing. Alternative I will maintain a 25-foot vegetative buffer around the Lamar Canal and erosion/sedimentation measures will be put into place using standard Best Management Practices. No grubbing/grading will occur within the wetland areas under the preferred alternative. Any mechanical work will remain within six inches from the ground surface. With these measures, no adverse impacts to the potentially eligible components of the canal features are anticipated to occur.

Although three former cemeteries are located in the Area of Potential Effect under Alternative I, there is a low to very low potential for encountering unmarked burials. The exact boundaries of the former cemeteries are approximated. The boundaries are

defined by the original land parcels (i.e. the entire parcel) and therefore it is entirely possible that the former cemeteries are located outside of the proposed footprint. Coupled with the fact that the cemeteries were reinterred completely in good faith effort and were relatively recently reinterred, the likelihood of encountering burials remains low. In the abundance of caution, archaeological monitoring will be required for any significant ground disturbing activities (i.e. >30cm) within the former cemetery parcels. Should any human remains or related grave goods/hardware be encountered, all work will cease within a minimum of 30 feet of any burial and an archaeological assessment will begin. Appropriate avoidance measures will be implemented and if reinternment is required, appropriate coordination with the SHPO, ACHP, and other interested stakeholders will be undertaken, as applicable.

For Alternative II, the footprint will remain the same; however, the degree of impact within the wetland areas will be increased (i.e. grubbing and grading may occur). Should Alternative II be selected, additional coordination with project proponents will occur for area within the wetland areas on the western portions of the proposed footprint. The linear/architectural features that are potentially eligible for listing on the National Register will be marked/avoided as necessary and/or alternative low impact methods will be employed to ensure no alterations to the resource occur. For the archaeological resources and relocated cemeteries, the same impacts and avoidance/monitoring measures will be employed.

For all three alternatives, this cultural resource analysis has determined that there will be no unmitigated adverse effects to historic properties as defined under the National Historic Preservation Act. No areas of tribal interest (i.e. Sacred Sites, properties of religious importance, and/or Native American Graves Protection and Repatriation Act related resources) have been identified with all three alternatives. In regard to significant impacts to cultural resources under the National Environmental Policy Act, the threshold level of significance is defined as any unmitigated adverse impact to historic properties, areas of tribal interest, or other cultural resources of substantive concern. Since no unmitigated adverse effects to cultural resources are anticipated as a result of the proposed undertaking, the threshold level of significance for cultural resources has not been met for the proposed actions under all three alternatives. Cumulative impacts to cultural resources are considered negligible under Alternative I and minor under Alternative II (due to elevated potential impacts to the linear/architectural features associated with the historic canal system).

REFERENCES CITED

Chatham County
n.d. Deed Books.

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No Author
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Odell, L. J.
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HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

October 17, 2011

Robert R. Baumgardt
Department of the Army
Headquarters, US Army Garrison, Fort Stewart/Hunter Army Airfield
Directorate of Public Works
1587 Frank Cochran Drive
Fort Stewart, Georgia 31314
Attn: Brian Greer, brian.greer@us.army.mil

**RE: HAAF: Tide Gate Wetland Mitigation Bank, 273 Acres, Little Ogeechee River
Chatham County, Georgia
HP-090505-014; Reference HP-090330-003 (USACE Permit No. 200801081)**

Dear Mr. Baumgardt:

The Historic Preservation Division (HPD) has reviewed the additional information submitted concerning the above referenced undertaking. Our comments are offered to assist the Department of the Army (Army) in complying with provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA). **Please note that this replaces our correspondence dated October 6, 2011.**

HPD understands that the project's area of potential effects (APE) has been determined to extend beyond the previously analyzed area and includes areas off installation, specifically portions of the Rockingham Tract and the Lamar Canal Off-Post Area. Based on the information provided, HPD agrees that TG-4, TG-5, TG-7 and the Atlantic and Gulf Railroad corridor should be considered eligible for listing in the National Register of Historic Places (NRHP). Furthermore, HPD agrees that the project as proposed will result in **No Adverse Effect** to historic properties within its APE, as defined in 36 CFR Part 800.5(d)(1).

If we may be of further assistance, please do not hesitate to contact Elizabeth Shirk, Environmental Review Coordinator, at (404) 651-6624 or via email at Elizabeth.shirk@dnr.state.ga.us.

Sincerely,

Karen Anderson-Cordova, Program Manager,
Environmental Review & Preservation Planning

KAC/ECS

cc: Mark Padgett, USACE
Lupita McClenning, Coastal Georgia RDC



HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

October 6, 2011

Robert R. Baumgardt
Department of the Army
Headquarters, US Army Garrison, Fort Stewart/Hunter Army Airfield
Directorate of Public Works
1587 Frank Cochran Drive
Fort Stewart, Georgia 31314
Attn: Brian Greer, brian.greer@us.army.mil

**RE: HAAF: Tide Gate Wetland Mitigation Bank, 273 Acres, Little Ogeechee River
Chatham County, Georgia
HP-090505-014; Reference HP-090330-003 (USACE Permit No. 200801081)**

Dear Mr. Baumgardt:

The Historic Preservation Division (HPD) has reviewed the additional information submitted concerning the above referenced undertaking. Our comments are offered to assist the Department of the Army (Army) in complying with provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

HPD understands that the project's area of potential effects (APE) has been determined to extend beyond the previously analyzed area and includes areas off installation, specifically portions of the Rockingham Tract and the Lamar Canal Off-Post Area. As previously stated, HPD concurs that Lamar (formerly Buckhalter) Canal (TG-6) and two related structures (TG-4 and TG-5) as well as the Atlantic and Gulf Railroad corridor appear eligible for listing in the National Register of Historic Places (NRHP). Furthermore, based on the additional information provided concerning the expanded APE, HPD concurs that the project as proposed will continue to result in **No Adverse Effect** to historic properties within its APE, as defined in 36 CFR Part 800.5(d)(1).

If we may be of further assistance, please do not hesitate to contact Elizabeth Shirk, Environmental Review Coordinator, at (404) 651-6624 or via email at Elizabeth.shirk@dnr.state.ga.us.

Sincerely,

A handwritten signature in black ink that reads "Karen Anderson-Cordova".

 Karen Anderson-Cordova, Program Manager,
Environmental Review & Preservation Planning

KAC/ECS

cc: Mark Padgett, USACE
Lupita McClenning, Coastal Georgia RDC



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, US ARMY GARRISON, FORT STEWART / HUNTER ARMY AIRFIELD
DIRECTORATE OF PUBLIC WORKS
1587 FRANK COCHRAN DRIVE
FORT STEWART, GEORGIA 31314

REPLY TO
ATTENTION OF

Office of the Directorate

Dr. David Crass
Deputy State Historic Preservation Officer
Historic Preservation Division
Georgia Department of Natural Resources
254 Washington Street SW
Ground Level
Atlanta, Georgia 30334

Dear Dr. Crass:

The purpose of this letter is to re-consult with your office regarding changes to the construction and operation of a 273 acre saltwater mitigation bank located at Hunter Army Airfield, Chatham County, Georgia. Previous consultation resulted in a determination of No Adverse Effect to Historic Properties through appropriate avoidance measures [Reference# HP-09055-014 and HP-090330-003 (USACE Permit No. 200810081)].

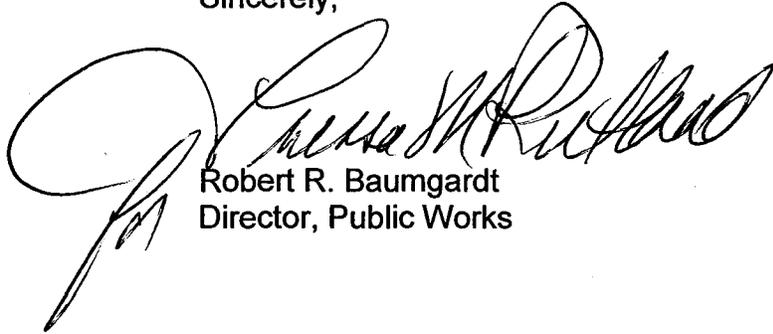
Re-consultation is necessary because the project's area of potential effect has been determined to extend beyond the previously analyzed area and includes areas off of the Installation. The primary change to the area of potential effect is related to areas of tidal inundation. The enclosed Cultural Resource Impact Analysis Report (CRIAR) fully describes and analyzes the cultural resources that may be affected by the proposed action. Please note, a copy of the original analysis report is provided as an appendix to the CRIAR.

The proposed avoidance measures identified in the original consultation regarding Structure TG-4 and TG-5 will be maintained. TG-7, a raised roadbed located within the saltwater mitigation bank, will not be affected by the removal of the tide gate. Based on the analysis conducted in the CRIAR, the Army has determined that the proposed construction and operation of a saltwater mitigation bank would not adversely affect archaeological or architectural resources eligible for listing on the National Register of Historic Places as defined in 36 CFR 800.

The Army is also preparing an Environmental Assessment (EA) for the proposed saltwater mitigation bank. The Draft EA and Draft Finding of No Significant Impact will be mailed to your office for review. Cultural resource impact evaluations will be included as part of the EA, which will provide an opportunity for the public to comment on the proposed action's impact on cultural resources. Please note, this letter includes information regarding cultural resources that is excluded from the EA due to sensitivity of site location.

Per 36 CFR 800, the Army requests your comments within 30 days of receiving this letter. If you have any questions or require further information, please contact Mr. Brian Greer, Cultural Resource Program Manager, at (912) 767-0992. Email correspondence may be directed to brian.greer@us.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert R. Baumgardt". The signature is fluid and cursive, with a large initial "R" and "B".

Robert R. Baumgardt
Director, Public Works

Enclosure

APPENDIX F

(To be completed following public review period)